

February 11, 2019

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

Attention: Ms. Cheryl Blundon
Director Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Energy Supply Report – Monthly Report – January 2019

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report as directed by the Board in correspondence dated February 6, 2016 and with schedule modifications on July 26, 2016 and July 29, 2016.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

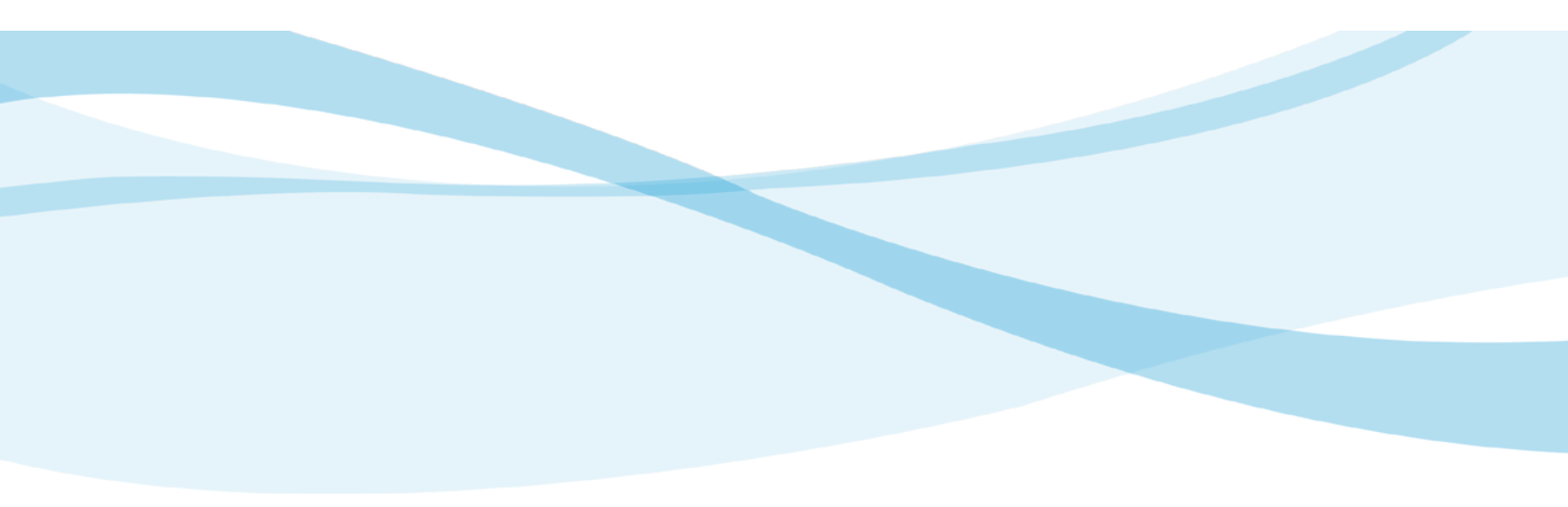


Shirley A. Walsh
Senior Legal Counsel – Regulatory
SAW/kd

Encl.

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey
ecc: Sheryl Nisenbaum – Praxair Canada Inc.
Dean Porter – Poole Althouse

Dennis Browne, Q.C. – Browne Fitzgerald Morgan & Avis
Denis Fleming – Cox & Palmer
Larry Bartlett – Teck Resources Limited



Monthly Energy Supply Report for the Island Interconnected System

January 2019

February 10, 2019

A Report to the Board of Commissioners of Public Utilities



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1 **1.0 Introduction**

2 On February 8, 2016, the Board of Commissioners of Public Utilities (the “Board”) requested
 3 Newfoundland and Labrador Hydro (“Hydro”) file a bi-weekly report containing, but not
 4 limited to, the following:

- 5 1. System Hydrology Report as contained in Hydro's Quarterly report;
- 6 2. the thermal plant operated in support of hydrology;
- 7 3. production by plant/unit; and
- 8 4. details of any current or anticipated long-term de-rating.

9
 10 In July 2016, the Board indicated that a monthly report would henceforth be sufficient. This
 11 report covers data for January 2019.

12
 13 **2.0 System Hydrology**

14 Table 1 summarizes the aggregate storage position of Hydro’s reservoirs at the end of the
 15 reporting period.

Table 1: System Hydrology Storage Levels

Storage Level	2019 (GWh)	2018 (GWh)	20 Year Average (GWh)	2018 Minimum Storage Target (GWh) ¹	Maximum Operating Level (GWh)	Percent of Maximum Operating Level
31 Jan 2019	1,517	1,244	1,791	1,058	2,452	62%

16 Reservoir inflows in January 2019 were approximately 47% above average. To date, 2019
 17 inflows have been 47% above average.

18
 19 The aggregate reservoir storage level on January 31, 2019 was 1,517 GWh, 38% below the
 20 seasonal Maximum Operating Level (“MOL”). This storage level compares with the 20-year

¹ The 2019 minimum storage targets are currently in draft. It is anticipated these will be finalized in advance of the February 2019 Energy Supply report, due to be filed with the Board in March 2019.

1 average storage level at the end of January 2019 of 1,791 GWh. At the end of January 2018,
 2 aggregate storage level was 1,244 GWh.
 3
 4 Figure 1 plots the 2018 and 2019 storage levels, maximum operating level storage and the 20-
 5 year average aggregate storage for comparison.²

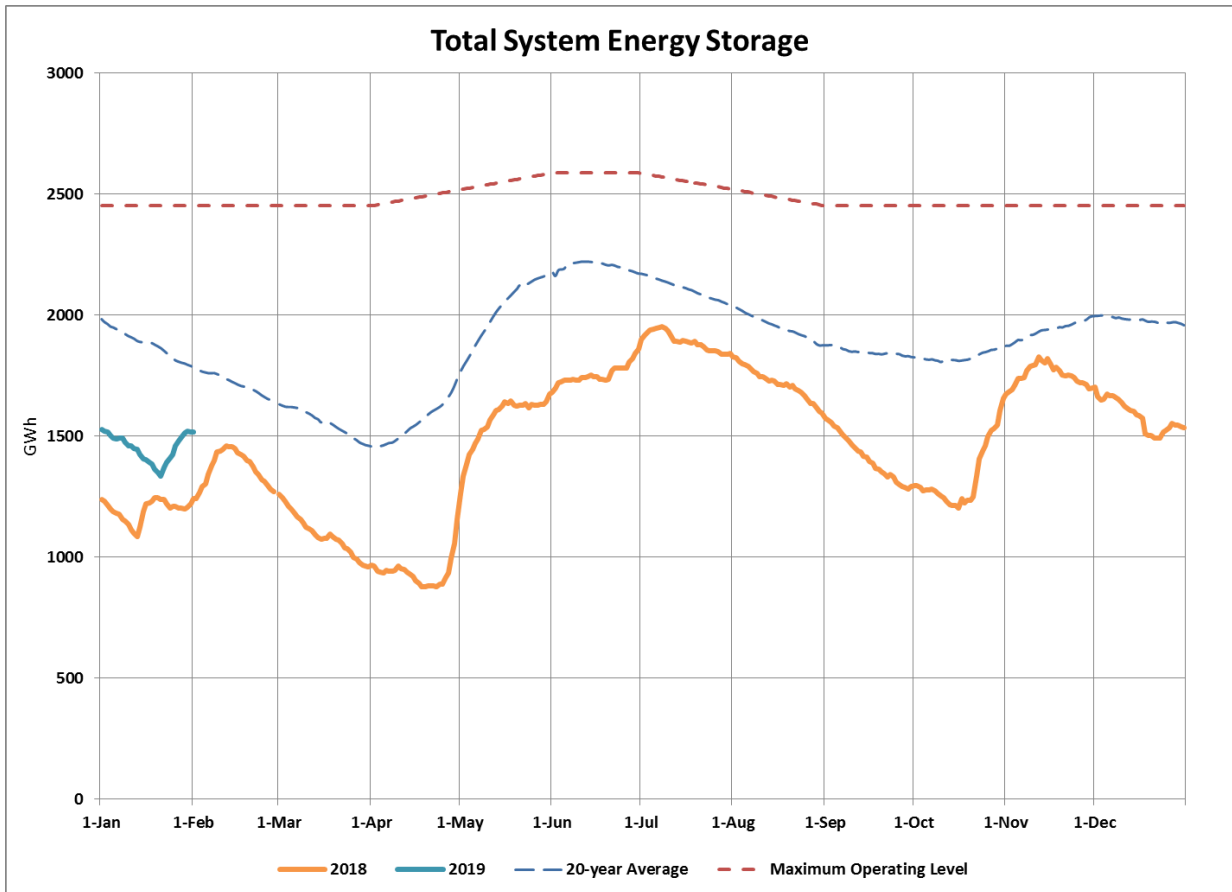


Figure 1: Total System Energy Storage – January 31, 2019

6 3.0 Production by Plant

7 Production during January 2019 by plant and unit, both hydraulic and thermal, is provided in
 8 Table 2. Quantities imported are also provided in Table 2.

² The 2019 minimum storage targets are currently in draft. It is anticipated these will be finalized in advance of the February 2019 Energy Supply report, due to be filed with the Board in March 2019.

Table 2: Generation Production – January 1 to January 31, 2019³

		Generation, GWh	Year to Date, GWh
Newfoundland and Labrador Hydro - Hydro Generation			
Bay d'Espoir Plant	Unit 1	41.2	41.2
	Unit 2	42.0	42.0
	Unit 3	30.6	30.6
	Unit 4	18.8	18.8
	Unit 5	20.9	20.9
	Unit 6	20.6	20.6
	<u>Unit 7</u>	<u>85.0</u>	<u>85.0</u>
	<i>Total Bay d'Espoir Plant</i>	259.1	259.1
Upper Salmon Plant		50.4	50.4
Granite Canal Plant		23.6	23.6
Hinds Lake Plant		25.8	25.8
Cat Arm Plant	Unit 1	45.3	45.3
	<u>Unit 2</u>	<u>46.4</u>	<u>46.4</u>
	<i>Total Cat Arm Plant</i>	91.7	91.7
Paradise River		3.1	3.1
Star Lake Plant		12.8	12.8
Rattle Brook Plant		1.0	1.0
Nalcor Exploits Plants		53.1	53.1
Mini Hydro		0.4	0.4
Total Hydro Generation		520.8	520.8
Newfoundland and Labrador Hydro - Thermal Generation			
Holyrood	Unit 1	68.9	68.9
	Unit 2	75.0	75.0
	<u>Unit 3</u>	<u>70.6</u>	<u>70.6</u>
	<i>Total</i>	214.4	214.4
Holyrood GT and Diesels		0.4	0.4
Hardwoods GT		0.0	0.0
Stephenville GT		0.0	0.0
Other Thermal		0.0	0.0
Total Thermal Generation		214.9	214.9
Purchases			
Requested NP and Vale		0.0	0.0
CBPP Secondary		1.4	1.4
CBPP Cogen		6.9	6.9
Wind Purchases		16.7	16.7
Maritime Link Imports ⁴		5.4	5.4
New World Dairy		0.3	0.3
Labrador-Island Link Imports ⁵		66.9	66.9
Total Purchases		97.6	97.6
Total⁶		833.3	833.3

³ Gross generation.

⁴ Includes energy flows as a result of purchases and inadvertent energy.

⁵ Includes purchases as result of testing activity.

⁶ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.

1 **4.0 Thermal Production and Imports**

2 Units 1, 2 and 3 at Holyrood were required to generate during January 2019 to meet Hydro's
3 customer and system reliability requirements. While system energy in storage remained
4 above the minimum storage target reservoir storage at Long Pond, the head pond for the Bay
5 d'Espoir generating station continued to decline until the third week of January 2019. As such,
6 the use of thermal generation above minimum production, which began in December 2018,
7 continued through January up to January 25, 2019. The required thermal generation was
8 supplemented by deliveries over the Labrador-Island Link ("LIL") and purchases over the
9 Maritime Link ("ML"), when available and economic.

10

11 On January 15, 2019 the combined target set on December 19, 2018 of 450 MW for thermal
12 generation and imports over the ML and LIL was reduced to a minimum unit loading of 100
13 MW per unit at Holyrood, supplemented by LIL deliveries and ML purchases. Following that
14 decision, the level of thermal production required declined as system conditions permitted
15 until January 25, 2019 when Holyrood was returned to minimum production levels and ML
16 imports ceased. This was in recognition of the recharge of most reservoirs as a result of
17 inflows from two significant rainfall events.

18

19 In January 2019, Holyrood Unit 1 was operated for 677.6 hours, Holyrood Unit 2 was operated
20 for 744.0 hours, and Holyrood Unit 3 was operated for 742.8 hours. Total Holyrood generation
21 was 214.4 GWh.

22

23 Stand-by units were operated for a total of 10.5 hours during the month. Total standby
24 generation was 0.4 GWh. No stand-by generation was used for water management.

25 Approximately 0.1 GWh was generated to supply Emergency Energy to Nova Scotia Power on

1 January 3, 2019, pursuant to the Interoperator’s Agreement⁷ between Newfoundland and
2 Labrador Hydro and Nova Scotia Power.⁸

3
4 Imports on the ML were used in January 2019 to offset thermal generation and increase
5 energy in storage. Total imported energy was 5.4 GWh.

6
7 A total of 66.9 GWh was delivered to the system via the LIL in January 2019 as a result of
8 testing activity.

9

10 **5.0 Unit Deratings**

11 Holyrood Unit 1 was capable of 162 MW for the month of January 2019. Load was limited by
12 high opacity at loads above 162 MW, indicating insufficient combustion air at the fuel oil
13 burners. The boiler contractor for Hydro further studied the load limitation on this unit in
14 January 2019. On January 25, 2019, the boiler contractor made recommendations that, if
15 implemented, could increase the available load. On January 9, 2019, the unit was taken off-
16 line to repair a leak that had developed in the fuel oil supply line to the burners. Following
17 investigation a failed section of pipe was replaced and the unit was returned to service on
18 January 10, 2019. On January 29, 2019, the unit was taken off-line for a maintenance outage
19 to replace a fuel oil pump and the mass flow meter. The unit was returned to service ahead of
20 schedule on February 1, 2019, with load capability to be determined pending a load test.

21

22 Holyrood Unit 2 was capable of operating at full capability during the month of January 2019.

23

24 Holyrood Unit 3 was capable of operating at full load for the month of January 2019. On
25 January 13, 2019, the unit tripped due to a component failure in the distributed control
26 system. The failed component was replaced and the unit was returned to service in

⁷ Article 5, Schedules A3 and C9.

⁸ A copy of the Interconnection Operators Agreement (dated July 31, 2014) between Hydro and Nova Scotia Power was attached as Appendix "C" to Hydro’s correspondence to the Board on July 5, 2017 with updates and information regarding the Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System.

1 approximately one hour. On January 18, 2019, the unit was de-rated to 50 MW for
2 approximately four hours while work was completed on variable frequency drive (“VFD”)
3 power cells in both the East and the West forced draft fan drives. On January 25, 2019, the
4 unit was again de-rated to 50 MW for 4.5 hours for completion of work on the West VFD fan
5 drive. It was then determined that a fibre optic cable requires replacement on this drive.
6 Procurement of the cable is in progress and it will be replaced at the next opportunity.

7

8 The Stephenville gas turbine remains available at full capacity (50 MW).

9

10 The Hardwoods gas turbine was returned to full capacity (50 MW) on December 12, 2018
11 following replacement of engine s/n 202204 with a spare. Detailed inspection has been
12 completed and the repair is ongoing. It is now expected that the engine will be returned and
13 made available as a spare in late February 2019.