

Office of the Consumer Advocate

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June 19, 2023

Board of Commissions of Public Utilities
120 Torbay Road, P.O. Box 2140
St. John's, NL A1A 5B2

**Attention: G. Cheryl Blundon, Director of
Corporate Services / Board Secretary**

Dear Ms. Blundon:

**Re: Newfoundland Power Inc. – Application for Electric Vehicle Load Management Pilot
Project – Review Schedule**

Further to the above-captioned, enclosed please find the Consumer Advocate's Requests for Information numbered CA-NP-001 to CA-NP-021.

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

Yours truly



**Dennis Browne, KC
Consumer Advocate**

Encl.
/jm

cc Newfoundland & Labrador Hydro
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IN THE MATTER OF the *Public Utilities Act* (the “Act”); and

IN THE MATTER OF an Application by Newfoundland Power Inc. for the approval to recover via its Electrification Cost Deferral Account costs to complete a pilot project to assess load management strategies for electric vehicles (“EV”) pursuant to section 80 of the Act.

**CONSUMER ADVOCATE
REQUESTS FOR INFORMATION
CA-NP-001 to CA-NP-021**

Issued: June 19, 2023

- 1 CA-NP-001 (Reference EV Load Management Pilot Project, page 1) It is stated “*The*
2 *results of the pilot project will inform the next suite of customer demand*
3 *management programs anticipated to be launched by the utilities in 2026.*”
4 Further, it is stated (page 1) “*Newfoundland Power proposes to recover*
5 *actual costs incurred to complete the EV Load Management Pilot Project*
6 *through its Electrification Cost Deferral Account, as approved by the Board*
7 *in Order No. P.U. 3 (2022).*”
- 8 a) Why is it appropriate to recover costs of a pilot project that
9 Newfoundland Power states will inform demand management
10 programs, not electrification programs, in the Electrification Cost
11 Deferral Account?
- 12 b) Why is this EV charging load management pilot project not included as
13 part of NP’s Load Research Study and Retail Rate Design Review
14 agreed to at NP’s 2022/23 GRA?
- 15 c) Would the EV charging load management pilot project be better
16 informed if EV charging load were considered from the perspective of
17 overall household customer demand rather than in isolation?
- 18 d) How will the external consultant and the internal resource involved in
19 the Load Research Study interact with the team undertaking the
20 proposed EV charging load management pilot project?
- 21 e) What cost impact are the load research/rate design studies having on the
22 EV charging load management pilot project, and vice versa?
- 23
- 24 CA-NP-002 (Reference EV Load Management Pilot Project, page 1) It is stated that the
25 budget estimate of this pilot project is \$1,504,000 and costs will be
26 recovered through Newfoundland Power’s Electrification Cost Deferral
27 Account.
- 28 a) Please provide an itemized accounting for each and every expenditure
29 which comprises the \$1,504,000 and costs pilot project estimate.
- 30 b) Please also provide an itemized accounting of each and every
31 expenditure and the total cost for NP’s Load Research Study and Retail
32 Rate Design Review as agreed at NP’s 2022/23 GRA.
- 33 c) Assuming the project proceeded as proposed, in what year would cost
34 recovery begin?
- 35 d) For the full period of cost recovery, please provide a table showing for
36 each year the amount recovered by NP, based on the budget estimate
37 and inclusive of interest.
- 38
- 39 CA-NP-003 (Reference EV Load Management Pilot Project, pages 1 and 4) It is stated
40 “*It is appropriate to conduct the EV Load Management Pilot Project in the*
41 *province at this time....*” Further, it is stated (page 4) that EV adoption in
42 NL continues to lag behind other provinces accounting for “*only 787 of the*
43 *383,000 vehicles on the province’s roads*” in the first quarter of 2023.
44 Finally, Figure 1 shows that the forecast light-duty EV adoption in the

1 province is about 25,000 vehicles in 2030 under the “*moderate growth*”
2 forecast.

- 3 a) Please confirm that 787 EVs represents approximately 0.2% of the
4 383,000 vehicles.
- 5 b) Is the number of light-duty EVs in the province forecast to be about
6 6.5% of the total number of light-duty vehicles in 2030?
- 7 c) Does Figure 1 show EV adoption by NL residential owners only, or does
8 it encompass all owners? If it is the latter then please provide a revised
9 Figure 1 for residential owners only.
- 10 d) Please explain why it is appropriate to conduct the EV pilot project “*at*
11 *this time*” given the limited EV market penetration in the province now
12 and into 2030.
- 13 e) Please provide evidence as to the market situation pertaining to
14 availability for EVs generally, as this pertains currently throughout
15 Canada and the USA, and how it affects the province.
- 16 f) Please provide costing for EVs generally and how this costing compares
17 with the costing for non-EV manufactured vehicles.
- 18

19 CA-NP-004

(Reference EV Load Management Pilot Project, page 8) Figure 3 shows
20 Forecast Unmanaged Peak Demand Impacts of Light-Duty EV Adoption:

- 21 a) Please confirm that under the moderate growth scenario the expected
22 unmanaged peak demand impact is about 40MW in 2030.
- 23 b) What is NP’s best estimate of the amount of this peak demand impact
24 that will be manageable in a cost-effective manner by 2030? In this
25 regard, what have other utilities in Canada found in their EV load
26 management pilots?
- 27 c) How much would a 20MW increase in peak demand impact customer
28 costs in 2030? Please provide the calculation and all assumptions.
- 29 d) If the proposed EV charging pilot program were delayed by two years,
30 would NP still be in a position to manage EV charging demand in 2030?
31 Please explain.
- 32 e) Please provide a table that gives the numerical estimates for each year
33 and for each of the three growth scenarios given in Figure 3.
- 34 f) For the forecasts in Figure 3, what assumptions are made about the
35 proportion of the light-duty EVs that are charged with Level 1, Level 2
36 and Level 3 chargers?
- 37 g) Are the forecasts in Figure 3 consistent with the focus of the pilot
38 project, i.e., do they correspond solely to charging at home by residential
39 customers who own light-duty EVs?
- 40 h) Please clarify what is meant by Unmanaged Peak Demand Impact.
41 (i) Specifically, is it the increment in peak demand impact over and
42 above some target or assumed managed peak demand impact? Or is
43 it the full peak demand impact assuming no demand management
44 measures are in place for light-duty EVs?

1 (ii) If it is the full peak demand impact then please provide a table
2 showing the assumed or targeted managed peak demand impact of
3 light-duty EVs for the same years as in Figure 3.
4

5 CA-NP-005 (Reference EV Load Management Pilot Project, page 10) It is stated “*The*
6 *most common technologies used to control vehicle charging are Level 2*
7 *smart chargers that are equipped with wireless or cellular communication,*
8 *or vehicle telematics via an EV’s onboard computer system.*”

- 9 a) What is the current status of Level 3 chargers?
10 b) Please provide a comparison of Level 1, 2 and 3 chargers including
11 supply voltage, cost of installation, cost of charging, and charging time.
12 c) How does the use of residential Level 1 charging of light-duty EVs
13 compare to residential Level 2 charging in terms of the impact on peak
14 demand?
15 d) What is the manufacturing availability for Level 3 chargers, and have
16 you reviewed the issue of availability of chargers generally?
17 e) What level of chargers are in use now in the province, and what is the
18 uptake on these chargers in the province based on the information
19 available?
20 f) Besides utilities, what other entities/municipalities/governments and the
21 like are engaged in placing chargers throughout the province? Please
22 advise of any and all information you have in this regard, and what entity
23 is coordinating these efforts?
24 g) What is the total number of charge stations in the province from all
25 sources at this time?
26 h) How many chargers does Hydro have at this time, and how many
27 chargers does NP have throughout the province?
28

29 CA-NP-006 (Reference EV Load Management Pilot Project, page 11) It is stated
30 “*Utilities throughout Canada are offering EV load management pilots to*
31 *small samples of EV drivers in their service territories. This allows utilities*
32 *to test and collect data on charging behaviours and managed EV charging*
33 *strategies, technologies and incentives.*”

- 34 a) Are the results of such studies in other Canadian jurisdictions relevant
35 to NL? Why is it important that NL conduct its own pilot rather than
36 relying on the results of pilots conducted in other Canadian
37 jurisdictions?
38 b) Please explain how the charging habits of the people of NL are likely to
39 vary from the charging habits of Canadians elsewhere.
40 c) Please provide copies of studies undertaken by other utilities in Canada
41 together with information pertaining to the cost of these studies and how
42 these costs were paid.

- 1 CA-NP-007 (Reference EV Load Management Pilot Project, page 11) It is stated
2 “*Newfoundland Power surveyed 19 electric utilities across Canada and*
3 *identified 10 utilities that have concluded or are currently completing or*
4 *developing EV load management pilot projects. Of these 10 utilities, two*
5 *utilities have used the results of their pilot projects to launch fulsome*
6 *programs to manage EV charging load.”*
- 7 a) Why are 9 of the 19 electric utilities surveyed not completing EV load
8 management pilot projects?
- 9 b) Please identify the reasons why some of the utilities in the survey chose
10 not to pursue passive load management strategies.
- 11 c) Did Ontario and Alberta utilities choose to pursue only passive load
12 management strategies, and if so, why?
- 13 d) Are the results of the 5 completed load management pilots indicated in
14 Attachment B available? If so, please provide copies for the record.
- 15 e) Please file for the record copies of the programs to manage EV charging
16 load that have been launched by the two utilities identified in the survey.
- 17 f) Why do we require any further EV pilot projects when so many are
18 readily available without spending \$1.5 million on duplicated efforts?
- 19
- 20 CA-NP-008 (Reference EV Load Management Pilot Project, page 12) It is stated
21 “*Newfoundland Power is proposing to implement an EV Load Management*
22 *Pilot Project prior to the widespread adoption of EVs in the coming years.”*
- 23 a) When does NP forecast that widespread adoption of EVs in the province
24 will occur?
- 25 b) How does NP define “*widespread adoption*”?
- 26
- 27 CA-NP-009 (Reference EV Load Management Pilot Project, page 13) Page 13 identifies
28 three types of information, enumerated (i), (ii) and (iii), that will be
29 collected during the proposed pilot.
- 30 a) Could the type (i) information “*EV owners’ normal EV charging*
31 *behaviours in the province, including the frequency and timing of*
32 *charging and associated system impacts*” be gleaned from the load
33 research study being undertaken by NP in response to the agreement
34 reached at the 2022/23 GRA?
- 35 b) Could the type (ii) information “*The amount of EV load that can be*
36 *shifted based on customers’ response to, and acceptance of, passive and*
37 *active load management strategies*” be gleaned from EV charging load
38 management pilots and programs implemented by other Canadian
39 utilities?
- 40 c) Could the type (iii) information “*The costs and challenges associated*
41 *with implementing load management strategies in the province,*
42 *including the use of different technologies such as Level 2 smart*
43 *chargers and vehicle telematics*” be gleaned from EV charging load
44 management pilots and programs implemented by other Canadian

1 utilities and customer surveys conducted during the normal course of
2 NP's interactions with household customers, or alternatively, specific
3 customer surveys?

- 4 d) What would it cost to develop a charging load management approach
5 based on the load research study results, Canadian utility experience
6 with load management pilot programs and NP customer surveys? Could
7 the external consultant and internal resource involved in the load
8 research/rate design studies stemming from the 2022/23 GRA conduct
9 such a study? What are the pros and cons of such an approach relative
10 to the approach proposed for the pilot project?
11 e) Please file a copy of the resume and work description for the internal
12 resource hired to manage and coordinate the load research/rate design
13 studies, and please provide and itemize all costs incurred to date in
14 reference to these studies.

15
16 CA-NP-010

(Reference EV Load Management Pilot Project, pages 13 and 14) It is stated
17 that the pilot project would target at-home charging and be limited to
18 residential customers, and that participants would be required to have
19 access to either telematics or Level 2 smart chargers.

- 20 a) Of the 787 EVs registered in the province (page 4), how many are light-
21 duty that are owned by residential customers and are charged at home
22 and have either telematics or L2 smart chargers?
23 b) To avoid bias, would not any sample of residential owners have to
24 include those who use L1 chargers at home?
25 c) With so few light-duty EVs in the province:
26 (i) Is it possible that these early adopters have characteristics (e.g.,
27 income, place of employment, enthusiasm for new technology,
28 environmental concern, daily commute distance) that are
29 different from those of the broader population of current
30 residential owners of light-duty vehicles with internal
31 combustion engines?
32 (ii) Does Newfoundland Power have any evidence that the set of
33 current EV owners in the province has an average household
34 income not significantly different from that of the general
35 population?
36 (iii) Does Newfoundland Power have any evidence that the set of
37 current EV owners in the province live in detached dwellings
38 with two-car garages in the same proportion as the general
39 population?
40 (iv) Does Newfoundland Power have any evidence that average age
41 of current EV owners in the province is not statistically different
42 from those who own only vehicles with internal combustion
43 engines?

- 1 (v) Does a sample from the set of early-adopters of EVs not
 2 introduce bias into a study that is meant to forecast the behaviour
 3 of those who have not yet chosen to purchase light-duty EVs and
 4 who may have substantially different behaviours?
 5 (vi) Has Newfoundland Power completed any preliminary analysis to
 6 confirm that a sample from the set of current households with
 7 light-duty EVs would be representative of those households that
 8 may purchase such vehicles in the future?
 9 (vii) Please provide any and all information available regarding the
 10 average cost of EVs in this province, the manufactured
 11 availability of EVs in this province, and issues pertaining to
 12 same.
 13 (viii) Please advise of any and all information in this province relating
 14 to the cost of EVs and issues pertaining to affordability for the
 15 average ratepayer.
 16 d) Based on data provided in the Application, approximately 0.2% of all
 17 vehicles on this province's roads are EVs. For the EV load management
 18 studies by 10 Canadian utilities that the Application (page 10) has
 19 identified as completed, currently completed or being developed, please
 20 provide the proportion of all vehicles in each of those utilities' service
 21 areas that were light-duty EVs at the start of those studies. If such
 22 service area data is not available then provide the relevant province's
 23 proportion.
 24 e) In NP's service territory, how many Level 2 chargers have been
 25 installed by residential customers to date?
 26

27 CA-NP-011 (Reference EV Load Management Pilot Project, page 14) Footnote 32 states
 28 that "up to 75% of participants may require the installation of a new Level
 29 2 smart charger."
 30 a) Does this mean that all or most of these participants currently have Level
 31 1 chargers?
 32 b) Please confirm that the Board is being asked to approve installation of
 33 up to 150 Level 2 smart chargers in homes that currently use Level 1
 34 charging as part of the pilot program.
 35 c) Are charging stations available in apartment buildings and
 36 condominium buildings in this province?
 37

38 CA-NP-012 (Reference EV Load Management Pilot Project, page 14) It is stated that
 39 vehicle telematics are "*currently limited to only newer models of EVs, and*
 40 *only certain models of EVs are compatible with Level 2 smart chargers.*"
 41 Footnote 30 states "*For example, Tesla vehicles are not compatible with*
 42 *Level 2 chargers for managed charging and the Hyundai Kona, Chevrolet*
 43 *Bolt and Nissan Leaf are not compatible with vehicle telematics for*
 44 *managed charging.*" Is it accurate to say that most EV charging can be

- 1 controlled remotely via: 1) telematics either via the charger or the vehicle
2 itself, 2) a third-party mobile app (Nova Scotia), or 3) artificial intelligence
3 (Hydro Ottawa)?
4
- 5 CA-NP-013 (Reference EV Load Management Pilot Project, Attachment A, page 1) It
6 is stated that the deferral account “*shall exclude electrification expenditures*
7 *that are general in nature and not associated with a specific electrification*
8 *program, such as costs associated with providing electrification awareness,*
9 *and general planning, research and supervision costs*”. Please explain how
10 the proposed pilot program meets this requirement. Specifically, please
11 identify the electrification program that the proposed pilot program relates
12 to and provide the Board approval.
13
- 14 CA-NP-014 (Reference EV Load Management Pilot Project) What evidence is available
15 to demonstrate that the proposed pilot project would generate benefits to all
16 ratepayers in excess of its cost?
17
- 18 CA-NP-015 In paragraph 8 of the Application, the Applicant states that the EV Load
19 Management Pilot Project will collect information on local EV owners’
20 charging behaviours.
21 (a) How many EV owners are there in the province at this time who are NP
22 residential customers?
23 (b) How many EV owners are anticipated to be in the province in 2024,
24 2025, 2026, and in 2027 who will be NP residential customers, and
25 please provide the evidence as to the sources of this information.
26 (c) In reference to the above, how many EV owners are Hydro residential
27 customers?
28
- 29 CA-NP-016 In paragraph 9 of the Application, the Applicant references the
30 Electrification Cost Deferral Account.
31 (a) Please provide particulars as to the amounts in the account at this time
32 and itemize the same.
33 (b) Please inform of any government grants or the like which had been
34 received by the Applicant for the costs related to EVs and EV charging
35 stations.
36 (c) Please provide particulars of any and all government grants which are
37 ongoing to assist with the cost of EVs and EV charging stations and pilot
38 projects in reference to these matters.
39
- 40 CA-NP-017 In the Executive Summary, the Applicant stated that the EV Load
41 Management Pilot Project aims to understand EV charging behaviours in
42 the province and the effectiveness, cost, and challenges of different
43 strategies to shift EV load to off-peak periods.

- 1 (a) With the low number of EV vehicles currently in the province and the
2 low number of residential customers with EVs, how can any such
3 project be effective at this time?
4 (b) If the strategy is to shift EV load to off-peak periods, is the Applicant
5 referencing time of day/time of use rates, or alternatively, how is this to
6 be achieved?
7 (c) When was the last time the Applicant studied time of use rates, and what
8 was the result of that study?
9 (d) Is the Applicant now advocating time of use rates and, if so, are the
10 meters installed in recent years by Newfoundland Power equipped for
11 time of use rates?
12 (e) Who prepared the EV Load Management Pilot Project and what costs
13 were incurred in the preparation of this application?
14
- 15 CA-NP-018 At section 3.2 the Applicant references Dunsky modelling for the adoption
16 of electric vehicles in this province and various models of growth for EVs.
17 (a) Please inform if vehicle dealerships in the province agree with the
18 number of vehicles Dunsky anticipates for each of 2025 to 2035 in
19 reference to the availability of manufacturing of electric vehicles
20 generally.
21
- 22 CA-NP-019 In section 3.4 (lines 7-9) titled “Canadian Utility Practice”, the Applicant
23 references utilities throughout Canada and the offer for EV load
24 management pilots to be small samples of EV drivers in their service
25 territory.
26 (a) Please advise as to which utilities the Applicant is referring and the
27 number of vehicles in each of the jurisdictions referenced and the
28 number of customers for those utilities in these jurisdictions.
29
- 30 CA-NP-020 Also, the Applicant references at section 3.4, lines 13-14, two utilities that
31 have used the results of their pilot projects to launch fulsome programs to
32 manage EV charging load.
33 (a) Which two utilities is the Applicant referencing? And,
34 (b) What are the populations of these provinces and the utility customer
35 population and how do these compare with this province?
36
- 37 CA-NP-021 At section 3.4, lines 16-21, the Applicant references FortisBC, BC Hydro,
38 Nova Scotia Power and Hydro-Quebec and utilities in Ontario and
39 Alberta.
40 (a) Please provide information re the number of electric vehicles in these
41 jurisdictions at this time and the forecast, and how these compare with
42 this province.
43 (b) Further, as to the studies referenced by the Applicant, please inform as
44 to what the cost of these studies were and who paid for these studies.

- 1 (c) In reference to costs, did the amounts include labour costs? Please
2 provide particulars as to these labour costs and the costs for program
3 administration.
4 (d) Given the surveys that have been undertaken by other Canadian utilities,
5 why can't the Applicant access these surveys and extrapolate
6 accordingly as a cost-saving measure.

DATED at St. John's, Newfoundland and Labrador, this 19th day of June, 2023.

Per: 
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