Q. (Reference slide 36) It is understood that Newfoundland Power can manage EV charger demand through existing curtailment programs without the need for time-of-use rates.

a) Can Newfoundland Power also manage EV charger demand without the need to provide subsidies/rebates for EV chargers?

b) If the Board does not approve the proposed electrification program, will Newfoundland Power still have opportunities to manage EV charger demand through existing curtailment programs without the need for time-of-use rates? If so, please explain the available opportunities.

c) Would time-of-use rates be an effective means for managing charger demand, leaving the decision on how and when to charge EVs with the customer rather than the utility?

A. *This Request for Information relates to the Electrification, Conservation and Demand Management Plan: 2021-2025 (the "2021 Plan") developed in partnership by Newfoundland Power Inc. ("Newfoundland Power") and Newfoundland and Labrador Hydro ("Hydro") (collectively, the "Utilities") and the related Technical Conference presented by the Utilities on February 1, 2022. Accordingly, the response reflects collaboration between the Utilities.*

The Utilities note that EV charger demand cannot be managed through existing curtailment programs. The market potential study completed by Dunsky Energy Consulting ("Dunsky") found that: *"Existing industrial curtailment potential places Newfoundland and Labrador at the high end of achievable range when benchmarked against other jurisdictions."*[1] This statement related to demand response potential in the province generally, not the management of EV charger demand. With respect to EV charger demand, Dunsky recommended the Utilities pilot strategies to determine which options would be most effective.[2]

a) The Utilities would be limited in their options to manage EV charger demand without the planned incentives for smart chargers.

The charger incentives for residential and commercial customers are designed to cover the incremental cost of purchasing smart chargers that are capable of load management, compared to standard chargers that do not have this capability. For residential customers, smart chargers will cost approximately $500 more. The incremental cost is significantly higher for commercial customers.[3] From the customer perspective, both types of chargers perform the same function: the ability to charge an EV. A customer would therefore be unlikely to incur the additional cost of installing a smart charger without an incentive program.

[1] See Newfoundland Power's Application, Volume 2, Schedule C, page 24 of 325.
[2] Ibid., Schedule E, page 2 of 25.
[3] See response to Request for Information PUB-NP-041 for an explanation of the higher incremental cost of smart chargers for commercial customers.

Additionally, customers who avail of the smart charger incentive would be invited to enroll in the EV Demand Response Pilot project. This pilot project is essential to investigating which load management options would be effective in the province. Without the planned incentive program, the Utilities would not have a database of customers who are eligible to participate in the pilot project.

b) Existing curtailment programs are not a viable option for managing EV load. Customers on the Curtailable Service Option represent larger customers who have interval metering installed on their premises.[4]

Effectively managing EV load without time-of-use rates generally requires the use of: (i) smart chargers with networking capabilities, which allow for remote monitoring of a vehicle's charging so it can be shifted to off-peak hours; or (ii) direct load controllers on the electrical circuit where the charger is installed, which allow a utility or third-party service provider to control a vehicle's charging to shift it to off-peak hours. These devices are often paired with incentives, such as a monthly credit, for customers that shift their charging to off-peak hours. The EV Demand Response Pilot project will allow the Utilities to explore the options that would be most effective in the province.

c) No, time-of-use rates are not currently considered a cost-effective means to manage EV charger demand.

The benefit-to-cost ratio of dynamic rates, including time-of-use rates, was considered by Dunsky.[5] The benefit-to-cost ratio was assessed through the Program Administrator Cost ("PAC") test. Under this test, a result of 1.0 or greater is required for an initiative to be considered cost-effective.

Table 1 provides the forecast PAC test results for dynamic rates over time.[6]

Table 1:
PAC Test Results
Dynamic Rates
(2020 to 2034)

Year	PAC Result
2020	0.5
2024	0.5
2029	0.7
2034	1.2

[4] The Curtailable Service Option is available to customers billed on Rate #2.3 or #2.4 that can reduced their demand by between 300 kW and 5000 kW. See *Schedule of Rates Rules & Regulations*, page 27. During the 2020-21 Winter season, there were 24 sites enrolled in Newfoundland Power's Curtailable Service Option.

[5] See Newfoundland Power's Application, Volume 2, Schedule E.

[6] Ibid., page 11 of 25.

Dunsky determined that time-of-use rates are not forecast to be cost-effective for customers until at least 2030, when they may be required to manage increased EV load.

See part (b) for information on the initiatives that are typically implemented to manage EV charger load.