Q. Further to PUB-NP-064 please provide the net present value analysis and the estimated rate mitigation benefit for the proposed electrification program, including all components except incentives for EV purchases.

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 2021 Plan seeks to maximize domestic energy usage in a cost-effective manner primarily through increasing the province's adoption of EVs. In the Utilities' experience, promoting the adoption of new technologies requires understanding barriers to customers' adoption of those technologies and strategically addressing those barriers.

Each initiative in the 2021 Plan is designed to address a specific barrier to customers' adoption of EVs. Over the last 4 years, Newfoundland and Labrador residents have consistently indicated the primary barriers to EV adoption are the upfront cost and access to public charging. In 3 of the 4 years, the upfront cost of an EV was the primary barrier identified.[1] For example, in 2020, 32% of residents ranked the upfront cost of an EV as the primary barrier, while 24% of residents ranked availability of public charging as the primary barrier.

The 2021 Plan strategically addresses these barriers through: (i) customer incentive programs for EVs and chargers; and (ii) utility investment in public charging infrastructure and a make-ready model to encourage private sector investment. These initiatives represent the primary levers available to the Utilities to increase EV adoption. These initiatives are designed to be complementary in supporting customers' adoption of EVs.[2] Both initiatives are essential to achieving market transformation within the province's transportation sector.

As outlined in response to Request for Information PUB-NP-064, the interdependent nature of these initiatives limits the Company's ability to calculate the rate mitigation impacts separately for each initiative.

For the purposes of responding to this Request for Information, the Company has completed a *pro forma* net present value ("NPV") analysis based on the findings of the market potential study completed by Dunsky Energy Consulting (the "Study"). The

[1] See Table 2 in response to Request for Information TC-CA-NP-036, which shows the most indicated reason a customer has not purchased an EV over the 2018 to 2021 period.

[2] For example, the Utilities plan to offer an incentive program for residential customers to purchase an EV, as well as an incentive to purchase a smart charger capable of load management. The Utilities intend to communicate with customers about both incentives during their decision-making process, which may promote higher uptake of smart chargers. This is critical as once a customer installs a standard charger, they would be unlikely to subsequently upgrade to a smart charger.

Study found that EV incentives could increase EV load by 16% to 32% in the short-term and by 8% to 9% over the long term.[3]

Table 1 compares the results of the *pro forma* NPV analysis for the requested scenario to the NPV analysis provided with the 2021 Plan, including differences in key metrics.[4]

Table 1:
***Pro Forma* NPV Analysis[5]**
(2034)
(Approximated for the purposes of this Request for Information.)

	Requested Scenario	**2021 Plan**	**Difference**
EV Adoption	119,000 units	131,000 units	(9%)
EV Load	598 GWh	657 GWh	(9%)
Net Revenues	$30.9 million	$ 33.9 million	(9%)
Rate Mitigation Benefit	0.478 ¢/kWh[6]	0.519 ¢/kWh[7]	(8%)

The analysis indicates that the removal of EV incentives from the 2021 Plan could reduce the associated customer rate mitigation benefit by an estimated 8% by 2034.

See Attachment A for the detailed results of the *pro forma* NPV analysis.

[3] See Newfoundland Power's Application, Volume 2, Schedule C, page 139.
[4] The NPV analysis reflects a reduction in annual EV load of 9% throughout the 2021 to 2034 period and the removal of EV incentive program costs over the 2021 to 2025 period.
[5] Newfoundland Power figures only.
[6] $30.9 million 2034 net revenues ÷ 6,468 GWh total projected electricity sales in 2034 = $0.00478/kWh.
[7] $33.9 million 2034 net revenues ÷ 6,527 GWh total projected electricity sales in 2034 = $0.00519/kWh.

***Pro Forma* NPV Analysis**
Requested Scenario

Newfoundland Power Inc.
***Pro Forma* Revenue Requirement Analysis - Requested Scenario**
2021 to 2034
($000s)

	Investment		Pro Forma Revenue Requirement Impacts						
Year	Capital Costs A	Program Costs B	Incremental Revenues C	Incremental System Costs D	Capital Cost Recovery E	Program Cost Recovery F	Net Revenues G	Cumulative NPV H	*Pro Forma* Rate Mitigation Impacts (¢/kWh) I
2021	1,538	1,045	45	30	115	27	(127)	(120)	(0.002)
2022	1,530	2,096	260	168	340	211	(460)	(530)	(0.008)
2023	460	2,117	706	409	477	519	(700)	(1,121)	(0.012)
2024	460	2,516	1,531	871	530	830	(700)	(1,679)	(0.012)
2025	311	1,388	3,116	1,759	570	1,149	(363)	(1,953)	(0.006)
2026	0	1,074	6,751	3,877	571	1,308	994	(1,245)	0.017
2027	0	1,706	11,974	6,892	548	1,438	3,096	841	0.053
2028	0	2,364	18,768	11,074	525	1,657	5,512	4,349	0.093
2029	0	2,980	26,935	16,550	502	1,964	7,919	9,112	0.132
2030	0	3,651	36,742	22,583	480	2,352	11,327	15,552	0.186
2031	0	4,334	48,079	29,564	382	2,826	15,307	23,776	0.248
2032	0	5,061	61,033	37,560	214	3,282	19,978	33,920	0.319
2033	0	5,788	75,512	46,513	107	3,727	25,165	45,997	0.396
2034	0	6,613	91,937	56,673	56	4,266	30,941	60,030	0.478

Notes

A Includes all Newfoundland Power EV charging infrastructure costs as described in *Exhibit 2, EV Charging Network.*

B Includes all program and research costs associated with Newfoundland Power's electrification initiatives, including operation of the Company's EV charging sites except EV incentive costs.

C Projected incremental revenues from additional energy sales as a result of the electrification initiatives set out in the 2021 Plan, excluding those estimated to be related to offering EV incentives. The estimated annual reduction in incremental revenues related to not offering EV incentives is approximately 9%, which is based on the potential long-term impact on EV load from offering EV incentives outlined in the market potential study completed by Dunsky Energy Consulting.

D Projected incremental system costs (energy and capacity costs) as a result of the electrification initiatives set out in the 2021 Plan, excluding those estimated to be related to offering EV incentives.

E Includes forecast depreciation, financing costs and associated income taxes related to the EV charging infrastructure investment. Based on an estimated 10 year service life, the Company's incremental weighted average cost of capital ("WACC") of 5.81% and an income tax rate of 30%.

F Includes forecast amortization, financing costs and associated income taxes related to electrification program costs, excluding EV incentive costs. Based on an estimated amortization period of 10 years (equal to the estimated life of an EV), the Company's incremental WACC of 5.81% and an income tax rate of 30%.

G Calculated as C - D - E - F.

H The net present value ("NPV") as of the end of each period using the Company's incremental WACC of 5.81%.

I The estimated rate mitigation impact is calculated by dividing the annual net revenue amount in Column G by projected annual Company electricity sales in that year, including incremental sales from the initiatives outlined in the 2021 Plan, excluding those estimated to be related to offering EV incentives.