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HAND DELIVERED

January 18, 2019

Board of Commissioners  
of Public Utilities  
P.O. Box 21040  
120 Torbay Road  
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon  
Director of Corporate Services  
and Board Secretary

Ladies & Gentlemen:

**Re: Phase One of Muskrat Falls Project Rate Mitigation**

Enclosed are the original and 9 copies of Newfoundland Power Inc.'s ("Newfoundland Power" or the "Company") submission on the reports completed by The Liberty Consulting Group and Synapse Energy Economics Inc. as part of *Phase One of Muskrat Falls Project Rate Mitigation*.

The impact of Nalcor Energy's Muskrat Falls Project on future electricity rates is of serious concern to Newfoundland Power's customers. Project costs and forecast customer rates have increased materially since the announcement of the Muskrat Falls Project in 2011. Newfoundland Power believes it is necessary to examine all possible options to mitigate potential rate increases for customers.

The Company is supportive of the Provincial Government's reference to the Board in September 2018 and recognizes it as an important first step in mitigating the impact of the Muskrat Falls Project on customers.

Newfoundland Power has reviewed the reports completed by The Liberty Consulting Group and Synapse Energy Economics Inc. In the Company's view, both reports are reasonably comprehensive and identify options worthy of examination in Phase Two to determine what benefits they can provide to customers. The enclosed submission provides additional comments and options for consideration by the Board.

**Newfoundland Power Inc.**

55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6  
PHONE (709) 737-5853 • FAX (709) 737-5300 • [bchubbs@newfoundlandpower.com](mailto:bchubbs@newfoundlandpower.com)

Board of Commissioners  
of Public Utilities  
January 18, 2019  
Page 2 of 2

Newfoundland Power understands that the process and schedule for *Phase Two of Muskrat Falls Project Rate Mitigation* will be determined by the Board in March 2019. The Company is committed to participating in the process to the full extent permitted by the Board.

We trust that the foregoing and enclosed are found to be in order.

If you have any questions, please contact me at your convenience.

Yours very truly,



Byron Chubbs  
Vice President, Energy Supply & Planning

Enclosures

c. Dennis Browne, QC  
Consumer Advocate

**Newfoundland Power Inc.**

55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6  
PHONE (709) 737-5853 • FAX (709) 737-5300 • [bchubbs@newfoundlandpower.com](mailto:bchubbs@newfoundlandpower.com)



Newfoundland Power Submission

# Phase One of Muskrat Falls Project Rate Mitigation

January 18, 2019



WHENEVER. WHEREVER.  
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NEWFOUNDLAND  
**POWER**  
A FORTIS COMPANY

# Table of Contents

1.0	Executive Summary.....	1
2.0	Overview .....	2
2.1	Development of the Muskrat Falls Project .....	2
2.2	Customer Rate Mitigation .....	3
2.3	Data Requirements for Transparent Review .....	4
3.0	The Liberty Report.....	5
3.1	Liberty’s Recommendations Overall .....	5
3.2	Additional Comments on Liberty’s Recommendations .....	6
4.0	The Synapse Report .....	10
4.1	Synapse’s Recommendations Overall .....	10
4.2	Additional Comments on Synapse’s Recommendations .....	11

# 1.0 Executive Summary

In September 2018, the Provincial Government issued a reference to the Newfoundland and Labrador Board of Commissioners of Public Utilities (the “Board”) to examine options for mitigating the impact of Nalcor Energy’s (“Nalcor”) Muskrat Falls Project on customer rates. The reference followed significant cost overruns on the project and heightened customer concerns regarding the future price of electricity.

In January 2019, the Board released 2 consultant reports as part of *Phase One of Muskrat Falls Project Rate Mitigation*. Newfoundland Power Inc. (“Newfoundland Power” or the “Company”) reviewed both reports to understand their findings and potential impacts on its customers.

In Newfoundland Power’s view, all possible options should be explored to mitigate the impact of the Muskrat Falls Project on its customers. Overall, the Company observes both Phase One reports are reasonably comprehensive in identifying potential opportunities to reduce future costs to customers. All identified opportunities warrant further analysis in Phase Two.

In addition to the opportunities identified in the reports, Newfoundland Power proposes the Board also consider examining: (i) whether changes to depreciation methodologies and asset service lives could reduce annual costs to customers; and (ii) whether transferring additional operations beyond retail from Newfoundland and Labrador Hydro (“Hydro”) to Newfoundland Power could provide greater economies of scale.

The report completed by The Liberty Consulting Group states Newfoundland Power, as the primary distributor of electricity in the province, may play a significant role in rate mitigation. The Company is committed to participating in the reference to the full extent permitted by the Board to help ensure the process yields results that are of maximum benefit to its customers.

1 For example, the report completed by Synapse Energy Economics Inc. offers preliminary analysis  
2 of issues that are important to Newfoundland Power’s customers, including conservation and  
3 electrification. The Company currently plans to conduct studies in 2019 that could help refine  
4 future analysis of electricity supply and demand in the province.

5

## 6 **2.0 Overview**

### 7 **2.1 Development of the Muskrat Falls Project**

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8 The development of a lower Churchill River hydroelectric project and transmission link with the  
9 island of Newfoundland was outlined in the Provincial Government’s 2007 *Energy Plan*.<sup>1</sup> The  
10 specific Muskrat Falls Project was announced in November 2010.<sup>2</sup>

11

12 In September 2011, estimates for the Muskrat Falls Project indicated construction costs of  
13 approximately \$5 billion.<sup>3</sup> In December 2012, the Provincial Government sanctioned the  
14 Muskrat Falls Project at a total estimated cost of \$7.4 billion.<sup>4</sup> By a series of updates  
15 commencing in June 2014, Nalcor revised the total estimated cost of the Muskrat Falls Project.<sup>5</sup>  
16 By June 2017, the estimated cost had increased to \$12.7 billion. This is \$5.3 billion more than  
17 the originally sanctioned cost.<sup>6</sup> In June 2017, it was also announced that Nalcor’s forecast

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<sup>1</sup> See the Provincial Government’s 2007 *Energy Plan*, Section 4: Electricity, page 32 *et seq.*

<sup>2</sup> See the November 18, 2010 Provincial Government press release *Lower Churchill Project to Become a Reality; Province Signs Partnership Agreement with Emera Inc. for Development of Muskrat Falls*.

<sup>3</sup> See Navigant’s *Independent Supply Decision Review*, September 14, 2011, Table 6: Summary of Muskrat Falls and Labrador-Island Link Capital Cost Estimate, page 41. The table shows: (i) total capital costs associated with the Muskrat Falls generating facility to be \$2.9 billion; and (ii) total capital costs associated with the Labrador-Island Link to be \$2.1 billion. The total capital cost is \$5 billion (\$2.9 billion + \$2.1 billion). This does not include financing costs or any costs associated with the Maritime Link.

<sup>4</sup> For the sanction of the Muskrat Falls Project, see the December 17, 2012 Provincial Government press release *Government of Newfoundland and Labrador Announces Sanction of the Muskrat Falls Development*. For the total estimate at sanction of \$7.4 billion, see Nalcor’s *Muskrat Falls Project Update, June 23, 2017* presentation, slide 10.

<sup>5</sup> On June 24, 2014, Nalcor updated its capital cost estimate to \$7.0 billion, an increase of \$0.8 billion from the sanction capital cost estimate of \$6.2 billion. On September 29, 2015, Nalcor further revised its capital cost estimate to \$7.65 billion. On June 24, 2016, Nalcor provided a total Muskrat Falls Project cost update. The total cost of the project increased to \$11.4 billion.

<sup>6</sup> See Nalcor’s *Muskrat Falls Project Update, June 23, 2017* presentation, slide 10.

1 annual operating costs of the Muskrat Falls Project had tripled from \$34 million to \$109 million.<sup>7</sup>  
2  
3 The costs of Nalcor’s Muskrat Falls Project have never been adjudged to be reasonable or  
4 consistent with the least-cost delivery of reliable service within the meaning of the provincial  
5 power policy.<sup>8</sup> Nonetheless, Orders in Council effectively require the recovery of *all* Muskrat  
6 Falls Project costs from customers on the Island Interconnected System, the majority of whom  
7 are served by Newfoundland Power.<sup>9</sup>

8

## 9 **2.2 Customer Rate Mitigation**

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10 In August 2011, the cost of electricity upon completion of the Muskrat Falls Project was  
11 estimated to be approximately 14.3¢/kWh.<sup>10</sup> At the time of sanctioning the Muskrat Falls Project  
12 in December 2012, Nalcor projected average customer rates in 2021 of approximately  
13 15.1¢/kWh.<sup>11</sup> From 2014 to 2017, increases in Muskrat Falls Project costs resulted in a dramatic  
14 increase in the estimated customer rate impacts associated with the project. By June 2017,  
15 Nalcor estimated the average customer rate following commissioning of the Muskrat Falls  
16 Project would be approximately 22.9¢/kWh.<sup>12</sup>

17

18 This increased estimate has led to a greater focus on assessing what might be done to mitigate  
19 customer rate impacts associated with the project. The Provincial Government indicated that it  
20 intends to limit the increase in customer rates.<sup>13</sup>

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<sup>7</sup> See Nalcor’s *Muskrat Falls Project Update, June 23, 2017* presentation, slide 14.

<sup>8</sup> Orders in Council effectively exempt the Muskrat Falls Project from the Board’s oversight under the *Electrical Power Control Act, 1994* and the *Public Utilities Act*. See the *Muskrat Falls Project Exemption Order under the Electrical Power Control Act, 1994 and the Public Utilities Act (O.C. 2013-342)*, filed November 29, 2013.

<sup>9</sup> Order in Council OC2013-343 requires the cost of supply from the Muskrat Falls Project, including the Muskrat Falls generating facility, Labrador-Island Link and the Labrador Transmission Assets, to be recovered in full through rates charged to customers on the Island Interconnected System.

<sup>10</sup> See the *Report of the Joint Review Panel: Lower Churchill Hydroelectric Generation Project Nalcor Energy Newfoundland and Labrador*, August 2011, page 19.

<sup>11</sup> See Nalcor’s *Muskrat Falls Project Update, June 23, 2017* presentation, slide 19.

<sup>12</sup> See Nalcor’s *Muskrat Falls Project Update, June 23, 2017* presentation, slide 19.

<sup>13</sup> See, for example, the July 28, 2017 Telegram article that states: “Premier Dwight Ball said his government’s mission is to make sure rates don’t go much above 17 cents per kWh when Muskrat Falls is fully online in 2021.”

1 On September 5, 2018, the Provincial Government directed the Board to examine options to  
2 mitigate the impact of the Muskrat Falls Project on customers.<sup>14</sup> On January 2, 2019, the Board  
3 released 2 consultant reports as part of *Phase One of Muskrat Falls Project Rate Mitigation*. The  
4 reports were completed by The Liberty Consulting Group (“Liberty”) and Synapse Energy  
5 Economics Inc. (“Synapse”).

6  
7 Newfoundland Power reviewed both reports to understand and assess their findings and  
8 potential impacts on customers. Section 3 of this submission provides the Company’s comments  
9 on the report completed by Liberty. Section 4 provides comments on the report completed by  
10 Synapse.

11

## 12 **2.3 Data Requirements for Transparent Review**

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13 Newfoundland Power observes that any recommendations to mitigate the impact of the  
14 Muskrat Falls Project on customers must be based on the best available information. The need  
15 for detailed, complete and current information from Nalcor on the Muskrat Falls Project has  
16 been previously recognized by the Board.<sup>15</sup> While concerns of commercial sensitivity have  
17 limited Nalcor’s disclosure of information in the past, regulatory processes have been used by  
18 the Board to permit the disclosure of such information on a confidential basis.<sup>16</sup>

---

<sup>14</sup> References to the Board are completed pursuant to Section 5 of the *Electrical Power Control Act, 1994*. See the September 5, 2018 Provincial Government press release *Premier Ball Brings PUB Back into Muskrat Falls*.

<sup>15</sup> In June 2011, the Provincial Government issued a reference to the Board to review whether the Muskrat Falls Project represented the least-cost option to supply power to the island of Newfoundland. In March 2012, the Board concluded that the information provided by Nalcor in the review was not detailed, complete or current enough to make that determination. See the Board’s *Report to Government*, March 30, 2012, page iv.

<sup>16</sup> Under the Provincial Government reference issued to the Board regarding the Muskrat Falls Project in 2011, Nalcor was responsible for determining which information was considered commercially sensitive pursuant to the *Energy Corporation Act*. Under the current reference, the determination of commercial sensitivity resides with the Board, not Nalcor. If commercial sensitivity is an issue during Phase Two, options exist to address confidentiality concerns, such as undertakings. This has been done in the past. For example, in Order No. P.U. 13 (2018), the Board ordered the release of 2 responses to Requests for Information, both found to contain commercially sensitive information, to parties of Hydro’s *2017 General Rate Application* on a confidential basis.



1 The Phase One reports completed by Liberty and Synapse are preliminary in nature and  
2 acknowledge the need for further data and analysis in Phase Two. Newfoundland Power is  
3 prepared to provide to the Board and its consultants any relevant data that will facilitate  
4 identifying options to mitigate the impact of the Muskrat Falls Project on its customers.

5

6 On January 9, 2019, Nalcor filed with the Board its response to the findings of Liberty’s and  
7 Synapse’s reports. The response indicates that Nalcor had completed extensive analysis of rate  
8 mitigation options.<sup>17</sup> Newfoundland Power observes the reference to the Board is a public  
9 process and it would be efficient, helpful and transparent for Nalcor to provide its analysis and  
10 related data to the Board and other interested parties early in Phase Two.

11

## 12 **3.0 The Liberty Report**

### 13 **3.1 Liberty’s Recommendations Overall**

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14 The Board instructed Liberty to: (i) determine the base revenue requirement of the Muskrat Falls  
15 Project; (ii) examine cost-saving and revenue-enhancing opportunities related to Nalcor and the  
16 Muskrat Falls Project; and (iii) identify the impacts of those opportunities on the base revenue  
17 requirement.

18

19 The Phase One report provided by Liberty offers preliminary findings on potential cost-saving  
20 and revenue-enhancing initiatives. Liberty recommends 6 areas for further analysis: (i) using  
21 export sales to offset customer rates; (ii) eliminating or reducing Nalcor’s returns; (iii) changing  
22 existing project debt financing; (iv) combining Nalcor functions and organizations; (v) improving  
23 Hydro’s efficiency; and (vi) reducing operating and maintenance (“O&M”) costs at Hydro’s  
24 generating facilities.

---

<sup>17</sup> See Page 4 of Nalcor’s response, dated January 9, 2019.

1 Overall, Newfoundland Power views the 6 areas identified by Liberty as reasonably  
2 comprehensive and warranting more detailed examination in Phase Two to determine potential  
3 benefits to customers.

4

5 Additional comments on Liberty's specific recommendations are provided below.

6

## 7 **3.2 Additional Comments on Liberty's Recommendations**

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### 8 ***Export Sales***

9 Liberty recommends examining the use of export sales from the Muskrat Falls Project to offset  
10 customer rates. Using revenues from export sales to offset customer rates is sound utility  
11 practice.

12

13 Given the costs of Nalcor's Muskrat Falls Project are required to be recovered from customers  
14 on the Island Interconnected System, it is consistent with sound utility practice to ensure these  
15 customers receive the full benefit of export sales.

16

### 17 ***Nalcor's Returns***

18 Liberty recommends examining the reduction or elimination of: (i) the return on equity Nalcor  
19 receives through the rates charged by Hydro; and (ii) Nalcor's return on equity in the Muskrat  
20 Falls Project. It is clear that reducing or eliminating Nalcor's returns could reduce costs to  
21 customers.

22

23 Regulated utilities are given the opportunity to earn a fair return on equity as determined by an  
24 independent regulator.<sup>18</sup> Hydro's and Nalcor's returns on equity were never established  
25 according to the Fair Return Standard. Hydro's entitlement to the opportunity to earn a return

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<sup>18</sup> Allowed rates of return on equity are generally commensurate with the risk of a utility's investment (the "Fair Return Standard"). The Fair Return Standard is consistent with Section 80(1) of the *Public Utilities Act* and Section 3(a)(iii) of the *Electrical Power Control Act, 1994*.

1 on equity equivalent to Newfoundland Power is established by Government policy introduced in  
2 2009.<sup>19</sup> Nalcor's returns on equity appear to be established in a similar fashion.

3  
4 Prior to 2009, the Board consistently determined that Hydro did not operate as an investor-  
5 owned utility and therefore was not entitled to a return on equity equivalent to that of an  
6 investor-owned utility.<sup>20</sup> In Newfoundland Power's view, the essential logic that underpinned  
7 prior Board determinations applies to existing Hydro and Nalcor returns on equity.<sup>21</sup>

8

### 9 ***Project Financing and Depreciation***

10 Liberty recommends examining: (i) reducing payments required by Muskrat Falls Project  
11 financing agreements; and (ii) issuing additional debt and structuring the timing of repayments  
12 to align with mitigation opportunities. Refinancing debt occurs regularly at electric utilities and  
13 could achieve cost savings for customers.

14

15 In addition to financing costs, depreciation expense is a significant component of Nalcor's  
16 revenue requirement for the Muskrat Falls Project.<sup>22</sup> The Company proposes the Board also

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<sup>19</sup> Order in Council OC2009-063 establishes the same target return on equity for Hydro as was most recently set for Newfoundland Power through a General Rate Application.

<sup>20</sup> In Order No. P.U. 7 (2002-2003), page 42, the Board stated: "*The Board finds no statutory basis for treating NLH as an investor owned utility. The Board concludes approval in principle of NLH's request to be treated as an investor owned utility is not justified based on its current operating characteristics. The Board believes NLH's request is premature in the absence of a sound plan by NLH of how it will achieve financial targets similar to an investor owned utility and what impact this will have on its customers. The Board notes that NLH's debt is guaranteed by Government and this ensures NLH's continued access to the capital markets of the world.*" In Order No. P.U. 14 (2004), page 41, the Board again found Hydro is not entitled to a return on equity comparable to an investor-owned utility.

<sup>21</sup> Two federal loan guarantees have been issued to finance the Muskrat Falls Project totaling approximately \$7.9 billion. Similar to Hydro's debt, which is guaranteed by the Provincial Government, the federal guarantees effectively reduce the financial risk to which Nalcor is exposed.

<sup>22</sup> Information provided by Nalcor indicates that depreciation expense accounts for approximately \$246 million of its annual revenue requirement for the Muskrat Falls Project, including the Labrador-Island Link, Muskrat Falls generating facility, and Labrador Transmission Assets. This accounts for approximately 30% of Nalcor's \$809 million revenue requirement for the Muskrat Falls Project in 2021 (\$246 million / \$809 million = 30%). See ATIPPA request File #: PB/242/2018, dated April 18, 2018.

1 examine various depreciation methodologies and asset service lives that could be used to reduce  
2 annual costs to customers.<sup>23</sup>

3

#### 4 ***Combining Nalcor Functions and Organizations***

5 Liberty recommends examining the structural realignment of Nalcor and its subsidiaries to  
6 reduce duplication and organizational complexity. The structural realignment of Nalcor and its  
7 subsidiaries is timely and could reduce costs to customers while also improving transparency.

8

9 The Provincial Government's role in the electrical sector has undergone several structural  
10 changes in the past to reflect the achievement of policy goals.<sup>24</sup> Newfoundland Power observes  
11 the province is also in a transition period today as it approaches completion of the Muskrat Falls  
12 Project. Addressing organizational complexity and duplication within Nalcor could yield  
13 opportunities to improve efficiencies and reduce costs to customers.

14

15 Additionally, Nalcor is presently exempt from the provisions of the *Public Utilities Act* and the  
16 *Electrical Power Control Act, 1994*.<sup>25</sup> Any restructuring of Nalcor should also consider the level of  
17 regulatory oversight required, if any, to ensure the interests of customers are protected.

---

<sup>23</sup> Depreciation involves collecting the capital cost of an asset from customers over the useful life of that asset. In 2016, Nalcor indicated it had not completed a formal depreciation study for the Muskrat Falls Project and that it intends to depreciate the assets on a straight-line basis over a combined average service life of 50 years (see ATIPPA request File #: PB/576/2015, January 31, 2016, page 6). Newfoundland Power observes that 50 years is relatively short in comparison to the asset service lives used by Hydro. For example, Hydro's 2016 *Depreciation Study*, filed with its 2017 *General Rate Application*, depreciates its dams over 110 years, its powerhouses over 75 years, and its generators over 65 years (see page II-9 *et seq.*). The *Depreciation Study* filed with Hydro's 2012 *Depreciation Methodology Application* stated that the sinking fund method has been used by some electric utilities to depreciate large generating plants, with rates that are lower in the early years of an asset's life and increase over time (see page II-2 *et seq.*).

<sup>24</sup> The Provincial Government established the Newfoundland Power Commission in 1954 to examine generation options in the province. Power Distribution Districts were created in 1963 to manage the supply of electricity to rural areas. The Rural Electricity Authority was created in 1965 to facilitate rural electrification. Eventually, the Newfoundland Power Commission became the entity currently known as Hydro. Along with the amalgamation of Government-owned assets under Hydro, Power Distribution Districts and the Rural Electricity Authority were eventually phased out. For more information on the history of the province's electrical sector, see Order No. P.U. 7 (2002-2003), page 11 *et seq.*

<sup>25</sup> Section 17(2) of the *Energy Corporation Act* establishes that Nalcor is not a utility as defined by the *Public Utilities Act* and that the Act does not apply to the corporation. As a result, Nalcor is not subject to regulatory oversight by the Board.

## 1 ***Hydro's Costs***

2 Liberty recommends examining opportunities to improve Hydro's efficiency and reduce O&M  
3 costs at Hydro generating facilities. Improving Hydro's efficiency could reduce costs to  
4 customers without reducing service quality.

5  
6 Newfoundland Power has regularly challenged Hydro on its costs in regulatory proceedings,  
7 including O&M costs at its generating facilities.<sup>26</sup> These efforts have helped reduce costs to  
8 Newfoundland Power's customers.<sup>27</sup> An increased focus on productivity and efficiencies by  
9 Hydro could, in the Company's view, yield further cost savings for customers in the future.

10

## 11 ***Expanding Newfoundland Power's Role***

12 Liberty recommends examining the transfer of Hydro retail (i.e. distribution and customer  
13 service) operations to Newfoundland Power. The transfer of transmission and distribution  
14 system assets from the Provincial Government to Newfoundland Power has been undertaken in  
15 the past.<sup>28</sup>

16

17 The Company shares Liberty's view that avoided costs (presumably resulting from economies of  
18 scale) and service quality improvements may be achievable through the transfer of retail  
19 operations from Hydro to Newfoundland Power. In addition, the Company observes the

---

<sup>26</sup> For example, on October 11, 2017, Hydro filed an application to recover \$42.2 million in deferred supply costs for the years 2015 and 2016. In correspondence dated November 10, 2017, Newfoundland Power indicated that Hydro had not provided sufficient data to permit a full assessment of the costs and recommended the application not be approved. In Order No. P.U. 39 (2017), the Board dismissed Hydro's application.

<sup>27</sup> See Order Nos. P.U. 16 (2017) and P.U. 23 (2017), where the Board rejected a proposed rate increase to customers of 18.6%, effective July 1, 2017. This rate increase was justified by Hydro, in part, as necessary in light of "the possibility of future rate increases." The Board rejected Hydro's request in favour of an 8.5% increase proposed by Newfoundland Power. In Hydro's 2017 General Rate Application, an Off-Island Purchases Deferral Account was proposed to collect approximately \$280 million from customers over the 2018 through 2020 period to offset future charges associated with the Muskrat Falls Project. Hydro withdrew the proposed account as a result of intervener opposition, including that of Newfoundland Power.

<sup>28</sup> In 1958, Newfoundland Power (then Newfoundland Light and Power), signed a rural electrification agreement with the Provincial Government to provide electricity in areas where it was not economical for the Company to build its own transmission lines. As part of this agreement, assets owned by the Newfoundland and Labrador Power Commission, which eventually became Hydro, would be divested to the Company, which would then own and operate the assets. Other entities, including municipal corporations, also divested assets to Newfoundland Power.

1 construction, maintenance and operation of transmission systems require substantially similar  
2 physical, technical and human resources as required for distribution systems. This implies that  
3 greater economies of scale could exist beyond retail operations. This, in turn, could provide  
4 additional value to customers in terms of reduced costs and improved service quality.  
5

## 6 **4.0 The Synapse Report**

### 7 **4.1 Synapse’s Recommendations Overall**

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8 The Board instructed Synapse to focus on issues of electricity supply and demand. The  
9 preliminary analysis completed by Synapse in Phase One covered 4 specific issues: (i) the  
10 forecast load for the province; (ii) current, historical and projected conservation and demand  
11 management (“CDM”) efforts; (iii) potential opportunities for electrification; and (iv) the range of  
12 export energy and capacity available post Muskrat Falls.

13  
14 Overall, Newfoundland Power is supportive of efforts to maximize the value of Muskrat Falls  
15 power for customers through CDM, electrification and various rate designs. Fully analyzing  
16 potential customer benefits requires an understanding of potential future load requirements.  
17 The Company acknowledges the significant uncertainty that exists regarding future load  
18 forecasting and is supportive of further analysis to better understand future elasticity impacts  
19 and what effect that will have on the rates paid by customers.<sup>29</sup>

---

<sup>29</sup> Newfoundland Power’s forecasts indicate that the elasticity impact of a change in the price of electricity primarily occurs in the first 2 years, with smaller residual impacts thereafter. The analysis shows that a 1% increase in the price of electricity will result in a 0.21% decrease in energy sales. These elasticity estimates are based on past experience and will not be indicative of elasticity impacts associated with the significant customer rate increases forecast by Nalcor as a result of the Muskrat Falls Project.

1 Newfoundland Power is initiating 3 studies in 2019 that could inform future refinement of the  
2 supply and demand analyses undertaken by Synapse for the Board. These are: (i) a new  
3 potential study, which will include an increased focus on demand response technologies; (ii) a  
4 rate design study, which will include time-of-use rates; and (iii) a load research study, which will  
5 permit a better understanding of the impacts of heat pump technology.<sup>30</sup>

6  
7 Additional comments on Synapse’s report are provided below.

## 9 **4.2 Additional Comments on Synapse’s Recommendations**

### 10 *Conservation and Demand Management*

11 Since 2008, Newfoundland Power has developed 3 successive 5-year conservation plans in  
12 coordination with Hydro. These plans have been the subject of transparent public review by the  
13 Board.<sup>31</sup> Programs have been executed in accordance with the plans.

---

<sup>30</sup> The new conservation potential study has been commissioned and is expected to be completed by Dunskey Energy Consulting by mid-2019. Some results, such as an end-use survey of commercial customers, may be available sooner. A new rate design study evaluating rate options, including time-of-use rates, is in the planning stages and will focus on customer rates post Muskrat Falls. It will require detailed information on the costs of the post-Muskrat Falls system. A heat pump load research study is also currently in the planning stages, with implementation expected to commence in the 3<sup>rd</sup> quarter of 2019. Full data collection and analysis associated with the rate design study and heat pump load research study is expected to require 1 to 2 years to complete; however, some useful information may be available earlier.

<sup>31</sup> The Company filed its *Five-Year Conservation Plan: 2008-2013* with the Board in 2008 and again as part of its *2010 General Rate Application*. The Board approved a deferral account to support plan implementation in Order No. P.U. 13 (2009) and approved the recovery of plan expenditures in Order No. P.U. 43 (2009). Newfoundland Power filed its *Five-Year Conservation Plan: 2012-2016* with the Board in 2012 as part of its *2012/2013 General Rate Application*. The Board approved recovery of plan expenditures in Order No. P.U. 13 (2013). The Company filed its current *Five-Year Conservation Plan: 2016-2020* with the Board as part of its *2016/2017 General Rate Application*. In addition to coordination with Hydro, development of the plan included public consultations and a presentation to the Board and Consumer Advocate. In Order No. P.U. 18 (2016), the Board indicated it was satisfied that the Company’s approach to conservation was appropriate and approved proposed evaluation measures.

1 Table 1 shows target and actual energy savings achieved by Newfoundland Power’s customers  
 2 annually for the period 2009 to 2017.

Table 1: Newfoundland Power Annual Energy Savings, 2009-2017 (GWh)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Target	2.1	4.4	5.9	8.0	8.1	12.0	12.7	16.9	30.1
Actual	2.6	5.1	12.1	8.4	8.1	13.7	16.6	25.2	31.9
Difference	0.5	0.7	6.2	0.4	0.0	1.7	3.9	8.3	1.8

3 Newfoundland Power’s customers have achieved or exceeded target energy savings each year  
 4 from 2009 to 2017. Customer demand for conservation programs is high.<sup>32</sup> Demand for such  
 5 programs will likely remain high as electricity prices increase. Newfoundland Power supports  
 6 ensuring conservation programming continues to deliver value for customers.<sup>33</sup> The 2019  
 7 potential study will help ensure programs continue to be economically justified based on  
 8 electricity market conditions in the province.

9

10 ***Electrification***

11 Synapse identifies residential heating, commercial heating and transportation as the best  
 12 opportunities for electrification. These end uses have experienced a degree of electrification in  
 13 the province in the past and are appropriate for further analysis to determine potential value to  
 14 customers.

---

<sup>32</sup> In 2017, approximately 7,300 on-bill rebates were provided to Newfoundland Power’s customers. This is the most in the Company’s history. In 2018, the joint Newfoundland Power-Hydro website for energy conservation advice and information received approximately 411,000 visits. This compares to approximately 6,700 visits when the website was launched in 2008.

<sup>33</sup> Newfoundland Power continuously assesses utility best practices for economic screening of customer conservation programs. All programs included in the *Five-Year Conservation Plan: 2016-2020* were screened using the Total Resource Cost test and the Program Administrator Cost test. These are standard industry metrics that assess the cost-effectiveness of conservation programs and facilitate program planning. The use of these tests was approved by the Board in Order No. P.U. 18 (2016). Test results were provided in Schedules C and E of the plan.



1 Electrification of space heating was pursued in the province in the 1960s in response to the  
2 excess supply of electricity.<sup>34</sup> Rate design was among the measures used to promote  
3 electrification at that time.<sup>35</sup> It is appropriate to consider how rate design, including time-of-use  
4 pricing, could optimize the benefits of electrification for customers post Muskrat Falls.<sup>36</sup>  
5  
6 Electrification of the transportation sector is occurring globally as electric vehicle technology  
7 matures.<sup>37</sup> Preliminary analysis completed by Newfoundland Power indicates some opportunity  
8 to increase electric vehicle penetration in the province from current levels. Further refining  
9 Synapse’s analysis in Phase Two to apply additional province-specific data will assist in  
10 understanding the potential value of electrification for customers post Muskrat Falls.<sup>38</sup>

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<sup>34</sup> Electrification efforts in the late 1960s and throughout the 1970s resulted in an increased penetration of electric space heating on the Island Interconnected System. In 1967, only 1.1% of homes were heated using electricity. This compares to approximately 70% of homes in 2018.

<sup>35</sup> In 1964, Newfoundland Power introduced new rates for electric space heating. This included a declining block rate for customers in urban areas. See Order Nos. P.U. 30 (1964) and 48 (1964).

<sup>36</sup> Newfoundland Power has reviewed various rate designs in the past. For example, the Company initiated a comprehensive Retail Rate Review in 2008. The review provided an open and transparent process to evaluate the design of the Company’s rates. The review included consultation with the Consumer Advocate and Hydro and regular updates to Board staff. A study of time-of-use rates was completed as part of the review.

<sup>37</sup> See the International Energy Agency’s *Global EV Outlook*, 2018.

<sup>38</sup> For example, recent data provided by the Provincial Government indicates approximately 60 electric vehicles and 364 hybrids registered in the province. However, the Provincial Government does not currently track what portion of these vehicles are plug-in hybrids.