

April 2, 2019

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**Re: Nalcor Energy Marketing Activities Conducted in 2018 on Behalf of Newfoundland and Labrador Hydro ("Hydro")**

In Hydro's response to CA-NLH-340 as part of the 2017 General Rate Application process, Hydro committed to filing a report with the Board of Commissioners of Public Utilities (the "Board") by the end of the first quarter of 2019. The report would detail activities carried out through 2018 by Nalcor Energy Marketing on Hydro's behalf, and illustrate how those activities are to the benefit of Hydro's customers.

Hydro has provided the Board with two versions of this report: (1) a complete copy and (2) a version in which sensitive commercial information has been redacted. Enclosed with this letter please find a redacted copy of the report "Nalcor Energy Marketing Activities Conducted in 2018 on Behalf of Newfoundland and Labrador Hydro." Hydro will provide an unredacted version upon receipt of an undertaking to assure the protection of the confidential information from disclosure.

Ms. C. Blundon  
Public Utilities Board

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If you have any questions, please contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**



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Encl.

cc: Cheryl Blundon, Board of Commissioners of Public Utilities

Nalcor Energy Marketing Activities Conducted in 2018  
on Behalf of Newfoundland and Labrador Hydro

April 2, 2019

*A Report to the Board of Commissioners of Public Utilities*





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1 **1.0 Introduction**

2 In 2009 Nalcor began trading in external markets via its energy marketing line of business,  
3 Nalcor Energy Marketing (“NEM”); an entity created to market surplus provincial energy. In  
4 preparation for the interconnection of the Island Interconnected System to the North  
5 American Grid, NEM implemented the processes, technology, people, and commercial  
6 arrangements necessary for increased participation in external markets. To maximize the  
7 value of provincial resources, Newfoundland and Labrador Hydro (“Hydro”) and NEM began  
8 working together in 2018 to ensure efficient production of electricity and optimization of  
9 existing assets. Upon interconnection, Hydro was able to leverage NEM’s capabilities to  
10 secure energy from external markets to meet its needs.

11

12 NEM currently provides various services to Hydro to ensure Hydro’s customers benefit from  
13 Hydro’s new interconnections to the North American Grid and associated access to external  
14 markets. These services include water management and production scheduling, transacting  
15 in external markets to assist Hydro in managing its energy supply and capacity requirements,  
16 managing and executing ponding activities, scheduling Recapture Energy<sup>1</sup> during Labrador-  
17 Island Link (“LIL”) commissioning, and general water management and energy marketing  
18 administrative activities. During 2018, NEM provided these services to Hydro at no cost.

19

20 NEM and Hydro collaborate to maximize value for customers by realizing the benefits of  
21 interconnection while ensuring that system reliability is held paramount. At all times, Hydro  
22 provides direction and retains full decision making ability with respect to its resources.

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<sup>1</sup> Under the terms of the Power Purchase Agreement between Hydro and Churchill Falls (Labrador) Corporation. Hydro is able to, and does, purchase approximately 300 MW of Recapture Energy from and Churchill Falls (Labrador) Corporation at a cost of 0.2 cents per kWh for use outside of the Province of Quebec. Hydro currently uses a portion of the Recapture Energy to supply its customers, with the remainder of the Recapture Energy sold to NEM at a cost of 0.2 cents per kWh for resale in external markets.

1 **2.0 Nalcor Energy Marketing Services to Newfoundland and Labrador Hydro**

2 **2.1 Water Management and Production Scheduling**

3 NEM formed the Water Management and Production Scheduling (“WM&PS”) group in early  
4 January 2018. The WM&PS has the responsibility for providing Hydro with analysis and  
5 support for water management decisions, with control and accountability for all Hydro  
6 assets maintained by Hydro.

7

8 The WMP&S group provides assistance to Hydro by undertaking the following key activities:

9

- 10 • Making recommendations to Hydro on production scheduling, including use of  
11 hydroelectric and thermal generation and imports as required;
- 12
- 13 • Providing recommendations on hydro and thermal unit dispatch and scheduling;
- 14
- 15 • Preparing and issuing weekly generation guidelines for unit dispatch, following  
16 approval of production recommendations by Hydro;
- 17
- 18 • Making decisions related to control gate releases for water management in the Bay  
19 d’Espoir system, and making requests to Energy Control Centre (“ECC”) or field staff  
20 to implement those decisions;
- 21
- 22 • Making decisions related to gate operation for release of excess flow (spill), and  
23 making requests to ECC or field staff to implement those decisions;
- 24
- 25 • Preparing public notifications of spillway releases;
- 26
- 27 • Making recommendations for exports to avoid spill;<sup>2</sup>

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<sup>2</sup> No exports for spill avoidance have been required to date.



- 1       • Making gate operation decisions related to the release of flows to meet fisheries flow  
2       requirements and making requests to the ECC or field staff to implement those  
3       decisions; and
  
- 4
- 5       • Providing guidance and reviewing schedules for unit or release facility outages to  
6       ensure reliable system operation, accordance with environmental requirements, and  
7       to minimize impact on optimization activities.
- 8

9       Decisions regarding any mid-week changes to gate settings for water management or  
10      fisheries flows are generally made without review by Hydro but are at all times guided by  
11      Hydro’s operating instructions and environmental standards. Decisions regarding any mid-  
12      week changes to generation at the Holyrood Thermal Generating Station (“Holyrood”) and  
13      import/export targets for water/supply management are made by Hydro, in consideration of  
14      recommendations from WM&PS.

## 16   **2.2   External Market Transactions**

17      NEM transacts in external markets to assist Hydro in managing its energy supply and  
18      capacity requirements. To date, this has included purchasing power from external markets  
19      for import into Newfoundland and Labrador.

20

21      Imports to maintain energy supply are carried out according to WM&PS instructions that  
22      have been approved by Hydro.<sup>3</sup> The instructions provide some flexibility within bounds  
23      approved by Hydro. This enables NEM to apply its market knowledge and energy marketing  
24      capabilities to target least-cost market purchases.

25

26      Imports to support operating reserves are carried out according to direct instructions from  
27      Hydro, which include specific hours and quantities.

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<sup>3</sup> The instructions are finalized in the weekly water management meeting.

1 To date, no external market sales to avoid spill in Hydro reservoirs have been transacted.

2

### 3 **2.3 Ponding Activity**

4 NEM manages and executes ponding activity to assist Hydro in optimizing its reservoir  
5 storage capabilities for the benefit of customers. NEM monitors market conditions and  
6 Hydro import and export capability to determine optimum timing and quantity of external  
7 market purchases and sales. NEM transacts and schedules the transactions with external  
8 markets and counterparties, manages the amount and average cost of ponded energy, and  
9 assumes the risk of any negative net gain from ponding activity. Hydro has an opportunity to  
10 purchase any energy which NEM has purchased for ponding. In 2018 a total of 2.0 GWh was  
11 ponded. On December 21, 2018, pursuant to the approved Pilot Agreement for the  
12 Optimization of Hydraulic Resources,<sup>4</sup> Hydro elected to purchase the 2.0 GWh of ponded  
13 energy for use by its customers. At that time Hydro required additional energy for water  
14 management purposes and the cost of the ponded energy was below current market pricing.  
15 As such, the ponded energy met the standard for least cost. At the end of 2018 the balance  
16 of ponded energy was 0 GWh.

17

### 18 **2.4 Scheduling Recapture**

19 During commissioning of the LIL, Recapture Energy surplus to the requirements of Hydro's  
20 customers in Labrador has been used to serve customers on the Island Interconnected  
21 System. NEM works closely with Hydro to maximize the amount of Recapture Energy  
22 delivered to the Island Interconnected System. To facilitate such deliveries, NEM provides  
23 Hydro with a seven-day hourly forecast of firm Recapture Energy availability for transfer to  
24 the Island Interconnected System and uses a scheduling interface to coordinate additional  
25 Recapture Energy transfers in real time. NEM's assistance in forecasting the availability of  
26 Recapture Energy and managing Labrador load in real time helps ensure that that Labrador

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<sup>4</sup> Board Order No. P.U. 49(2018).

1 customer requirements are met in the scheduling of Recapture Energy and that all  
2 associated contractual requirements are respected.

3

### 4 **3.0 2018 Benefits**

#### 5 **3.1 Maritime Link Activities**

6 In February 2018 NEM began purchasing energy over the Maritime Link. On Hydro's behalf,  
7 through 2018, NEM purchased energy totaling 57.4 GWh to offset Hydro-owned thermal and  
8 standby generation.<sup>5</sup> The 57.4 GWh of energy that was transmitted to the Island  
9 Interconnected System provided a net benefit of [REDACTED] Table 1 provides a summary of  
10 the Maritime Link imports; further details of these benefits are found in Appendix A.

**Table 1: Summary of Maritime Link Imports**

	<b>Total Imports (GWh)</b>	<b>Net Benefit (\$ millions)</b>
Total	57.4	[REDACTED]

#### 11 **3.2 Labrador-Island Link Activities**

12 Commissioning activities on the LIL through 2018 resulted in the delivery of approximately  
13 53.1 GWh of Recapture Energy to displace thermal generation on the Island Interconnected  
14 System. NEM assisted in the scheduling of these deliveries on Hydro's behalf. The 53.1 GWh  
15 of energy that was transmitted to the Island Interconnected System provided a net benefit  
16 of [REDACTED] Table 2 provides a summary of the Labrador-Island Link imports; further  
17 details of these benefits are found in Appendix B.

**Table 2: Summary of Labrador-Island Link Imports**

	<b>Total Imports (GWh)</b>	<b>Net Benefit (\$ million)</b>
Total	53.1	[REDACTED]

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<sup>5</sup> This total excludes inadvertent energy transfers over the Maritime Link.

1 **4.0 Conclusion**

2 Working together, NEM and Hydro were able to realize financial and reliability benefits for  
3 Hydro's customers in 2018. The results of these efforts generated net benefits of  
4 approximately [REDACTED] NEM and Hydro look forward to continued collaboration to  
5 ensure reliable system operation and optimization of provincial resources, in support of  
6 Hydro's mandate to provide service at the lowest possible cost consistent with reliable  
7 service.

## **Appendix A**

### **Net Benefits of the Maritime Link**



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1	[REDACTED]
2	[REDACTED]
3	
4	[REDACTED]
5	[REDACTED]
6	[REDACTED]
7	[REDACTED]
8	
9	[REDACTED]
10	[REDACTED]
11	[REDACTED]
12	[REDACTED]
13	[REDACTED]
14	
15	[REDACTED]
16	[REDACTED]
17	[REDACTED]
18	[REDACTED]
19	[REDACTED]
20	[REDACTED]
21	[REDACTED]
22	[REDACTED]

[REDACTED]

1	[REDACTED]
2	[REDACTED]
3	
4	[REDACTED]
5	[REDACTED]
6	[REDACTED]
7	[REDACTED]
8	[REDACTED]
9	[REDACTED]
10	
11	[REDACTED]
12	[REDACTED]
13	[REDACTED]
14	[REDACTED]
15	[REDACTED]
16	[REDACTED]
17	
18	[REDACTED]
19	[REDACTED]
20	[REDACTED]

[REDACTED]



## **Appendix B**

### **Net Benefits of the Labrador-Island Link**



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1	[REDACTED]
2	[REDACTED]
3	
4	[REDACTED]
5	[REDACTED]
6	[REDACTED]
7	[REDACTED]
8	[REDACTED]
9	[REDACTED]
10	
11	[REDACTED]
12	[REDACTED]
13	[REDACTED]
14	[REDACTED]
15	
16	[REDACTED]
17	[REDACTED]
18	
19	[REDACTED]
20	[REDACTED]
21	[REDACTED]
22	[REDACTED]
23	[REDACTED]
24	[REDACTED]
25	[REDACTED]

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[REDACTED]

1 [REDACTED]

2 [REDACTED]