

November 13, 2018

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 – October 2018

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 and 29, 2016.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley Walsh
Senior Legal Counsel – Regulatory
SW/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

October 2018

November 13, 2018

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 (“Board”) directed
 3 Newfoundland and Labrador Hydro (“Hydro”) to file a biweekly 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 derating.”*

9
 10 In July 2016, the Board indicated that a monthly report would henceforth be sufficient. This
 11 report includes data for October 2018.

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	2018 (GWh)	2017 (GWh)	21-Year Average (GWh)	2018 Minimum Storage Target (GWh)	Maximum Operating Level (GWh)	Percent of Maximum Operating Level
31 Oct 2018	1,672	1,480	1,885	1,095	2,452	68%

16 Reservoir inflows in October were approximately 225% above average. To date, 2018 inflows
 17 have been 25% above average.

18
 19 The aggregate reservoir storage level on October 31, 2018 was 1,672 GWh, 32% below the
 20 seasonal Maximum Operating Level and 53% above the minimum storage level. This storage
 21 level compares with the 21-year average storage level at the end of October of 1,885 GWh. At
 22 the end of October 2017, the aggregate storage level was 1,480 GWh.

- 1 Figure 1 plots the 2017 and 2018 storage levels with the minimum storage target, maximum
- 2 operating level, and the 21-year average aggregate storage for comparison.

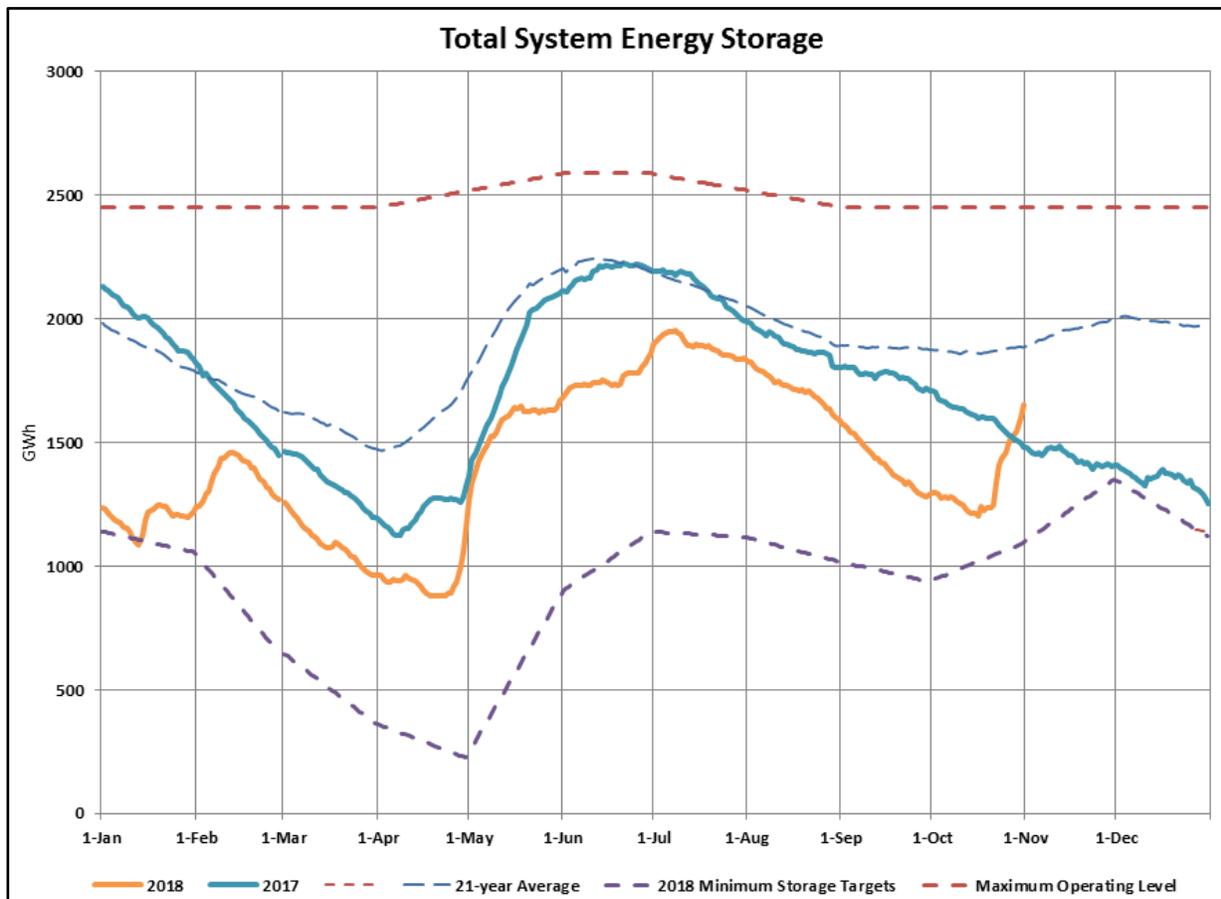


Figure 1: Total System Energy Storage – October 31, 2018

3 3.0 Production by Plant

- 4 Production during October 2018 by plant and unit, both hydraulic and thermal, is provided in
- 5 Table 2. Quantities imported are also provided.

Table 2: Generation Production – October 1, 2018 to October 31, 2018¹

	Generation, GWh	Year to Date, GWh
Newfoundland and Labrador Hydro - Hydro Generation		
Bay d'Espoir Plant		
Unit 1	41.4	382.0
Unit 2	39.8	310.1
Unit 3	23.5	301.3
Unit 4	16.7	186.7
Unit 5	20.5	165.1
Unit 6	16.5	193.5
Unit 7	<u>47.5</u>	<u>786.4</u>
<i>Total Bay d'Espoir Plant</i>	206.0	2325.1
Upper Salmon Plant	37.9	472.2
Granite Canal Plant	20.8	201.2
Hinds Lake Plant	14.4	269.9
Cat Arm Plant		
Unit 1	45.2	351.3
Unit 2	<u>46.3</u>	<u>364.0</u>
<i>Total Cat Arm Plant</i>	91.5	715.3
Paradise River	3.9	30.5
Star Lake Plant	10.6	115.5
Rattle Brook Plant	1.8	11.9
Nalcor Exploits Plants	38.2	473.2
Mini Hydro	0.3	2.4
Total Hydro Generation	425.3	4617.2
Newfoundland and Labrador Hydro - Thermal Generation		
Holyrood		
Unit 1	19.3	295.7
Unit 2	61.5	348.0
Unit 3	<u>0.0</u>	<u>176.4</u>
<i>Total</i>	80.9	820.1
Holyrood Gas Turbine and Diesels	1.4	46.9
Hardwoods Gas Turbine	0.1	3.9
Stephenville Gas Turbine	0.1	1.2
Other Thermal	0.0	1.1
Total Thermal Generation	82.5	873.1
Purchases		
Requested Newfoundland Power and Vale	0.0	0.7
Corner Brook Pulp & Paper Secondary	0.4	11.0
Corner Brook Pulp & Paper Cogeneration	5.8	57.8
Wind Purchases	15.7	167.9
Maritime Link Imports ²	24.9	58.3
New World Dairy	0.3	2.3
Labrador Island Link Imports ²	0.0	8.2
Total Purchases	47.0	306.1
Total³	554.8	5796.4

¹ Gross generation.

² Includes purchases as a result of testing activity.

³ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total and addition of individual components due to rounding.

1 **4.0 Thermal Production and Imports**

2 Units 1 and 2 at Holyrood were required to generate during October 2018 to meet Hydro's
3 customer and system reliability requirements. Unit 1 was operated for 289.9 hours. Unit 2 was
4 operated for 743.5 hours. Unit 3 was not operated in October. Total Holyrood generation was
5 80.9 GWh.

6
7 Standby units were operated for a total of 42.3 hours during the month. Total standby
8 generation was 1.6 GWh. No standby generation was used for water management.

9
10 During September 2018, as part of Hydro's water management process, the Vista Decision
11 Support System recommended the need for additional energy production to supplement
12 hydraulic production given low reservoir levels. As Water Management continued its analysis,
13 an increased number of historic sequences showed the need for additional energy production
14 to mitigate low system storage. In October 2018, to be proactive and to reduce overall system
15 costs throughout winter 2018-2019, energy was imported over the Maritime Link at
16 opportunities identified to be economic. This reduced generation requirements from the
17 Holyrood Thermal Generating Station. Significant rainfall events over all reservoir basins
18 occurred in late October 2018 that increased the system energy in storage to 1,672 GWh at the
19 end of October 2018, from a system storage level of 1,241 GWh on October 16, 2018; a net
20 increase in energy in storage of 431 GWh. At the end of October 2018, system energy in storage
21 was 53% above the minimum storage target of 1,095 GWh. Total imported energy was 24.9
22 GWh. There was no energy delivered to the system via the Labrador-Island Link in October
23 2018.

24
25 **5.0 Unit Deratings**

26 Holyrood Unit 1 was returned to service on October 19, 2018 after completion of the planned
27 annual outage. It is derated to 140 MW until online safety valve testing can be completed.
28 Operating data observed at 140 MW indicated that this unit is capable of full or near full load.
29 This will be proven with a load test once the safety valve testing is completed.

1 Holyrood Unit 2 was capable of operating at full capacity during the month of October 2018, as
2 proven during a load test completed on October 11, 2018. On October 16, 2018 the unit was
3 derated to 70 MW for approximately eight hours due to a trip of the variable frequency drive
4 on the east forced draft fan.

5
6 Startup activities to return Holyrood Unit 3 to generation service began on October 31, 2018. It
7 is expected that the work completed during the annual outage to correct air flow issues will
8 result in this unit returning to full load capability as soon as the system conditions permit.

9
10 The Stephenville Gas Turbine continues to be derated to 25 MW as a result of power turbine
11 bearing vibration. Following the replacement of the engine, bellows, and power turbine rear
12 bearing, unit testing was performed and the unit was returned to service on October 9, 2018,
13 following a four-hour test run. On October 10, 2018 End A was unable to be placed online due
14 to power turbine vibration. End A remains unavailable until the cause of the vibration issue can
15 be identified.

16
17 The Hardwoods Gas Turbine remains available at full capacity (50 MW).