

1 Q. **Tab D; Volume 1: Capital Projects over \$200,000 and less than \$500,000 (Level 2 Chargers for**
2 **Electric Vehicles)**

3 Table 1 on page D-61 provides the forecast costs and benefits of acquiring an electric fleet
4 vehicle versus a comparable internal combustion engine vehicle. The analysis illustrates that
5 after six years the life cycle cost of an electric vehicle is less than that of a comparable internal
6 combustion engine vehicle.

7 Please include an analysis for this overall project that incorporates the costs to purchase and
8 maintain the Level 2 chargers (preferably a net present value analysis). As part of the output of
9 that analysis please include the number of years before the overall project becomes
10 economically viable and the number of electric vehicles that Hydro anticipates to have operating
11 in its fleet at that time.

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14 A. PUB-NLH-020, Attachment 1 includes a ten-year net present value analysis of Newfoundland
15 and Labrador Hydro's ("Hydro") proposed Level 2 Charger Project ("Project"). The analysis
16 assumes the Project is constructed in 2021, Hydro's application for funding is successful, and
17 that battery electric vehicles reach purchase price parity with their gasoline powered
18 counterparts by 2030.

19 The analysis indicates that the project will achieve a positive net present value if Hydro acquires
20 a total of 32 electric vehicles over the ten-year analysis period. Based on the current fleet
21 complement of 270 light-duty vehicles, Hydro can achieve this adoption rate by converting
22 approximately one in nine vehicles to electric. Hydro's analysis assumes an increasing level of
23 electric vehicle adoption over time reflecting increasing levels of experience with electric vehicle
24 fleet usage across differing areas of the province, varying use cases, and forecast increased
25 availability of electric vehicles models over time, including electric pickup trucks.

1 Hydro is in the process of setting corporate targets for the adoption of electric vehicles
2 dependent on the outcome of this project proposal. If the Project is approved and the
3 supporting electric vehicle infrastructure is constructed, Hydro plans to set its electric vehicle
4 adoption target to meet or exceed 32 fleet vehicles by 2031 taking into account changing
5 market conditions and increasing levels of experience with electric fleet vehicles.

| Year | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | Total |
|---|------------------|-----------------|----------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------|
| Level 2 Charger Install | (299,800) | | | | | | | | | | | |
| Forecast Funding | 90,000 | | | | | | | | | | | |
| Charger Operations and Maintenance | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) | (1,800) |
| Electric Vehicle Cost Differential | (25,768) | (22,905) | (20,042) | (25,768) | (21,473) | (17,179) | (12,884) | (8,589) | (4,295) | - | - | - |
| Electric Vehicle Operations and Maintenance Savings | 6,107 | 12,214 | 18,321 | 27,482 | 36,642 | 45,803 | 54,963 | 64,124 | 73,284 | 85,498 | 97,712 | 97,712 |
| Total | (231,261) | (12,491) | (3,521) | (87) | 13,369 | 26,824 | 40,279 | 53,734 | 67,189 | 83,698 | 95,912 | |

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Net Present Value

Weighted Average Cost of Capital 5.65%

Number of Electric Vehicles 2 2 2 3 3 3 3 3 3 3 4 4 32

Notes

1. Charger Operations and Maintenance consists of network fees for smart chargers, estimated at \$100 per charger per year
2. Electric Vehicle Cost Differential is the average price differential as outlined in Table 1 of the project description
3. Electric Vehicle Operations and Maintenance Savings is the average gasoline savings net of electricity costs as outlined in Table 1 of the project description
4. The discount rate used is Hydro's forecast incremental Weighted Average Cost of Capital