

- 1 **Q. (Reference Application, 2025 – 2029 Capital Plan, page 3) It is stated**
 2 **"System load growth is also expected to be affected by electric vehicle ("EV")**
 3 **adoption over the forecast period." How is electric vehicle adoption in the**
 4 **province impacting:**
 5 **a) NP's load forecast and its distribution expansion plan?**
 6 **b) NP's approach to reliability given that numerous customers will have on-**
 7 **site battery storage capable of supplying essential electricity services**
 8 **during power system outages?**
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- 10 **A. a) Newfoundland Power has incorporated the expected impacts of electric vehicle**
 11 **adoption in the province into the Company's load and sales forecast.¹ Table 1**
 12 **provides the estimated sales impact from electric vehicles based on this forecast for**
 13 **the 2023 to 2029 period.²**

Table 1: Sales Forecast Impacts of Electric Vehicle Usage 2023-2029			
Year	Estimated Fully Electric Vehicles (Cumulative)	Annual Sales Forecast Impacts (GWh)	Cumulative Sales Forecast Impact ³ (GWh)
2023	988	1.2	1.2
2024	1,448	3.1	4.3
2025	2,110	4.4	8.7
2026	3,007	6.5	15.2
2027	4,298	9.1	24.3
2028	6,197	13.5	37.8
2029	8,979	19.5	57.3
Total	27,027	57.3	

- 14 For capital investments reflected in the 2025 Capital Budget Application and the
 15 five-year capital plan to address the projected adoption of electric vehicles, see the
 16 response to Request for Information PUB-NP-003.

¹ Estimates of electric vehicle adoption come from Dunskey Energy + Climate Advisors work in relation to Newfoundland and Labrador Hydro's *Reliability and Resource Adequacy Study – 2022 Update*.

² See the response to Requests for Information PUB-NP-054, part a) and PUB-NP-097, part d) filed in relation to Newfoundland Power's *2025/2026 General Rate Application*.

³ By 2029, the 57.3 GWh total cumulative impact is forecast to be 30 GWh related to the domestic class (i.e., light duty vehicles) and 27.3 GWh related to the general service class. The total impact of the cumulative sales by 2029 on peak demand, based on a five-year average system load factor of 49.35% is an estimated: 1 MW by 2024; 2 MW by 2025; 4 MW by 2026; 6 MW by 2027; 9 MW by 2028; and 13 MW by 2029.

1 b) Newfoundland Power is continuing to monitor developments on the ability of electric
2 vehicles to be relied upon to provide electricity services during power outages or
3 times of system need.
4

5 The ability for an electric vehicle to feed supply away from the vehicle is known as
6 “bidirectional charging”.

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8 Energy stored in a vehicle’s battery has multiple potential uses:

- 9 • Vehicle to home (“V2H”) allows a vehicle to serve as a backup generator to a
10 home during a power outage. Similar uses could be vehicle to business
11 (“V2B”).
- 12 • Vehicle to grid (“V2G”) allows a vehicle to send electricity back to the utility
13 grid, similar to net metering customers.
- 14 • Vehicle to load (“V2L”) typically involves a vehicle powering other devices
15 such as camping equipment, power tools, home appliances and other stand-
16 alone devices. This could also include vehicle to vehicle (“V2V”).

17
18 The bidirectional charging industry is in the early stages of transitioning to a
19 commercially ready product.⁴ Newfoundland Power is monitoring developments in
20 bidirectional charging to determine how it may impact provision of electricity services
21 during power system outages.⁵

⁴ See Smart Electric Power Alliance. *The State of Bidirectional Charging in 2023*. Retrieved August 2024 from <https://sepapower.org/resource/the-state-of-bidirectional-charging-in-2023/>, page 9.

⁵ Many barriers still need to be overcome in order for customers and utilities to reliably use electric vehicles as an energy source. For example, from a technical standpoint, bidirectional chargers and vehicle manufacturers need to further realize cost reductions, and the broader industry must converge on and adopt common communication protocols.