

- 1 Q. (Reference CA-NP-013 (b), NLH-NP-030 and NLH-NP-032) In CA-NP-013(b) it is
2 stated “*Newfoundland Power is currently completing a heat pump load research*
3 *study.*” In NLH-NP-030 it is stated “*Newfoundland Power’s most recent load research*
4 *study was completed on June 16, 2006 and was filed as part of the Company’s 2008*
5 *General Rate Application.*” In NLH-NP-032 it is stated “*The Company’s next load*
6 *research study is anticipated to commence after Muskrat Falls Project costs are*
7 *reflected in customer rates.*”
- 8 a) Other than the heat pump load research study, is Newfoundland Power
9 conducting any other load research at this time? If so, please provide details.
10 If not, please explain why Newfoundland Power believes that the study
11 conducted in 2006 remains relevant today and results in a fair allocation of
12 costs to customer classes in the 2023 test year, particularly in light of the high
13 conversion rate to heat pumps.
- 14 b) Is it advisable for the Board to delay approval of Newfoundland Power’s
15 proposed electrification program until it has better load research data,
16 particularly given that if EV charging is not properly managed electrification
17 could result in significant cost increases rather than decreases for customers?
18 Can the Board make an informed decision on electrification in the absence of
19 such critical information?
- 20 c) Following the conduct of a proper load research study, will Newfoundland
21 Power be able to develop typical load profiles for its customers? For
22 example, will Newfoundland Power have the information available to develop
23 load profiles for its household customers under the following scenarios: 1)
24 with electric baseboard heating, electric hot water and EV charging, 2) with
25 electric heat pump, electric hot water and EV charging, 3) with non-electric
26 heating, electric hot water and EV charging, 4) with non-electric heating,
27 non-electric hot water and EV charging, 5) with non-electric heating, electric
28 hot water and no EV charging, etc.?
- 29 d) What is the expected cost for Newfoundland Power to update its load
30 research information and how long would it take to conduct the analysis?
- 31
- 32 A. a) Since completing the *2006 Load Research Study*, Newfoundland Power
33 has completed various load research analyses aimed to provide insight on
34 particular demand management options and respective customer usage patterns.
35
- 36 In 2011, the Company commenced a 2-year study of time-of-day electricity
37 rates.¹ In 2015, Newfoundland Power completed a direct load control study
38 involving hot water tanks.² Since 2014, the Company has been gathering
39 information and usage data associated with heat pump usage including: (i) annual

¹ The results of the study were filed with the Board in Attachment A to response to Request for Information PUB-NP-029 in the *Rate Mitigation Options and Impacts Reference* proceeding.

² The results of the study were filed with the Board in Newfoundland Power’s *2015 Conservation and Demand Management Report* dated April 1, 2016.

1 customer surveys; (ii) tracking usage data of customers that have installed heat
2 pumps; and (iii) initiating a heat pump study in 2019.³

3
4 Newfoundland Power also completes comprehensive market potential studies
5 every 5 years, which consider customer usage effects from current and future
6 market technologies such as heat pumps and electric vehicles (“EVs”).⁴

7
8 To date, there has been no indication from analyses completed that it would be
9 unreasonable to base demand allocations in annual cost of service studies on the
10 results of the *2006 Load Research Study*.

11
12 Newfoundland Power remains committed to completing load research analyses.
13 For example, in consultation with Newfoundland and Labrador Hydro (“Hydro”),
14 Newfoundland Power is considering extending the heat pump study initiated in
15 2019 into future winter periods given the relatively mild winter seasons
16 experienced in the last 2 years. Further, load research associated with EV
17 charging would be conducted as part the assessment of options for effective load
18 management as outlined in part (b) of this response.

19
20 The results of a general load research study at this time may only be useful for a
21 short period given impacts on customer usage due to the COVID-19 pandemic
22 and the effect reflecting Muskrat Falls Project costs in customer rates may have
23 on customer behaviours and usage patterns.⁵ In Newfoundland Power’s view,
24 commencing a general load research study following the implementation of
25 customer rates reflecting the Muskrat Falls Project will provide for cost allocation
26 results that could be used over the long-term.⁶

- 27
28 b) No, it is not advisable for the Board to delay approval of Newfoundland Power’s
29 proposed electrification program until it has better load research data. The market
30 potential study completed by Dunsy Energy Consulting, which was filed as part
31 as Newfoundland Power’s *2022/2023 General Rate Application* and *2021*

³ The results of heat pump analyses completed to date has informed Newfoundland Power’s customer, energy and demand forecasts. See, for example, response to Request for Information NLH-NP-057.

⁴ For the latest potential study, see the *2022/2023 General Rate Application, Volume 2, Supporting Materials, Tab 7, Electrification, Conservation and Demand Management Plan: 2021-2025*, Schedule C.

⁵ It is unclear to Newfoundland Power to what extent rate mitigation measures will offset customer rate impacts resulting from the operation of Hydro’s proposed supply cost deferral account. For example, Hydro’s projections of the account show, before rate mitigation, a balance owing from customers of approximately \$800 million as of December 31, 2022. It is also unclear how rate mitigation measures will offset ongoing operating and maintenance costs or the costs of sustaining capital associated with the Muskrat Falls Purchase Power Agreement. See responses to Requests for Information NP-NLH-007 and NP-NLH-017 filed as part of Hydro’s *Supply Cost Accounting Application*. Finally, to Newfoundland Power’s knowledge, government rate mitigation measures do not reflect the potential requirement for additional investments in reliability of the Labrador-Island Link or additional generation on the Island of Newfoundland. See response to Request for Information PUB-NP-037.

⁶ See responses to Requests for Information NLH-NP-032, NLH-NP-033 and NLH-NP-099.

1 *Electrification, Conservation and Demand Management Application*, provides
2 information showing that system costs will increase without utility intervention.⁷
3 This is largely due to an increase in capacity-related system costs resulting from
4 the unmanaged charging of EVs. Increased system costs would put upwards
5 pressure on customer rates and would be inconsistent with provincial rate
6 mitigation objectives.

7
8 Initiatives outlined in the *Electrification, Conservation and Demand Management*
9 *Plan: 2021-2025* allow for options for effective load management to be assessed
10 and implemented prior to exposing customers to increased system costs due to
11 unmanaged EV charging.⁸

12
13 The Board's decision on Newfoundland Power's electrification initiatives will
14 consider the above as part of the record associated with the Company's *2022/2023*
15 *General Rate Application* and *2021 Electrification, Conservation and Demand*
16 *Management Application*.

- 17
18 c) The *2006 Load Research Study*, which includes daily load curves for residential
19 customer class loads, is provided as Attachment A to response to Request for
20 Information NLH-NP-030. Appendix E of the *2006 Load Research Study* shows
21 the load curves for both the Domestic All-Electric (electric primarily heating
22 source) and Domestic Regular (alternative primary heating source) subclasses for
23 3 winter system peak days.

24
25 Load research associated with EV charging would be conducted as part the
26 assessment of options for effective load management as outlined in part (b) of this
27 response.

- 28
29 d) General load research studies are typically completed over a 2 to 3-year period.⁹
30 Newfoundland Power has not completed a detailed assessment and associated
31 requirements for a general load research study. Therefore, a cost estimate cannot
32 be provided.

⁷ See the *2022/2023 General Rate Application, Volume 2, Supporting Materials, Tab 7, Electrification, Conservation and Demand Management Plan: 2021-2025*, page 27, Figure 6.

⁸ For further information, see response to Request for Information PUB-NP-037 filed as part of Newfoundland Power's *2021 Electrification, Conservation and Demand Management Application*.

⁹ The *2006 Load Research Study* was conducted over the period December 2003 to March 2006. The *1994 Load Research Study* was conducted over the 1992 to 1994 period.