

*Request for Information*

1 **Q. The Electrification Program included in the 2021 Electrification, Conservation and**  
2 **Demand Management Application was presented for the period 2021-2025.**

3  
4 **(a) Significant time has passed since the filing of first Newfoundland Power’s**  
5 **application and then Hydro’s application, which applications have now been**  
6 **joined. Please update PUB-NP-008, PUB-NP-009, PUB-NP-039, PUB-NP-040,**  
7 **PUB-NP-063 and PUB-NP-064, the Net Present Value analysis and any other**  
8 **tables/analysis that may have been impacted as a result of this time passage.**

9  
10 **(b) Are there any changes in the market since the filing of the Applications that**  
11 **would impact the information included in the Applications? For example, the**  
12 **increase of 14.7 cents per kWh included in the Provincial Government’s**  
13 **recently announced rate mitigation plan and whether the amounts of the**  
14 **proposed EV incentives are still appropriate. Please include any market**  
15 **changes in the updates requested above.**

16  
17 *A. This Request for Information relates to the Electrification, Conservation and Demand*  
18 *Management Plan: 2021-2025 (the “2021 Plan”) developed in partnership by*  
19 *Newfoundland Power Inc. (“Newfoundland Power”) and Newfoundland and Labrador*  
20 *Hydro (“Hydro”) (collectively, the “Utilities”) and the related Technical Conference*  
21 *presented by the Utilities on February 1, 2022. Accordingly, the response reflects*  
22 *collaboration between the Utilities.*

23  
24 **(a) There have been 3 factors that have changed since the filing of the Applications**  
25 **that could impact the primary assumptions included the 2021 Plan: (i) an**  
26 **announcement by government of an updated rate mitigation target; (ii) an updated**  
27 **marginal cost forecast provided by Hydro; and (iii) a delay in executing the**  
28 **electrification initiatives included in 2021 Plan.<sup>1</sup>**

29  
30 These factors would have varying impacts on the net present value (“NPV”)   
31 analysis used to assess the customer rate mitigation benefit of electrification   
32 initiatives. The updated marginal cost forecast would also affect the modified   
33 Total Resource Cost (“mTRC”) used to evaluate the cost-effectiveness of   
34 electrification initiatives. For the purposes of this response, these analyses will be   
35 referred to as the “Filed NPV Analysis” and the “Filed mTRC Results.”

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<sup>1</sup> The primary assumptions impacting the cost-effectiveness testing for the electrification initiatives are:   
(i) incremental revenues from the electrification initiatives; (ii) associated incremental system costs; and   
(iii) electrification program costs.

1 Table 1 summarizes the potential impact of these factors on the rate mitigation  
2 benefit associated with the Filed NPV Analysis, and the potential impact on the  
3 Filed mTRC Results.

**Table 1:**  
**Filed NPV Analysis and Filed mTRC Results**  
*Pro Forma Potential Impacts*

<b>Factor</b>	<b>Rate Mitigation Benefit by 2034</b>	<b>mTRC Results</b>
Updated Rate Mitigation Target	+0.1 ¢/kWh	-
Updated Marginal Cost Forecast	+0.5 ¢/kWh	+0.2
Delayed Implementation of 2021 Plan	-0.1 ¢/kWh	-

4 Overall, changes in these factors since the filing of Newfoundland Power’s  
5 Application would not affect the business case for proceeding with electrification  
6 initiatives included in the 2021 Plan. Rather, the updated rate mitigation target  
7 and updated marginal cost forecast would increase the customer rate mitigation  
8 benefit associated with the electrification initiatives.  
9

10 Each of these factors is addressed in further detail below. Attachments A through  
11 G to this response provide updates to the Filed NPV Analysis and Requests for  
12 Information that would be impacted by these factors, including PUB-NP-008,  
13 PUB-NP-009, PUB-NP-031, PUB-NP-039, PUB-NP-063, and PUB-NP-064.  
14 All updates to the Requests for Information have been shaded in grey for ease of  
15 reference.  
16

17 ***i. Updated Rate Mitigation Target***

18  
19 On July 28, 2021, the Provincial Government and Federal Government announced  
20 an agreement-in-principle that would mitigate customer rate impacts associated  
21 with the Muskrat Falls Project.<sup>2</sup> At that time, the mitigated customer rate target  
22 was updated to 14.7 ¢/kWh, or approximately 9% higher than the original target  
23 of 13.5 ¢/kWh.<sup>3</sup>

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<sup>2</sup> On February 14, 2022, both governments signed term sheets associated with federal loan guarantees and capital restructuring of Muskrat Falls Project assets. These actions essentially reaffirmed the updated rate mitigation target announced on July 28, 2021. See the Provincial Government’s media release: *Term Sheets Signed for Third Federal Loan Guarantee and LIL Investment; Moving Towards Finalization of Financial Restructuring Agreements*, dated February 14, 2022.

<sup>3</sup>  $14.7 \div 13.5 - 1 = 0.089$ .

1 The updated rate mitigation target was not used to project incremental revenues in  
2 the Filed NPV Analysis. If actual electricity rates were higher than the level  
3 assumed in the Filed NPV Analysis, the incremental revenues from electrification  
4 and associated rate mitigation benefit would be higher. For example, if the Filed  
5 NPV Analysis was updated to reflect current customer rates and the 9% increase  
6 associated with the updated rate mitigation target, incremental revenues would be  
7 approximately \$6 million higher by 2034.<sup>4</sup> The higher revenues would increase  
8 the estimated customer rate mitigation benefit to approximately 0.6 ¢/kWh by  
9 2034, or about 0.1 ¢/kWh higher than the current estimate.<sup>5</sup>

10  
11 There would be no impact on the Filed mTRC Results as the higher utility  
12 revenues are offset by the higher costs to customers through increased electricity  
13 charges.

14  
15 **ii. Updated Marginal Cost Forecast**

16  
17 During the technical conference, Hydro provided an updated forecast of marginal  
18 costs following commissioning of the Muskrat Falls Project.<sup>6</sup> Over the long-term,  
19 marginal capacity and energy supply costs are forecast to decline compared to the  
20 marginal cost estimates filed with the 2021 Plan.<sup>7</sup> For example, in comparison to  
21 estimates filed with the 2021 Plan: (i) marginal capacity costs are forecast to  
22 decline by an average of approximately 15% to 20% from 2025 to 2034;<sup>8</sup> and  
23 (ii) marginal energy costs are forecast to decline by an average 40% to 50% over  
24 the same period.<sup>9</sup>

25  
26 If actual marginal costs were lower than the levels assumed in the Filed NPV  
27 Analysis, incremental system costs would be lower and the customer rate  
28 mitigation benefits would be higher. For example, if the Filed NPV Analysis was  
29 updated to reflect Hydro's marginal cost update, incremental system costs would  
30 be approximately \$30 million lower by 2034 compared to estimates included in  
31 the Filed NPV Analysis. The lower costs would increase the estimated customer

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<sup>4</sup> Current customer rates effective March 1, 2022 and an assumed 9% customer rate increase associated with Muskrat Falls. Due to the uncertainty associated with the timing of the increase in customer rates associated with Muskrat Falls, the 9% customer rate impact has been split between 2022 and 2023.

<sup>5</sup> The 0.1 ¢/kWh estimated impact provided in this response is lower than the estimated 0.16 ¢/kWh in the response to Request for Information PUB-NP-065 as the 0.1 ¢/kWh estimate reflects a fulsome model revision for the updated customer rate assumptions compared to the illustrative example in the response to Request for Information PUB-NP-065 which provided a simple 10% increase to each year in the NPV analysis.

<sup>6</sup> Hydro provided the marginal cost update in the response to Request for Information TC-IC-NLH-001.

<sup>7</sup> For a copy of the marginal cost projections filed with the 2021 Plan, see Newfoundland Power's Application, Volume 2, Schedule H.

<sup>8</sup> Annual differences for marginal capacity costs between the preliminary update and the estimates used in the 2021 Plan range from an increase of 1% to a decrease of 35% over the 10-year timeframe.

<sup>9</sup> Annual differences for marginal energy costs between the preliminary update and the estimates used in the 2021 Plan range from a decrease of 21% to a decrease of 57% over the 10-year timeframe.

1 rate mitigation benefit to approximately 1.0 ¢/kWh by 2034, or about 0.5 ¢/kWh  
2 higher than the current estimate of 0.5 ¢/kWh by 2034.

3  
4 The Filed mTRC Results for the electrification program portfolio would be 0.2  
5 higher due to the lower system costs.<sup>10</sup>

6  
7 ***iii. Delayed Implementation of 2021 Plan***

8  
9 The electrification initiatives included in the 2021 Plan were scheduled to begin in  
10 2021. The delay in offering electrification initiatives could result in a delay in EV  
11 adoption rates assumed in the 2021 Plan. This could also result in a delay of the  
12 associated customer rate mitigation benefits.

13  
14 For example, if the Filed NPV Analysis was updated to reflect a delay in EV  
15 adoption by 1 year, compared to that assumed in the 2021 Plan, net revenues  
16 would also be delayed by 1 year compared to the net revenue estimates in the  
17 Filed NPV Analysis. In this scenario, net revenues would be approximately  
18 \$6 million lower in 2034.<sup>11</sup> The lower net revenues would decrease the estimated  
19 customer rate mitigation benefit to approximately 0.4 ¢/kWh by 2034, or about  
20 0.1 ¢/kWh lower than the current estimate of 0.5 ¢/kWh by 2034.

21  
22 There would be no significant impact on the Filed mTRC Results due to the  
23 delay.<sup>12</sup>

24  
25 ***Assessment of Other Market Factors***

26  
27 The Utilities assessed changes to other market factors to determine whether there  
28 would be an impact on the primary assumptions underlying the electrification  
29 initiatives included in the 2021 Plan. The assessment determined that changes in  
30 these market factors have not been significant enough to have a substantial impact  
31 on the 2021 Plan. These factors include:

- 32  
33 (i) ***Price of EVs*** – There has been no significant change in the price of EVs.  
34 Expected declines in battery prices at the time of filing the Applications  
35 have been offset by increased inflationary pressures affecting battery  
36 prices. It is estimated that EV price parity with internal combustion

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<sup>10</sup> mTRC results for both the Residential and Commercial EV & Charging Infrastructure Incentive programs increases by 0.2 and the Custom Commercial program increases by 0.1.

<sup>11</sup> This scenario is based on the customer electricity rates and marginal costs assumed in the Filed NPV Analysis. If the customer rate and marginal cost assumptions were updated as discussed, a 1 year delay would result in lower net revenues of approximately \$11 million in 2034. In this scenario, the \$11 million in lower net revenues would decrease the estimated customer rate mitigation benefit by approximately 0.2 ¢/kWh by 2034.

<sup>12</sup> In this scenario, the same level of revenues and costs are assumed to be achieved and incurred, respectively. Minor differences would occur due to the increased electricity rates and reduced marginal costs resulting from the delay.

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1 engine (“ICE”) vehicles may be delayed by up to 2 years due to these  
2 impacts.<sup>13</sup>

3  
4 (ii) **Electricity Consumption of EVs** – There are no known changes to the  
5 electricity consumption of EVs since the filing of the 2021 Plan.

6  
7 (iii) **EV Charging Stations** – The availability of public EV charging  
8 infrastructure remains consistent with the assumptions filed with the 2021  
9 Plan.<sup>14</sup>

10  
11 (iv) **Provincial EV Incentives** – The Provincial Government’s *Electric Vehicle*  
12 *Adoption Accelerator* program is designed to be complementary to the  
13 2021 Plan and, when combined, provincial and utility incentive amounts  
14 are comparable to rebate amounts offered elsewhere in Canada.<sup>15</sup> An  
15 update on the Provincial Government’s program, as addressed in response  
16 to Request for Information PUB-NP-040, is provided as Attachment H to  
17 this response.

18  
19 (v) **Fuel Prices** – Higher fuel prices since the filing of the Application would  
20 improve the business case for EV adoption. However, these prices are  
21 subject to considerable volatility at the present time.

22  
23 Based on this assessment, there are no additional updates required to the Filed  
24 NPV Analysis or the Filed mTRC Results to reflect changes in these market  
25 factors. However, the Utilities note that the expected delay in EVs achieving cost  
26 parity with ICE vehicles was accounted for in the assessment of the delayed  
27 implementation of the 2021 Plan, as described above. The delay in EVs  
28 achieving price parity with ICE vehicles would support extending planned EV  
29 incentive programs into 2026, as these programs are designed to bridge the gap to  
30 vehicle cost parity.<sup>16</sup> Going forward, any changes in these market factors would  
31 be considered regularly through annual calculations of the mTRC test, which  
32 would be reported to the Board.

33  
34 (b) See part (a) to this response to Request for Information.

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<sup>13</sup> See Table 1 in Attachment D to this response to Request for Information for an updated comparison of the forecast average cost of an EV compared to the average cost of an ICE vehicle from 2022 to 2027.

<sup>14</sup> In March 2022, the Provincial Government announced a commitment to invest in EV charging infrastructure. Details of the Provincial Government’s planned investment are not yet available, but is intended to complement the Utilities’ 2021 Plan. The Utilities will continue working with the Provincial Government to ensure the planned investment maximizes potential benefits for customers. See the Provincial Government’s news release, *Government Announces Five-point Plan to Help Newfoundlanders and Labradorians with the High Cost of Living*, dated March 15, 2022.

<sup>15</sup> See part (b) to response to Request for Information TC-PUB-NP-003.

<sup>16</sup> For example, Attachment A to this response provides an update to response to Request for Information PUB-NP-008. The update reflects a shift in program costs from 2021 to 2025, as originally planned, to 2022 to 2026 based upon the delayed implementation.

**Update to Request for Information PUB-NP-008**

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- 1 **Q: Table 5, page 16 of 25 indicates electrification program costs for 2021 to 2025.**  
2 **Please provide a breakdown by dollar value for each program, including the**  
3 **estimated dollar value of rebates forecast for each program, for each of the years.**  
4  
5 A. Table 1 provides an annual breakdown by dollar value for each electrification program,  
6 including the estimated dollar value of rebates, over the period 2022 to 2026.

<b>Table 1:</b> <b>Electrification Program Costs by Year</b> <b>2022 to 2026</b> <b>(\$000s)</b>							
<b>Program</b>	<b>Costs</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>Total</b>
Residential EV & Charging Infrastructure Program	Rebates	138	660	1,537	1,643	2,570	6,548
	Total Costs	515	1,067	1,896	2,061	2,964	8,503
Commercial EV & Charging Infrastructure Program	Rebates	26	130	277	347	608	1,388
	Total Costs	263	391	486	591	830	2,561
Custom Electrification Program	Rebates	10	61	81	101	131	384
	Total Costs	174	304	249	360	351	1,438

**Update to Request for Information PUB-NP-009**

1 **Q: On page 1 of 25, line 9, Newfoundland Power states that the NPV analysis confirms**  
2 **that the planned electrification programs will provide rate mitigating benefits to**  
3 **customers over the long term. Please expand on this statement, and if possible**  
4 **provide the impact on rates in the short term, particularly for the period 2021 and**  
5 **2025.**

6  
7 A: Newfoundland Power assessed the rate mitigating benefit of its customer electrification  
8 initiatives through a net present value (“NPV”) analysis. The NPV analysis assessed the  
9 net revenue impact of increased energy sales through customer electrification to 2034.<sup>1</sup>  
10 The net revenue impact was then divided by projected Company energy sales, including  
11 energy sales from electrification, to determine an indicative customer rate impact.

12  
13 Table 1 provides the *pro forma* annual net revenues and customer rate impacts of  
14 Newfoundland Power’s customer electrification initiatives over the period 2021 to 2034.

**Table 1:**  
**Newfoundland Power**  
***Pro Forma* Net Revenues and Customer Rate Impacts**  
**2021 to 2034**

<b>Year</b>	<b>Net Revenues (\$000s)</b>	<b>Rate Benefit (¢/kWh)</b>
2021	(115)	(0.002)
2022	(371)	(0.006)
2023	(692)	(0.012)
2024	(934)	(0.016)
2025	(905)	(0.016)
2026	(298)	(0.005)
2027	1,906	0.033
2028	5,700	0.097
2029	10,222	0.171
2030	15,965	0.264
2031	23,405	0.382
2032	31,540	0.508
2033	45,695	0.724
2034	58,769	0.915

15 The rate mitigating benefit of customer electrification initiatives will be realized over the  
16 longer term, primarily through transportation electrification.

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<sup>1</sup> The NPV analysis included program costs and capital investments in infrastructure. Net revenue was calculated as (i) the incremental revenue from increased electricity sales through customer electrification; less (ii) incremental system costs and the recovery of capital, program and research costs related to customer electrification. For a copy of the original NPV analysis, see Newfoundland Power’s Application, Volume 1, Exhibit 2, Appendix A.

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1 Over the short term, utility intervention is required to address barriers to electrification.  
2 Utility investment in fast charging infrastructure is required to address barriers associated  
3 with electric vehicle (“EV”) range anxiety. Customer incentives are required to address  
4 up-front cost barriers until EVs achieve price parity with gasoline-powered vehicles.<sup>2</sup>  
5 Initiatives are also required to educate customers on the benefits of EVs.

6  
7 Addressing these barriers over the short term will accelerate customers’ adoption of EVs  
8 over the longer term.<sup>3</sup>  
9

10 Newfoundland Power’s NPV analysis shows that customer electrification initiatives will  
11 provide additional net revenue of approximately \$190 million over the period  
12 2021 to 2034. Increased net revenue through electrification will provide a rate mitigating  
13 benefit for customers of approximately 0.9 ¢/kWh by 2034.<sup>4</sup>  
14

15 Additionally, the market potential study completed by Dunskey Energy Consulting shows  
16 that system costs will increase without utility intervention.<sup>5</sup> This is largely due to an  
17 increase in capacity-related system costs resulting from the unmanaged charging of EVs.  
18 Increased system costs would put upwards pressure on customer rates and would be  
19 inconsistent with provincial rate mitigation objectives.

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<sup>2</sup> See Attachment D to this response to Request for Information.

<sup>3</sup> Without utility intervention, there are forecast to be approximately 41,000 EVs in Newfoundland and Labrador by 2034. This is forecast to increase to approximately 140,000 EVs by 2034 assuming identified barriers are effectively addressed by the Utilities.

<sup>4</sup> The customer rate impact of 0.9 cent/kWh was determined by dividing the net revenue impact of 58.8 million in 2034 by the projected Company energy sales, including energy sales from electrification, of 6,422 GWh.

<sup>5</sup> See Newfoundland Power’s Application, Volume 1, Exhibit 2, page 2, Figure 1.

**Update to Request for Information PUB-NP-031**

1 **Q: Schedule F – 2021 Plan Program Descriptions**

2  
3 **Please provide the detailed calculations of the mTRC test for each of the**  
4 **electrification programs described in Schedule F, including a description of the non-**  
5 **electrical benefits incorporated in the calculation.**

6  
7 A: The modified Total Resource Cost Test (“mTRC”) is a ratio of the net present value  
8 (“NPV”) of electrification program benefits to program costs. The NPV is determined  
9 using a 6.0% discount rate for all programs.

10  
11 For the electrification programs outlined in Schedule F, the benefits included in the  
12 mTRC are the fuel and maintenance savings customers experience from replacing fossil-  
13 fuelled technologies with equivalent electric technologies that are more efficient. These  
14 savings are the non-electrical benefits incorporated in the calculation.

15  
16 The program costs included in the mTRC included electricity supply costs, incremental  
17 equipment purchase costs and program administration costs.

18  
19 Benefits and costs are captured annually as appropriate throughout the expected life of  
20 the equipment. For example an electric vehicle is expected to last for 10 years. The  
21 customer will incur benefits of fuel and maintenance savings over 10 years; however, the  
22 program administration costs will be incurred in the year of participation.

23  
24 Tables 1, 2 and 3 that follow provide the updated mTRC calculations for each of the  
25 electrification programs described in Schedule F.

1 Table 1 provides the calculation of the mTRC for the Residential EV and Charging  
2 Infrastructure program.

<b>Table 1: Residential EV and Charging Infrastructure Program mTRC Analysis</b>								
Year	Cumulative Units (EVs & Chargers)	Maintenance Savings	Fuel Savings	Electricity Supply Costs	Incremental Equipment Costs	Program Administration Costs	Total Benefits	Total Costs
	A	B	C	D	E	F	G	H
(\$000s)								
1	90	7	159	19	933	378	166	1,330
2	495	42	880	96	4,161	414	922	4,671
3	1,436	121	2,431	276	9,320	375	2,552	9,971
4	3,119	249	5,274	501	6,474	434	5,523	7,409
5	5,738	453	9,817	857	10,098	420	10,270	11,375
6	5,738	462	10,013	872			10,475	872
7	5,738	471	10,213	891			10,684	891
8	5,738	481	10,417	948			10,898	948
9	5,738	490	10,626	961			11,116	961
10	5,738	500	10,838	945			11,338	945
11	5,648	501	10,861	947			11,362	947
12	5,243	470	10,204	733			10,674	733
13	4,302	384	8,538	577			8,922	577
14	2,619	238	5,303	360			5,541	360

3 Column G (“Total Benefits”) is the sum of column B (“Maintenance Savings”) and  
4 column C (“Fuel Savings”).

5  
6 Column H (“Total Costs”) is the sum of column D (“Electricity Supply Costs”), column  
7 E (“Incremental Equipment Costs”) and column F (“Program Administration Costs”).

8  
9 
$$\text{mTRC} = \text{NPV Column G} / \text{NPV Column H}$$
  
10 
$$= \$67,330,993 / \$32,342,794$$
  
11 
$$= 2.1$$

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1 Table 2 provides the calculation of the mTRC for the Commercial EV and Charging  
2 Infrastructure program.

<b>Table 2: Commercial EV and Charging Infrastructure Program mTRC Analysis</b>								
<b>Year</b>	<b>Cumulative Units (EVs &amp; Chargers)</b>	<b>Maintenance Savings</b>	<b>Fuel Savings</b>	<b>Electricity Supply Costs</b>	<b>Incremental Equipment Costs</b>	<b>Program Administration Costs</b>	<b>Total Benefits</b>	<b>Total Costs</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
<b>(\$000s)</b>								
<b>1</b>	16	1	35	5	160	240	36	405
<b>2</b>	97	5	213	28	805	263	218	1,096
<b>3</b>	266	13	594	80	1,687	212	607	1,979
<b>4</b>	620	31	1,416	152	1,299	248	1,447	1,699
<b>5</b>	1,242	63	2,889	283	2,290	229	2,952	2,802
<b>6</b>	1,242	64	2,946	290			3,010	290
<b>7</b>	1,242	65	3,005	298			3,070	298
<b>8</b>	1,242	67	3,066	318			3,133	318
<b>9</b>	1,242	68	3,127	325			3,195	325
<b>10</b>	1,242	69	3,189	326			3,258	326
<b>11</b>	1,226	70	3,211	332			3,281	332
<b>12</b>	1,146	66	3,058	248			3,124	248
<b>13</b>	977	58	2,661	206			2,719	206
<b>14</b>	622	37	1,726	135			1,763	135

3 Column G (“Total Benefits”) is the sum of column B (“Maintenance Savings”) and  
4 column C (“Fuel Savings”).  
5

6 Column H (“Total Costs”) is the sum of column D (“Electricity Supply Costs”), column  
7 E (“Incremental Equipment Costs”) and column F (“Program Administration Costs”).  
8

9 mTRC = NPV Column G / NPV Column H  
10 = \$19,264,882 / \$7,890,209  
11 = 2.4

1 Table 3 provides the calculation of the mTRC for the Custom Electrification program.

**Table 3:  
 Custom Electrification Program mTRC Analysis**

Year	Cumulative Units	Maintenance Savings	Fuel Savings	Electricity Supply Costs	Incremental Equipment Costs	Program Administration Costs	Total Benefits	Total Costs
	A	B	C	D	E	F	G	H
(\$000s)								
1	5	8	32	5	50	165	40	220
2	35	55	224	34	300	244	279	578
3	75	121	486	75	400	169	607	644
4	125	205	819	103	500	260	1,024	863
5	190	318	1,260	145	650	221	1,578	1,016
6	190	324	1,275	148			1,599	148
7	185	322	1,256	148			1,578	148
8	155	275	1,065	132			1,340	132
9	115	208	800	100			1,008	100
10	65	120	457	56			577	56
11	0							
12	0							
13	0							
14	0							

2 Column G (“Total Benefits”) is the sum of column B (“Maintenance Savings”) and  
 3 column C (“Fuel Savings”).  
 4

5 Column H (“Total Costs”) is the sum of column D (“Electricity Supply Costs”), column  
 6 E (“Incremental Equipment Costs”) and column F (“Program Administration Costs”).  
 7

8 mTRC = NPV Column G / NPV Column H  
 9 = \$6,720,365 / \$3,082,048  
 10 = 2.2

**Update to Request for Information PUB-NP-039**

1 **Q: Was any analysis conducted as to the optimal amount of the utility EV and charging**  
2 **infrastructure incentives in terms of how effective varying amounts of incentives**  
3 **would be in removing barriers and accelerating EV adoption over the short and**  
4 **long term?**

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 The EV and charging infrastructure incentives included in the 2021 Plan were determined  
12 via a process consistent with that used by the Utilities for conservation and demand  
13 management (“CDM”) programs.<sup>1</sup> The process for establishing optimal incentive  
14 amounts includes: (i) determining whether an incentive is required to address barriers to  
15 customers’ adoption of a technology; (ii) determining the initial incentive amount based  
16 on market factors, industry practice and utility objectives; and (iii) evaluating changes in  
17 incentive amounts over time based on program performance, market factors and industry  
18 trends.

19  
20 *i. Determining Requirements for Incentives*

21  
22 A 2019 survey completed by MQO Research determined that the cost of an EV was a  
23 primary barrier to EV adoption among residents of Newfoundland and Labrador.<sup>2</sup>

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<sup>1</sup> Customer incentives are the foundation of CDM programming. For example, over 3 million at-the-cash rebates and over 60,000 on-bill rebates for energy-efficient technologies have been provided to Newfoundland Power’s customers since 2009. These rebates have resulted in electricity bill savings of approximately \$118 million and reduced system costs of approximately \$137 million.

<sup>2</sup> The primary barriers to EV adoption reported by Newfoundland and Labrador residents were vehicle cost and access to charging and concerns regarding reliability of range.

1 Table 1 provides the forecast average cost of an EV compared to the average cost of an  
2 internal combustion engine (“ICE”) vehicle from 2022 to 2027.<sup>3</sup>

**Table 1:  
Incremental Cost of an EV  
2022 to 2027 Forecast  
(\$000s)**

	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
EV	42	38	34	31	28	25
ICE	22	23	23	24	24	25
<b>Difference</b>	<b>20</b>	<b>15</b>	<b>11</b>	<b>7</b>	<b>4</b>	<b>0</b>

3 The upfront cost to purchase an EV is currently \$20,000 higher than the cost of  
4 purchasing an ICE. A \$5,000 Federal Government rebate lowers this cost differential.  
5

6 In addition to the cost of the EV, most customers would also be required to install a Level  
7 2 charger to charge their EV at home or at their business.<sup>4</sup> For a residential customer, the  
8 additional cost of an average Level 2 charger with no networking capabilities is  
9 approximately \$500.<sup>5</sup> The average price for a network capable EV charger is  
10 approximately \$1,000.<sup>6</sup> Commercial Level 2 EV charging infrastructure is generally  
11 more expensive than residential Level 2 charging equipment due to the features and  
12 structure of the charger.<sup>7</sup>  
13

14 In the Utilities’ experience, incentives are effective at increasing customers’ adoption of  
15 new technologies in the province. The 2020-2034 Potential Study (the “Study”) by  
16 Dunsy Energy Consulting provides that EV incentives could increase EV load by 16%  
17 to 32% over the short-term, until cost parity is achieved with ICE vehicles.<sup>8</sup> In addition,

---

<sup>3</sup> EV costs are based on a forecast for battery costs. Forecast changes in ICE costs over the period are inflation related. According to Bloomberg, inflationary pressures on EV battery prices could mean that price parity could be delayed by two years. Price parity was originally projected for 2025. <https://about.bnef.com/blog/battery-pack-prices-fall-to-an-average-of-132-kwh-but-rising-commodity-prices-start-to-bite/>.

<sup>4</sup> Level 2 chargers significantly reduce the time to charge an EV. Using a typical home socket (i.e. Level 1), the time to fully charge an EV could range from 9 to 50 hours. Using a Level 2 charger would reduce the time to fully charge to 2 to 9 hours. A Level 2 charger requires a 240 V service.

<sup>5</sup> A non-networked charger does not have the capability to connect to the internet or cellular network. As a result, it simply provides the function of supplying electricity to a vehicle. The average cost excludes installation costs.

<sup>6</sup> A networked charger has the capability to connect to the internet or cellular network. Networked chargers have the ability to collect usage data, monitor for problems, provide peak load management or charge users a fee for charging. The average cost excludes installation costs.

<sup>7</sup> See response to Request for Information PUB-NP-041 for differences in installation costs.

<sup>8</sup> See Newfoundland Power’s Application, Volume 2, Schedule C, page 139.

1 the installation of network capable chargers is paramount for future customer programs to  
2 incentivize off-peak charging.<sup>9</sup>

3  
4 Based on these factors, the Utilities determined that EV and charger incentives would  
5 address a primary barrier to customers' adoption of EVs and support future load  
6 management requirements.

7  
8 **ii. Determining Incentive Amounts**

9  
10 In determining EV and charging infrastructure incentive amounts for the initial program  
11 offering, the Utilities considered current market factors, industry practice and 2021 Plan  
12 objectives.

13  
14 Currently, a financial incentive would work in conjunction with the federal incentive to  
15 reduce the upfront cost of an EV for customers. This was taken into consideration by the  
16 Utilities in determining initial incentive amounts.

17  
18 Table 2 provides the net benefits a customer could experience when purchasing an EV at  
19 a range of incentive levels when used together with the \$5,000 federal incentive.<sup>10</sup>

**Table 2:**  
**Customer Net Benefit of EV Purchase**  
**(Net Present Values)**

<b>Utility Incentive Amount</b>	<b>\$0</b>	<b>\$2,500</b>	<b>\$5,000</b>	<b>\$8,000</b>
Reduction in Incremental Cost <sup>11</sup>	25%	40%	50%	70%
Net Customer Benefit <sup>12</sup>	\$1,800	\$4,000	\$6,000	\$9,000

20 The federal incentive reduces the incremental cost to purchase an EV by 25%, resulting  
21 in a net customer benefit of \$1,800 over the life of a vehicle. Incentive amounts ranging  
22 as high as \$8,000 could reduce the incremental cost of purchasing an EV by up to 70%,  
23 resulting in a net customer benefit of up to \$9,000 over the life of a vehicle.

24  
25 Given the wide range of potential incentive amounts, the Utilities considered industry  
26 trends in determining the appropriate incentive amount.

---

<sup>9</sup> See response to Request for Information PUB-NP-037 for 2021 Plan initiatives that will inform the Utilities' approach to effective peak load management.

<sup>10</sup> The costs include the incremental vehicle purchase cost and the cost of electricity over the expected life of the vehicle. Customer benefits included in the analysis are the takeCHARGE incentive, Federal incentive and fuel and maintenance savings over the life of the technology.

<sup>11</sup> Includes the federal rebate of \$5,000.

<sup>12</sup> Approximate net present value ("NPV") of the related costs and benefits of owning an EV. Includes the federal rebate of \$5,000.

1 Table 3 provides EV incentive amounts provided in other Canadian jurisdictions.

**Table 3:**  
**EV Incentives by Jurisdiction<sup>13</sup>**

<b>Province</b>	<b>EV</b>
British Columbia	\$3,000
Quebec	\$8,000
Nova Scotia	\$3,000
Prince Edward Island	\$5,000
Northwest Territories	\$5,000
New Brunswick	\$5,000
Yukon	\$5,000
Newfoundland and Labrador <sup>14</sup>	\$2,500

2 Given the incentive levels in other provinces, a minimum incentive of \$2,500 for EVs  
3 was determined to be appropriate.<sup>15</sup> This incentive amount, in combination with the  
4 federal incentive would reduce the upfront cost of purchasing an EV by 40% and provide  
5 a net customer benefit of \$4,000 over the life of the vehicle.

6  
7 The Utilities then assessed whether a higher incentive amount would be beneficial based  
8 on the objective of the 2021 Plan. The objective of the 2021 Plan is to increase energy  
9 sales through EV adoption in order to support the provincial policy goal of customer rate  
10 mitigation.

11  
12 An incentive amount of \$2,500 would increase energy sales from EV adoption which, in  
13 turn, would increase net revenues by approximately \$3 million in 2034.<sup>16</sup> While higher  
14 incentive amounts could increase EV adoption further, net revenues per EV would  
15 diminish. This demonstrated the diminishing contribution of higher incentive amounts  
16 towards the policy goal of customer rate mitigation.<sup>17</sup>

---

<sup>13</sup> Table 3 has been updated to include jurisdictions that were not offering EV incentives when PUB-NP-039 was originally filed.

<sup>14</sup> See Attachment H of response to Request for Information TC-PUB-NP-005 for an update on the Newfoundland and Labrador EV incentive.

<sup>15</sup> Similarly, a minimum incentive of \$1,000 for plug-in hybrid EVs (“PHEV”) is appropriate given incentives provided in other jurisdictions range from \$500 to \$8,000. Further, see part (b) in the response to Request for Information TC-PUB-NP-003 for a discussion on the appropriateness of utility EV incentives with respect to federal and provincial EV incentive offerings.

<sup>16</sup> See Table 1 in the response to Request for Information TC-PUB-NP-001.

<sup>17</sup> The net benefit per EV to rate mitigation at an incentive level of \$2,500 is approximately \$1,500 over the life of the EV. Any dollar increase in the incentive amount would result in a dollar reduction in the per EV rate mitigation benefit of \$1,500.

1 The Utilities therefore determined that \$2,500 per EV was appropriate.

2  
3 The charger incentive amount of \$500 was set to offset the incremental cost of a network  
4 capable charger versus a non-network capable charger.<sup>18</sup> The \$500 residential EV  
5 charger incentive is also consistent with incentive amounts in other provinces.<sup>19</sup>

6  
7 Commercial Level 2 EV charging infrastructure is generally more expensive than  
8 residential Level 2 charging equipment due to the features and structure of the charger.<sup>20</sup>  
9 The Utilities considered commercial charger infrastructure amounts offered in other  
10 provinces.<sup>21</sup> An incentive amount of 50% of the purchase and installations costs, up to a  
11 maximum of \$3,000, was set based on these considerations.

12  
13 **iii. Evaluating Incentive Amounts**

14  
15 The EV and infrastructure incentive programs will be monitored for participation levels  
16 and cost effectiveness on an annual basis, including changes in market factors and  
17 industry trends. A formal evaluation of the program will be conducted by a third party  
18 following the first year of operation. Similar to the Company's CDM programs, changes  
19 to incentive amounts will be implemented as required.

20  
21 For example, the ENERGY STAR Window Rebate Program was offered over the 5-year  
22 period 2009 to 2014 to lower the incremental cost of purchasing ENERGY STAR rated  
23 windows.<sup>22</sup> The program ended following an evaluation of retailer/contractor feedback  
24 and market data that determined ENERGY STAR windows were becoming the industry  
25 standard. Incentives were therefore no longer required to influence the market.<sup>23</sup>

26  
27 EV incentive amounts included in the 2021 Plan are expected to change over time as EVs  
28 approach cost parity with ICE vehicles. After 2023, the incentive for an EV is forecast to  
29 be reduced by \$1,000.<sup>24</sup> Similar to CDM programs, any changes will be informed by  
30 program evaluation and market research.

---

<sup>18</sup> The average cost of a network capable charger of \$1,000, less the cost of a non-network capable charger of \$500.

<sup>19</sup> For example, Quebec provides a rebate of up to \$600 and British Columbia provides a rebate up to \$700 towards the cost of eligible charging equipment and installation. Yukon provides a rebate of \$750 on eligible charging equipment and installation when installed in a private residence (up to 50% of purchase and installation costs).

<sup>20</sup> See response to Request for Information PUB-NP-041 for differences in residential and commercial installation costs.

<sup>21</sup> For example, Quebec provides a rebate up to \$5,000 of the cost of eligible charging equipment and installation. British Columbia provides rebates of \$4,000 and \$2,500, respectively on eligible charging equipment and installation (up to 50% of purchase and installation costs). Yukon provides a rebate of \$4,000 on eligible charging equipment and installation (up to 50% of purchase and installation costs).

<sup>22</sup> At the time, the incentive amount of \$2 per square foot was informed by similar rebates offered in other provinces.

<sup>23</sup> Customers continue to benefit from the customer uptake of that program over that 5-year period. For example, lower system costs as a result of the program were estimated to be \$20 million over the 2009 to 2020 period.

<sup>24</sup> Similarly, the incentive for a PHEV is forecast to be reduced by \$500 before ending by 2025.

**Update to Request for Information PUB-NP-063**

*Request for Information*

- 1 **Q: Please provide a detailed breakdown of the Newfoundland Power costs estimated to**  
 2 **be included in the deferral account in the period 2021 to 2025 setting out the costs**  
 3 **separately for all aspects of the proposals, including each of the programs, customer**  
 4 **education and research., the pilot programs, and the costs associated with the DCFC**  
 5 **and Level 2 charging stations.**  
 6  
 7 A: Table 1 provides a breakdown of costs forecast to be charged to Newfoundland Power’s  
 8 proposed Electrification Cost Deferral Account over the period 2022 to 2026.<sup>1</sup>

**Table 1:**  
**Electrification Deferral Account Costs – Program Costs**  
**2022F to 2026F**  
**(\$000s)**

Category	2022F	2023F	2024F	2025F	2026F	Total
<b>Infrastructure and Programs</b>						
Electric Vehicle Charging Network	219	238	239	248	253	1,197
Make-Ready	29	70	124	181	237	641
Residential EV & Charging Infrastructure Program	446	978	1,769	1,921	2,776	7,890
Commercial EV & Charging Infrastructure Program	238	361	458	563	802	2,422
Custom Electrification Program	149	273	221	333	322	1,298
<b>Sub-total</b>	<b>1,081</b>	<b>1,920</b>	<b>2,811</b>	<b>3,246</b>	<b>4,390</b>	<b>13,448</b>
<b>Research</b>						
Custom Fleet Pilot Program	295	605	857	1,037	-	2,794
EV Demand Response Pilot Program	508	277	220	-	-	1,005
<b>Sub-total</b>	<b>803</b>	<b>882</b>	<b>1,077</b>	<b>1,037</b>	<b>-</b>	<b>3,799</b>
<b>Total</b>	<b>1,884</b>	<b>2,802</b>	<b>3,888</b>	<b>4,283</b>	<b>4,390</b>	<b>17,247</b>

<sup>1</sup> Program costs for the 2021 Plan have not changed, but are shaded to show the shift in the years these costs will now be incurred. The overall costs remain the same, with the exception of the inclusion of operating costs related to the Electric Vehicle Charging Network in 2026.

*Request for Information*

1 Table 2 provides a breakdown of capital costs related to Newfoundland Power’s  
 2 investment in the EV Charging Network. Capital costs are approved by the Board to be  
 3 recovered through the deferral account.<sup>2</sup>

**Table 2:**  
**Electrification Deferral Account Costs – Capital Costs**  
**2021 to 2025F**  
**(\$000s)**

<b>Category</b>	<b>2021</b>	<b>2022F</b>	<b>2023F</b>	<b>2024F</b>	<b>2025F</b>	<b>Total</b>
EV Charging Network	1,538	1,530	460	460	311	4,299

4 General costs related to the delivery of customer electrification programs are expensed as  
 5 incurred.

6  
 7 Table 3 provides a breakdown of general electrification costs related to customer  
 8 education and support and the cost of planning and research.<sup>3</sup>

**Table 3:**  
**Electrification General Costs**  
**2022F to 2026F<sup>4</sup>**  
**(\$000s)**

<b>Category</b>	<b>2022F</b>	<b>2023F</b>	<b>2024F</b>	<b>2025F</b>	<b>2026F</b>	<b>Total</b>
General Education & Support	173	168	180	199	203	923
Planning & Research	37	19	19	20	20	115
<b>Total</b>	<b>210</b>	<b>187</b>	<b>199</b>	<b>219</b>	<b>223</b>	<b>1,038</b>

<sup>2</sup> See Order No. P.U. 03 (2022).

<sup>3</sup> Planning and research costs that are less than \$100,000 per project are expensed as incurred. See Newfoundland Power’s Application, Volume 1, Exhibit 1.

<sup>4</sup> Electrification general costs in 2021 were approximately \$75,000. General costs for the 2021 Plan have not changed with the exception of the inclusion of general costs for the year 2026.

**Update to Request for Information PUB-NP-064**

- 1 **Q: Provide a breakdown of the net present value and the estimated rate mitigation**  
2 **benefits for the electrification proposals separately for the commercial EV and**  
3 **charging infrastructure incentives, the residential EV and charging infrastructure**  
4 **incentives, the Custom Electrification Program incentives and the DCFC and Level**  
5 **2 chargers.**  
6
- 7 A: The electrification initiatives, and associated incremental sales estimates, set out in the  
8 *Electrification, Conservation and Demand Management Plan: 2021-2025* are  
9 interdependent. For example, residential electric vehicle (“EV”) purchase incentives will  
10 not be effective without sufficient public charging infrastructure in place to remove the  
11 barrier of range anxiety and charger accessibility. Therefore, the Company cannot  
12 provide rate mitigation impacts separately for EV charging infrastructure.  
13
- 14 For the purpose of this analysis, costs associated with EV charging infrastructure, the  
15 make-ready model, pilot initiatives and deferred planning costs are included with the  
16 Residential EV & Charging Infrastructure Program.  
17
- 18 Tables 1 and 2 outline the *pro forma* revenue requirement analysis and rate mitigation  
19 impacts of the Residential EV & Charging Infrastructure Program.  
20
- 21 Tables 3 and 4 outline the *pro forma* revenue requirement analysis and rate mitigation  
22 impacts of the Commercial EV & Charging Infrastructure Program.  
23
- 24 Tables 5 and 6 outline the *pro forma* revenue requirement analysis and rate mitigation  
25 impacts of the Custom Electrification Program.

1 Table 1 outlines the *pro forma* revenue requirement for Newfoundland Power’s  
2 Residential EV & Charging Infrastructure Program.

**Table 1:**  
**Newfoundland Power Inc.**  
***Pro Forma* Revenue Requirement Analysis**  
**Residential EV & Charging Infrastructure with Utility Owned Charging Network**  
**2021 to 2034**  
**(\$000s)**

Year	Investment		Pro Forma Revenue Requirement Impacts					
	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
2021	1,538	0	0	0	115	0	(115)	(109)
2022	1,530	1,497	32	19	340	39	(366)	(436)
2023	460	2,168	192	94	477	280	(659)	(992)
2024	460	3,209	563	270	530	624	(861)	(1,679)
2025	311	3,387	1,258	494	570	1,089	(895)	(2,354)
2026	0	4,390	2,374	849	571	1,586	(632)	(2,804)
2027	0	1,028	5,456	1,919	548	2,101	888	(2,207)
2028	0	1,622	9,774	3,413	525	2,194	3,642	112
2029	0	2,234	15,235	5,512	502	2,371	6,850	4,232
2030	0	2,805	21,580	7,710	480	2,630	10,761	10,349
2031	0	3,417	28,852	9,889	382	2,963	15,618	18,740
2032	0	4,051	37,009	12,592	214	3,374	20,829	29,317
2033	0	4,721	45,944	12,992	107	3,717	29,128	43,296
2034	0	5,388	55,484	14,691	56	4,082	36,655	59,921

**Notes**

- 3 A Includes all Newfoundland Power EV charging infrastructure costs as described in *Exhibit 2, EV Charging Network*.  
4 B Includes all Electrification Program costs associated with Newfoundland Power’s residential customers beginning in  
5 2022 including costs to operate the Company’s EV charging sites, Make-Ready Program, Pilot initiatives and  
6 Deferred Planning costs.  
7 C Projected incremental revenues from additional energy sales as a result of the initiatives set out in the 2021 Plan. The  
8 revenue figures are based on a change from the customer rates approved by the Board in Order No. P.U. 3 (2022)  
9 Amended, a *pro forma* 9% customer rate increase split between 2022 and 2023 to reflect a mitigated rate increase  
10 associated with Muskrat Falls and annual increases in electricity rates of 2.25%.  
11 D Projected incremental system costs (energy and capacity costs) as a result of the initiatives set out in the  
12 Electrification Plan. The system cost figures primarily reflect the marginal cost information received from  
13 Newfoundland and Labrador Hydro in January 2022.  
14 E Includes forecast depreciation, financing costs and associated income taxes related to the EV charging infrastructure  
15 investment. Based on an estimated 10 year service life, the Company’s incremental weighted average cost of capital  
16 (“WACC”) of 5.81% and an income tax rate of 30%.  
17 F Includes forecast amortization, financing costs and associated income taxes related to Electrification Program costs.  
18 Based on an estimated amortization period of 10 years (equal to the estimated life of an EV), the Company’s  
19 incremental WACC of 5.81% and an income tax rate of 30%.  
20 G Calculated as C - D - E - F.  
21 H The net present value (“NPV”) as of the end of each period using the Company’s incremental WACC of 5.81%.

1 Table 2 provides *pro forma* annual rate mitigating impacts of Newfoundland Power's  
2 Residential EV & Charging Infrastructure Program.

**Table 2:**  
***Pro Forma* Rate Mitigation Impact Analysis**  
**Residential EV & Charging Infrastructure**  
**2021 to 2034**  
**(¢/kWh)**

<b>Year</b>	<b>Rate Mitigation Impact</b>
2021	(0.002)
2022	(0.006)
2023	(0.011)
2024	(0.015)
2025	(0.016)
2026	(0.011)
2027	0.015
2028	0.062
2029	0.116
2030	0.181
2031	0.260
2032	0.343
2033	0.476
2034	0.593

*Request for Information*

1 Table 3 outlines the *pro forma* revenue requirement for Newfoundland Power’s  
2 Commercial EV & Charging Infrastructure Program.

**Table 3:**  
**Newfoundland Power Inc.**  
***Pro Forma* Revenue Requirement Analysis**  
**Commercial EV & Charging Infrastructure**  
**2021 to 2034**  
**(\$000s)**

Year	Investment		Pro Forma Revenue Requirement Impacts					
	Capital Costs	Program Costs	Incremental Revenues	Incremental System Costs	Capital Cost Recovery	Program Cost Recovery	Net Revenues	Cumulative NPV
	A	B	C	D	E	F	G	H
2021	0	0	0	0	0	0	0	0
2022	0	238	11	8	0	6	(3)	(3)
2023	0	361	62	39	0	45	(23)	(22)
2024	0	458	156	102	0	100	(47)	(59)
2025	0	563	358	193	0	169	(4)	(62)
2026	0	802	1,019	477	0	224	318	165
2027	0	47	2,257	1,046	0	177	1,033	861
2028	0	84	4,178	1,937	0	178	2,063	2,173
2029	0	130	6,868	3,310	0	185	3,373	4,202
2030	0	176	10,347	4,954	0	198	5,194	7,155
2031	0	235	14,892	6,912	0	217	7,762	11,325
2032	0	283	20,392	9,466	0	245	10,681	16,749
2033	0	340	26,926	10,158	0	255	16,512	24,673
2034	0	400	34,679	12,352	0	262	22,065	34,681

**Notes**

- 3 B Includes all Electrification Program costs associated with Newfoundland Power’s Commercial EV & Charging  
4 Infrastructure Program beginning in 2022.  
5 C Projected incremental revenues from additional energy sales as a result of the initiatives set out in the 2021 Plan. The  
6 revenue figures are based on a change from the customer rates approved by the Board in Order No. P.U. 3 (2022)  
7 Amended, a *pro forma* 9% customer rate increase split between 2022 and 2023 to reflect a mitigated rate increase  
8 associated with Muskrat Falls and annual increases in electricity rates of 2.25%.  
9 D Projected incremental system costs (energy and capacity costs) as a result of the initiatives set out in the  
10 Electrification Plan. The system cost figures primarily reflect the marginal cost information received from  
11 Newfoundland and Labrador Hydro in January 2022.  
12 F Includes forecast amortization, financing costs and associated income taxes related to Electrification Program costs.  
13 Based on an estimated amortization period of 10 years (equal to the estimated life of an EV), the Company’s  
14 incremental WACC of 5.81% and an income tax rate of 30%.  
15 G Calculated as C - D - E - F.  
16 H The net present value (“NPV”) as of the end of each period using the Company’s incremental WACC of 5.81%.

1 Table 4 provides *pro forma* annual rate mitigating impacts of Newfoundland Power's  
2 Commercial EV & Charging Infrastructure Program.

**Table 4:**  
***Pro Forma* Rate Mitigation Impact Analysis**  
**Commercial EV & Charging Infrastructure**  
**2021 to 2034**  
**(¢/kWh)**

<b>Year</b>	<b>Rate Mitigation Impact</b>
2021	0.000
2022	0.000
2023	(0.001)
2024	(0.001)
2025	0.000
2026	0.006
2027	0.018
2028	0.035
2029	0.055
2030	0.083
2031	0.122
2032	0.164
2033	0.247
2034	0.321

1 Table 5 outlines the *pro forma* revenue requirement for Newfoundland Power’s Custom  
 2 Electrification Program.

**Table 5:**  
**Newfoundland Power Inc.**  
***Pro Forma* Revenue Requirement Analysis**  
**Custom Electrification Program<sup>1</sup>**  
**2021 to 2034**  
**(\$000s)**

Year	Investment		Pro Forma Revenue Requirement Impacts					
	Capital Costs	Program Costs	Incremental Revenues	Incremental System Costs	Capital Cost Recovery	Program Cost Recovery	Net Revenues	Cumulative NPV
	A	B	C	D	E	F	G	H
2021	0	0	0	0	0	0	0	0
2022	0	149	7	5	0	4	(2)	(2)
2023	0	273	54	35	0	29	(10)	(10)
2024	0	221	119	77	0	68	(26)	(31)
2025	0	333	204	108	0	102	(6)	(36)
2026	0	322	317	153	0	148	16	(24)
2027	0	0	324	156	0	183	(15)	(34)
2028	0	0	331	160	0	176	(5)	(37)
2029	0	0	339	170	0	169	(1)	(38)
2030	0	0	346	174	0	162	10	(32)
2031	0	0	354	173	0	156	25	(18)
2032	0	0	353	173	0	149	30	(3)
2033	0	0	302	120	0	128	55	24
2034	0	0	230	86	0	95	49	46

**Notes**

- 3 B Includes all Custom Electrification Program costs associated with Newfoundland Power’s customers beginning in  
 4 2022.
- 5 C Projected incremental revenues from additional energy sales as a result of the initiatives set out in the 2021 Plan. The  
 6 revenue figures are based on a change from the customer rates approved by the Board in Order No. P.U. 3 (2022)  
 7 Amended, a *pro forma* 9% customer rate increase split between 2022 and 2023 to reflect a mitigated rate increase  
 8 associated with Muskrat Falls and annual increases in electricity rates of 2.25%.
- 9 D Projected incremental system costs (energy and capacity costs) as a result of the initiatives set out in the  
 10 Electrification Plan. The system cost figures primarily reflect the marginal cost information received from  
 11 Newfoundland and Labrador Hydro in January 2022.
- 12 F Includes forecast amortization, financing costs and associated income taxes related to Electrification Program costs.  
 13 Based on an estimated amortization period of 10 years (equal to the estimated life of an EV), the Company’s  
 14 incremental WACC of 5.81% and an income tax rate of 30%.
- 15 G Calculated as C - D - E - F.
- 16 H The net present value (“NPV”) as of the end of each period using the Company’s incremental WACC of 5.81%.

<sup>1</sup> Minor participation forecast adjustments have been made to the Custom Commercial Electrification program since the Application was filed in December 2020. As a result, there are minor differences in the Net Revenues and Cumulative NPVs from the table found in Newfoundland Power’s Application, Volume 1, Exhibit 2, Appendix A.

1 Table 6 provides *pro forma* annual rate mitigating impacts of Newfoundland Power's  
2 Custom Electrification Program.

**Table 6:**  
***Pro Forma* Rate Mitigation Impact Analysis**  
**Custom Electrification Program**  
**2021 to 2034**  
**(¢/kWh)**

<b>Year</b>	<b>Rate Mitigation Impact</b>
2021	0.000
2022	0.000
2023	0.000
2024	0.000
2025	0.000
2026	0.000
2027	0.000
2028	0.000
2029	0.000
2030	0.000
2031	0.000
2032	0.001
2033	0.001
2034	0.001

**Updates to *Pro Forma* NPV Analysis**

**Newfoundland Power Inc.**  
**Pro Forma Revenue Requirement Analysis**  
**(Updated for the Purposes of Response to Request for Information TC-PUB-NP-005)**  
**2021 to 2034**  
**(\$000s)**

Year	Investment		Pro Forma Revenue Requirement Impacts					
	Capital Costs	Program Costs	Incremental Revenues	Incremental System Costs	Capital Cost Recovery	Program Cost Recovery	Net Revenues	Cumulative NPV
	A	B	C	D	E	F	G	H
2021	1,538	0	0	0	115	0	(115)	(109)
2022	1,530	1,884	50	32	340	49	(371)	(440)
2023	460	2,802	308	168	477	355	(692)	(1,024)
2024	460	3,888	838	450	530	792	(934)	(1,769)
2025	311	4,283	1,820	795	570	1,360	(905)	(2,452)
2026	0	4,390	3,710	1,479	571	1,958	(298)	(2,664)
2027	0	1,074	8,037	3,122	548	2,461	1,906	(1,380)
2028	0	1,706	14,283	5,510	525	2,548	5,700	2,247
2029	0	2,364	22,442	8,993	502	2,725	10,222	8,396
2030	0	2,980	32,273	12,838	480	2,990	15,965	17,473
2031	0	3,651	44,098	16,975	382	3,336	23,405	30,048
2032	0	4,334	57,754	22,232	214	3,768	31,540	46,063
2033	0	5,061	73,172	23,270	107	4,100	45,695	67,992
2034	0	5,788	90,393	27,129	56	4,439	58,769	94,647

**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 beginning in 2022, including operation of the Company's EV charging sites.
- C Projected incremental revenues from additional energy sales as a result of the electrification initiatives set out in the 2021 Plan. The revenue figures are based on a change from the customer rates approved by the Board in Order No. P.U. 3 (2022) Amended, a *pro forma* 9% customer rate increase split between 2022 and 2023 to reflect a mitigated rate increase associated with Muskrat Falls and annual increases in electricity rates of 2.25%.
- D Projected incremental system costs (energy and capacity costs) as a result of the electrification initiatives set out in the 2021 Plan. The system cost figures primarily reflect the updated marginal cost information received from Newfoundland and Labrador Hydro in January 2022.
- 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. 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%.

**Update to Request for Information PUB-NP-040**

1 **Q. What is the impact of the provincial budget announcement on May 31, 2021 with**  
2 **respect to EV rebates and will provincial government funding impact the utility EV**  
3 **or charging infrastructure incentives either in terms of cost or effectiveness?**  
4

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

10 On May 31, 2021, the Provincial Government (the “Government”) published its 2021  
11 budget (the “2021 Budget”). The 2021 Budget included a \$0.5 million investment in an  
12 *Electric Vehicle Adoption Accelerator* program to encourage the purchase of new electric  
13 vehicles (“EV”).<sup>1</sup> The program provided \$2,500 to an individual purchasing a new EV.<sup>2</sup>  
14

15 On March 15, 2022, the Government announced it was extending the *Electric Vehicle*  
16 *Adoption Accelerator* program to 2023.<sup>3</sup> While program details are not known at this  
17 time, the investment appears to be short-term in nature. It is estimated that the  
18 investment in the program could be up to \$900,000 over the April 1, 2022 to  
19 March 31, 2023 period.<sup>4</sup>  
20

21 Based on extension of the program as well as the updated factors outlined in the response  
22 to Request for Information TC-PUB-NP-005, it is estimated that cumulative net revenues  
23 under the Residential EV & Charging Infrastructure Program could increase by  
24 approximately \$1.3 million by 2034.<sup>5</sup>

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<sup>1</sup> See, for example, slide 19 of the *Budget 2021 Technical Briefing*, dated May 31, 2021.

<sup>2</sup> Ibid.

<sup>3</sup> See the Government announcement, *Government Announces Five-point Plan to Help Newfoundlanders and Labradorians with the High Cost of Living*, dated March 15, 2022. Also, see information on Hydro’s website: <https://nlhydro.com/electricvehicles/ev-rebate>.

<sup>4</sup> The March 15<sup>th</sup> announcement referenced \$1.9 million for EV charging infrastructure as well as a \$2,500 rebate towards the purchase of an EV and a \$1,500 rebate towards the purchase of a plug-in hybrid vehicle (“PHEV”). The announcement also stated that the Government is seeking \$1 million in federal support. The \$1 million in federal support is presumably related to \$1 million in investment in EV charging infrastructure, consistent with previous federal EV infrastructure programs which match the applicant’s investment amount. In this scenario, the remaining \$0.9 million (total \$1.9 million investment less \$1 million related to EV infrastructure) would be available to fund the Government’s EV incentive program. In terms of timing, the Government fiscal year starts on April 1<sup>st</sup> and ends on March 31<sup>st</sup>.

<sup>5</sup> The estimate is based on adding 225 EVs and 225 PHEVs to the EV adoption forecast included in the 2021 Plan [(225 EVs x \$2,500) + (225 PHEVs x \$1,500) = \$900,000]. Using this assumption, there would be little to no change in the mTRC test result for the Residential EV & Charging Infrastructure Program as PHEVs provide a lower benefit to cost ratio compared to EVs, thereby offsetting the incremental benefit the higher number of EVs would have on the overall mTRC score for that program.