

1 Q. **Reference: Attachment 1- Long-Term Supply for Southern Labrador - Economic and Technical**
2 **Assessment**

3 Table 2 on page 4 provides the base case operating load forecast (2020) for the Southern
4 Labrador communities for the period 2020 to 2039.

5 a. Please provide a complete description of the existing and forecast demographics of the four
6 communities included in the table to support the load forecast, including the number of
7 customers in the four communities.

8 b. Please explain what is causing the net demand and net energy to increase over the 20-year
9 period in three of the four communities.

10 c. What is the sensitivity in the cost/benefit analysis if the load decreases over the next 20
11 years instead of increasing or remaining constant?

12 d. Does Hydro have any knowledge of new potential industrial/commercial customers that
13 may be included within these communities? If so, does the base case include the potential
14 load of a new industrial/commercial customers? If so, please include the amount of the
15 load and the potential timing of the new customer load coming on the system.

16 e. Has the potential impact of electric vehicles and electrification in general been incorporated
17 into the forecast? If not, please provide the rationale for not doing so.

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20 A.

21 a. According to the Statistics Canada Census from 2001 to 2016, all four areas included in the
22 southern Labrador study have experienced a decline in population. As of 2016, these areas
23 shared similar age characteristics to the province as a whole, with 14% of their combined
24 population being under 14 years of age and 16% being over the age of 65. Despite declining
25 population over the last two decades, three of the systems (Charlottetown, Port Hope
26 Simpson, and Mary's Harbour) have experienced increases in the number of domestic

1 customer accounts, while the number of domestic accounts in St. Lewis has remained flat. In
 2 the short term, the number of domestic customers and their annual consumption is forecast
 3 to track historical trends. Total customer numbers reflected in the forecast years 2020
 4 through to 2025 are provided in Table 1. Post 2025, a customer forecast is unavailable as the
 5 long-term forecast was developed at the total system level.

Table 1: Number of Customers¹

Year	Charlottetown	Mary's Harbour	Port Hope Simpson	St. Lewis	Combined
2020	232	271	235	127	865
2021	234	272	236	127	869
2022	236	273	236	127	872
2023	238	274	237	127	876
2024	240	275	237	127	879
2025	242	276	238	127	883

- 6 **b.** The increase in energy and demand requirements over the 20-year period is primarily based
 7 upon historical trends² that have been experienced in those three systems and assumes no
 8 incentives or changes to rates for customers to switch either to or from electric heating.
 9 There is also an increase in energy and demand requirements in the Mary's Harbour
 10 forecast for 2020 and 2021 that were based upon a service request for an additional fish
 11 plant in the community.
- c.** Please refer to Newfoundland and Labrador Hydro's ("Hydro") response to LAB-NLH-013,
 parts c and d.
- 12 **d.** A new fish plant in Mary's Harbour was included in the base forecast for that system. At the
 13 time the forecast was developed, the customer had indicated the desire to be connected
 14 and operational for the 2020 processing season. The total customer energy requirement
 15 included in the forecast for 2020 was 400 MWh and the impact to system peak was 140 kW.
 16 Post 2020, the total energy requirement for the new fish plant was forecast to be 548 MWh

¹ Total customer numbers include Domestic and General Service customers.

² Please refer to Hydro's response to NP-NLH-044 for historical load information for the period 2000–2020.

1 and total impact to the system peak was forecast to be 143 kW. The customer was
2 interconnected in February 2021.

3 Hydro is also aware of a potential large customer (a mine) in St. Lewis. Preliminary
4 discussions held in 2018 indicated load estimates of 3 MW. At the time this forecast was
5 developed, Hydro had not received any additional load estimates or information regarding
6 the timing of potential development; therefore, this customer was not included in the base
7 case forecast.

8 e. The impact of electric vehicles (“EV”) and electrification was not incorporated into the base
9 case forecast. Due to the high marginal costs on diesel systems, Hydro does not plan to offer
10 electrification programming to these customers, as doing so would only increase system
11 costs.

12 Hydro continues to study the potential impact of EVs on all its systems, including its isolated
13 systems, particularly in the context of a federal government requirement for exclusive zero-
14 emission vehicles in the 2035 to 2040 timeframe. In this respect, Hydro is in the early stages
15 of planning how the increased usage of EVs in diesel systems can be managed to limit the
16 impact on the rural deficit, for example through peak demand management.

17 While increased EV ownership in southern Labrador would result in additional energy
18 consumption, sensitivity analysis provided in Hydro’s application³ concluded that a
19 significant increase in the energy forecast would not change the outcome of the cumulative
20 net present value analysis. The sensitivity analysis also concluded that an interconnection of
21 these systems would be best equipped to accommodate an increase in demand, such as
22 that associated with increased uptake of electric vehicles. Given an interconnection would
23 result in a summer peaking system, there would need to be a large uptake in electrification
24 for the winter peak to reach and exceed the summer peak.

25 While EVs represent a potential increase in energy consumption, Hydro continues to provide
26 conservation and demand management programs in isolated systems with the intention of

³ “Long-Term Supply for Southern Labrador – Phase 1,” Newfoundland and Labrador Hydro, July 16, 2021, sch. 1, att. 1, sec. 6.4, at pp.44–45.

1 reducing electricity consumption and customer impact on system peak. According to
2 research findings in the report presented in Attachment 2 to Hydro’s response to NP-NLH-
3 043,⁴ residents of St. Lewis and other coastal Labrador communities generally support these
4 programs and the switch to energy-efficient technologies. The report also stated that
5 residents would support converting to high-efficiency woodstoves over alternative heating
6 approaches, citing lower heating costs and continuing an important cultural tradition as part
7 of their reasoning.

⁴ Nicholas Mercer, Paul Parker, Debbie Martin, and Amy Hudson, “\$RIGHT Community Energy Planning in NunatuKavut, Labrador: Preliminary Research Findings” October 2018.