

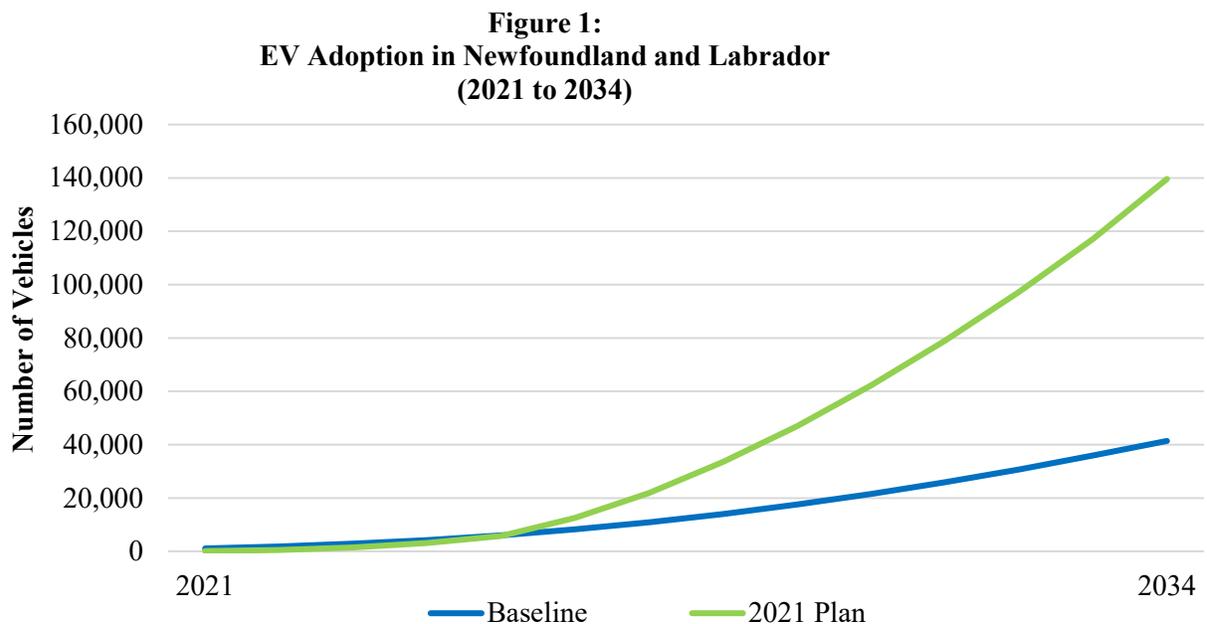
1 **Q. The Dunsky report states at page 116 that EV charging load management will be**
 2 **critical to handle the system impacts of EVs and benefit financially from EV**
 3 **adoption. In light of this will there be any requirements for recipients of the EV**
 4 **incentives with respect to managing load?**

5
 6 A. *This Request for Information relates to the Electrification, Conservation and Demand*
 7 *Management Plan: 2021-2025 (the “2021 Plan”) developed in partnership by*
 8 *Newfoundland Power and Newfoundland and Labrador Hydro (“Hydro” or, collectively,*
 9 *the “Utilities”). Accordingly, the response reflects collaboration between the Utilities.*

10
 11 **A. Load Management Generally**

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 13 The rate mitigating benefit of electrification will primarily be achieved through
 14 increasing the province’s adoption of EVs. Effective load management is essential to
 15 achieving the long-term rate mitigating benefits of EV adoption.

16
 17 Figure 1 provides a forecast of EV adoption in the province under baseline conditions
 18 (i.e. without utility intervention) (the “baseline scenario”) and with implementation of the
 19 2021 Plan.¹

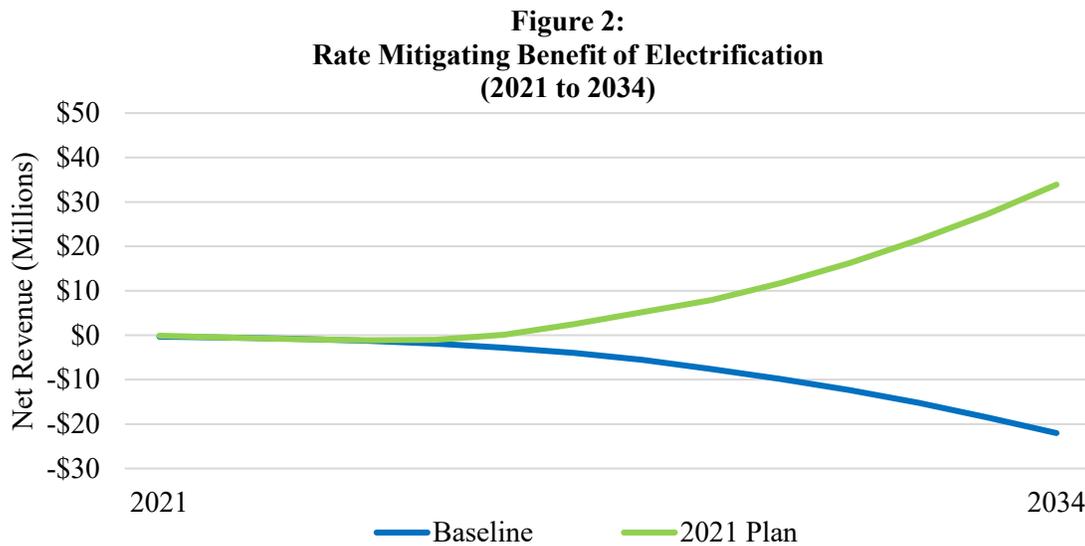


20 The 2021 Plan is forecast to more than triple the number of EVs in the province by 2034.

¹ See Newfoundland Power’s 2021 *Electrification, Conservation and Demand Management Application*, Volume 1, Exhibit 2, page 3, Figure 2.

1 Realizing the rate mitigating benefit of EV adoption requires managing EV load during
 2 times of system peak. The Dunsky report estimates that approximately 85% of EV load
 3 can be shifted off-peak through load management.² The 2021 Plan lays the foundation for
 4 effective load management in a manner consistent with the recommendations of the
 5 Dunsky report.

6
 7 Figure 2 shows the rate mitigating benefit of electrification from 2021 to 2034 under the
 8 baseline scenario and with implementation of the 2021 Plan, which includes load
 9 management.³



10 The rate mitigating benefits and consequences of unmanaged charging are not material
 11 over the near term, but are significant over the longer term.

12
 13 On a net present value (“NPV”) basis, the electrification programs outlined in the 2021
 14 Plan will provide additional net revenue of approximately \$34 million by 2034. This
 15 equates to a rate mitigating benefit for customers of 0.5¢/kWh that year.⁴

16
 17 Under the baseline scenario, the unmanaged charging of EVs would increase costs to
 18 customers by approximately \$22 million by 2034.

² Ibid., Volume 2, Schedule C, page 143 of 325.

³ Ibid., Volume 1, Exhibit 2, page 2, Figure 1.

⁴ The customer rate impact of 0.5¢/kWh was determined by dividing the net revenue impact of \$33.9 million in 2034 by the projected Company energy sales, including energy sales from electrification, of 6,527 GWh.

1 **B. Load Management Initiatives**

2
3 The 2021 Plan will ensure options for effective load management are assessed and
4 implemented prior to exposing customers to increased system costs due to unmanaged
5 EV charging.

6
7 To achieve this, the 2021 Plan includes:

- 8
9 (i) **Incentivizing EV chargers capable of load management.** The EV charger
10 incentives under the residential and commercial programs are designed to cover
11 the incremental costs of installing chargers with load management capabilities.⁵
12 As such, only chargers that are capable of load management will qualify for the
13 incentives. This is essential to ensuring that charging infrastructure installed over
14 the 2021 to 2025 timeframe is capable of load management in the future when EV
15 load increases. This approach is consistent with the Dunsky report’s observation
16 that incentives can be used to cover the incremental cost of chargers capable of
17 load management.⁶
- 18
19 (ii) **Piloting options for load management.** The EV Demand Response Pilot
20 Program will allow the Utilities to explore the most effective options to shift EV
21 charging to off-peak periods.⁷ The pilot program will assess options based on
22 customer acceptance and cost effectiveness. This includes technologies such as
23 smart chargers and direct load controllers, and incentives such as a monthly
24 participation credit for customers who shift their charging to off-peak times.
25 Customers who avail of the EV charger incentive will be invited to participate in
26 the EV Demand Response Pilot Program.⁸
- 27
28 (iii) **Assessing options to manage the load of commercial vehicles.** A significant
29 portion of forecast electricity demand associated with EVs is expected to come
30 from commercial vehicles. However, in the early years, the adoption of medium
31 and heavy-duty vehicles is expected to be minimal due to low model availability
32 and higher upfront capital costs.⁹ The Custom Fleet Pilot Program will allow the
33 Utilities to pilot initiatives that will encourage off-peak charging for commercial
34 vehicles. Opportunities for vehicle-to-grid technologies will also be explored.¹⁰
35 The results of this pilot will inform load management programs in the future when
36 the load from commercial vehicles is expected to increase.

37
38 These initiatives will allow the Utilities to implement effective load management
39 initiatives prior to EV adoption driving significant increases in system load. The Utilities

⁵ See response to Request for Information PUB-NP-039.

⁶ See Newfoundland Power’s *2021 Electrification, Conservation and Demand Management Application*, Volume 2, Schedule C, page 138 of 325.

⁷ *Ibid.*, Schedule K, pages 1 and 2

⁸ See response to Request for Information PUB-NP-038.

⁹ See Newfoundland Power’s *2021 Electrification, Conservation and Demand Management Application*, Volume 2, Schedule K, page 1 of 3.

¹⁰ Vehicle-to-grid technologies enable energy to be pushed back to the electricity grid from the battery of an EV.

1 expect that programs will shift exclusively to load management initiatives following
2 2025. For example, beyond 2025 all program costs included in Column B of the NPV
3 analysis relate to managing customer EV load.¹¹

¹¹ See Newfoundland Power's *2021 Electrification, Conservation and Demand Management Application*, Volume 1, Exhibit 2, Appendix A, Column B.