

1 **Q. (Reference Technical Conference Issue 9)**

- 2 a) **Can NP confirm that the purpose of its 2023 CBA proposal for more EV**
 3 **charging stations is to encourage more consumption of excess energy**
 4 **from Muskrat Falls?**
- 5 b) **Can NP confirm that excess energy from the Muskrat Falls project will**
 6 **be reliably available throughout 2023 on the island integrated system?**
- 7 c) **For a vehicle model that is available with a gasoline engine as well as an**
 8 **all-electric version (e.g., a Ford F-150) what is the current cost of a full**
 9 **charge using a fast charger at one of NP's charging stations and what is**
 10 **the resulting range? How many litres of gasoline would the gasoline**
 11 **counterpart need in order to cover the same range, and at what cost at**
 12 **current gasoline prices?**
- 13 d) **Has NP considered setting the price of charges either to reflect the actual**
 14 **cost of its charging stations or to reflect the cost of equivalent coverage**
 15 **by a gasoline vehicle as per (c) above? If the price is not set in relation**
 16 **to cost, how does NP set the price of electricity at its charging stations?**
- 17 e) **To the extent that NP's charging stations do not cover cost, what will be**
 18 **the cost to NP ratepayers of covering NP's losses over time including any**
 19 **compensation for the time value of money?**
- 20 f) **Has NP considered the risk that hydrogen fuel-cell vehicles could**
 21 **overtake electric vehicles and thereby strand charging station assets?**
 22 **Did Dunsky allude to hydrogen fuel cell vehicles in its report or in**
 23 **correspondence with Newfoundland Power over the course of its study?**
 24 **Does Newfoundland Power plan to enter the market to service fuel-cell**
 25 **vehicles as well?**
- 26 g) **In its estimation of the rate mitigation effect of increased electricity**
 27 **consumption due to EVs has NP taken into account the offsetting effect**
 28 **of reduced electricity consumption due to its accelerated LED Street**
 29 **Lighting Replacement plan?**

30

31 A. a) The purpose of electrification initiatives included in the *Electrification,*
 32 *Conservation and Demand Management Plan: 2021-2025* ("the 2021 Plan") is to
 33 maximize domestic energy usage in order to provide a long-term rate mitigating
 34 benefit for customers. This includes the proposed investment in EV charging
 35 stations as part of Newfoundland Power's *2023 Capital Budget Application*.

- 36
- 37 b) Newfoundland Power cannot confirm that excess energy from the Muskrat Falls
 38 Project will be readily available throughout 2023 on the Island Interconnected
 39 System. Hydro has indicated that final commissioning of the project could be
 40 achieved by the end of 2022.¹

41

42 The customer benefits of electrification initiatives, including those that promote
 43 EV adoption, are long-term in nature. Implementation of the 2021 Plan is
 44 forecast to add approximately 0.5 GWh and 2.4 GWh of load in the first two
 45 years.² This would not be expected to have a material impact on near term

¹ See the response to Request for Information CA-NP-046, part f).

² See Newfoundland Power's *2021 Electrification, Conservation and Demand Management Application, Volume 2, Schedule L*, page 1 of 5, Table L-1.

1 supply planning or system costs. By contrast, EVs are forecast to add
 2 approximately 657 GWh of energy usage over the longer term, providing a rate
 3 mitigating benefit for customers.³
 4

- 5 c) Completing the requested comparison would be dependent upon a number of
 6 assumptions.⁴
 7

8 To provide an illustrative example, the Ford F-150 Lightning Standard Range
 9 battery has a 98 kWh battery with a range of 370 kilometres and
 10 472 horsepower. It requires approximately 170 minutes to charge from 0% to
 11 100%. Using the current cost of \$15.00/hour to charge at a DCFC station, it
 12 would cost approximately \$42.50 for a full charge.
 13

14 The equivalent gasoline counterpart, the Ford F-150 5.0 litre V8 with
 15 400 horsepower, has a combined fuel economy of 12.4 litres per 100 kilometres.
 16 To drive the equivalent range of 370 kilometres in the gasoline powered F-150,
 17 the vehicle will consume approximately 45.9 litres of gasoline. At a cost of \$1.65
 18 per litre, this equates to \$75.74.⁵
 19

- 20 d) The fuel savings associated with operating an EV are a key benefit for customers
 21 when transitioning from a gasoline powered vehicle to an electric model. The
 22 example outlined in part c) illustrates some of the fuel savings available to
 23 customers making this transition. Setting the rates for charging stations
 24 equivalent to the cost of gas for a comparable gasoline vehicle as per part c)
 25 would reduce the fuel savings, potentially negatively impacting the rate of
 26 adoption of EVs.
 27

28 Newfoundland Power sets market based rates for its charging stations. Charging
 29 a market rate is consistent with practices in Canadian and American
 30 jurisdictions.⁶
 31

32 Newfoundland Power currently charges a rate of \$15.00/hour for its DCFC
 33 stations. The rate of \$15.00/hour was selected by Newfoundland Power to be
 34 consistent with the rate charged by Newfoundland and Labrador Hydro
 35 ("Hydro"). Hydro established its rate based on a comparison to rates charged
 36 elsewhere in Atlantic Canada. Maintaining a reasonable price that is comparable
 37 to other jurisdictions is essential to encouraging EV adoption.

³ See the response to CA-NP-046, part c).

⁴ The speed at which an EV will charge at a fast Direct Current Fast Charging ("DCFC") station varies depending on: (i) the capacity of the charger; (ii) the model of vehicle; (iii) the size of the battery; and (iv) the current state of charge of the battery. For example, to protect the battery, charging speeds tend to slow down after the battery has reached 80% capacity. Additionally, the price of gasoline fluctuates, making a comparison between re-fueling electric and gasoline-powered vehicles variable over time. For example, the price per litre of self-service gasoline on the Avalon Peninsula was \$1.22 at the beginning of 2021. In this scenario the cost to fill the gasoline Ford F-150 would be \$56.00. See [Schedule A - 2021-01-07.xlsx \(pub.nl.ca\)](#).

⁵ The cost per litre of self-service gasoline on the Avalon Peninsula on September 17, 2022 was \$1.65. See [Schedule A - 2022-09-17.xlsx \(pub.nl.ca\)](#).

⁶ See Newfoundland Power's *2021 Electrification, Conservation and Demand Management Application, Volume 2, Schedule B*.

1 Measurement Canada does not currently allow for billing at EV charging stations
 2 based on energy consumed. According to Measurement Canada:

3
 4 *"Currently, electric vehicle charging stations used in a commercial*
 5 *transaction setting are either billing on the basis of time or a flat rate*
 6 *charge, or they are delivering the energy free of charge. This approach*
 7 *has allowed the electric vehicle (EV) charging infrastructure to keep pace*
 8 *with the rise of EV adoption while also providing industry with time to*
 9 *develop and refine technologies necessary for accurate and reliable*
 10 *measurement of kilowatt hour (kWh) consumption at EV charging*
 11 *stations. The use of a flat fee or time-based billing method for EV*
 12 *charging is exempt from the Electricity and Gas Inspection Act (EGIA)*
 13 *and other statutes at this moment.*

14
 15 *We are developing requirements to allow EV charging based on the*
 16 *amount of energy consumed during a charge (i.e. by kWh). These*
 17 *requirements will be consistent with the EGIA, which sets out*
 18 *requirements for determining how measuring devices must perform when*
 19 *they are used to establish a charge for the purchase or sale of electricity*
 20 *as well as the requirement for businesses and device owners to register*
 21 *their measuring devices when selling electricity."*⁷

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 23 e) Costs related to Newfoundland Power's *EV Charging Network* will be recovered
 24 through the Electrification Cost Deferral Account. The exact amount that will be
 25 recovered through the account will vary based on, as examples, the revenue
 26 generated at the charging stations and any funding that Newfoundland Power
 27 receives to offset its investment in EV charging infrastructure.

28
 29 Costs associated with Newfoundland Power's investment in EV charging
 30 infrastructure were included in the net present value ("NPV") analysis of the
 31 customer benefits of the electrification initiatives included in the 2021 Plan. The
 32 NPV analysis showed that increased net revenues from electrification initiatives
 33 will provide a rate mitigating benefit for customers of approximately
 34 0.9 cents/kWh by 2034.⁸

- 35
 36 f) Battery EVs are a more efficient and economic replacement for internal
 37 combustion engine vehicles compared to hydrogen fuel cell vehicles.⁹ Natural
 38 Resource Canada's *Hydrogen Strategy for Canada* notes that there are a small
 39 number of hydrogen fuel cell light duty passenger vehicles and transit buses in
 40 Canada; however, there is an opportunity for these types of vehicles in long-haul
 41 heavy-duty trucking applications.¹⁰ As such, the risk that hydrogen fuel cell
 42 vehicles will overtake battery EVs, thereby stranding charging station assets, is
 43 very low.

⁷ See <https://www.ic.gc.ca/eic/site/mc-mc.nsf/eng/lm04949.html>.

⁸ See the response to Request for Information PUB-NP-011.

⁹ See <https://about.bnef.com/electric-vehicle-outlook/>.

¹⁰ See <https://www.nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/canadas-green-future/the-hydrogen-strategy/23080>.

1 Dunsy Energy Consulting did not allude to hydrogen fuel cell vehicles in the
2 market potential study included in the 2021 Plan or in correspondence with
3 Newfoundland Power over the course of completing the study.

4
5 Newfoundland Power does not currently plan to enter the market to service
6 hydrogen fuel cell vehicles.

7
8 g) Yes, the estimation of the rate mitigation effect of increased electricity
9 consumption due to EVs considers the reduced electricity consumption
10 associated with the *LED Street Lighting Replacement Plan*.

11
12 The rate mitigating benefits of electrification are calculated based on the forecast
13 incremental increase in energy consumption associated with electrification efforts
14 compared to Newfoundland Power's baseline energy consumption forecast. The
15 baseline energy consumption forecast accounts for a reduction in energy usage
16 associated with the *LED Street Lighting Replacement Plan*.¹¹

¹¹ Newfoundland Power's load forecast accounts for a change in street lighting load of 33 GWh to 17 GWh when the *LED Street Light Replacement Plan* has been completed.