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February 11, 2020

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: Monthly Energy Supply Report for the Island Interconnected System for January 2020

Newfoundland and Labrador Hydro ("Hydro") acknowledges the correspondence from the Board of Commissioners of Public Utilities ("Board") of today's date, in which the Board approves Hydro's request for a change in the monthly filing date of the Energy Supply Report for the Island Interconnected System. Although the Board confirmed that the scheduling change also applied to this month's report, Hydro had proceeded with the preparation of the report for a February 10th deadline pending receipt of the Board's decision regarding Hydro's request for scheduling change. As noted in Hydro's February 10, 2020 correspondence, the completion of the report was delayed slightly due to a discrepancy in the supporting information. This has now been clarified and corrected.

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report for the Island Interconnected System.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

A handwritten signature in blue ink, appearing to read 'Shirley A. Walsh', written over a horizontal line.

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/las

Encl.

cc: **Newfoundland Power**
Mr. Gerard M. Hayes

Consumer Advocate
Mr. Dennis M. Browne, Q.C, Browne Fitzgerald Morgan & Avis

Ms. C. Blundon
Public Utilities Board

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Industrial Customer Group

Mr. Paul L. Coxworthy, Stewart McKelvey
Mr. Denis J. Fleming, Cox & Palmer

Praxair Canada Inc.

Ms. Sheryl E. Nisenbaum

ecc: **Board of Commissioners of Public Utilities**

Ms. Jacqui Glynn
PUB Official Email

Newfoundland Power

Regulatory Email

Consumer Advocate

Mr. Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis
Ms. Sarah G. Fitzgerald, Browne Fitzgerald Morgan & Avis
Ms. Bernice Bailey, Browne Fitzgerald Morgan & Avis

Industrial Customer Group

Mr. Dean A. Porter, Poole Althouse

Teck Resources Limited

Mr. Shawn Kinsella



Monthly Energy Supply Report for the Island Interconnected System for January 2020

February 11, 2020

A report to the Board of Commissioners of Public Utilities



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1.0 Introduction

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

- 1) System Hydrology Report, as contained in Hydro's Quarterly report;
- 2) The thermal plant operated in support of hydrology;
- 3) Production by plant/unit; and
- 4) Details of any current or anticipated long-term derating.

In July 2016, the Board indicated that a monthly report would thereafter be sufficient. This report covers data for January 2020.

2.0 System Hydrology

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

Table 1: System Hydrology Storage Levels

Date	2020 (GWh)	2019 (GWh)	20-Year Average (GWh)	Minimum Storage Limit (GWh)	Maximum Operating Level (GWh)	Maximum Operating Level (%)
January 31, 2020	1,286	1,517	1,766	875	2,452	52%

Reservoir inflows in January 2020 were approximately 45% of average for the month. To date, 2020 inflows have been 45% of average.

The aggregate reservoir storage level on January 31, 2020, was 1,286 GWh, 48% below the seasonal maximum operating level and 47% above the minimum storage limit.¹ The current storage level is shown in Figure 1 in relation to the 20-year average storage level for the end of January of 1,766 GWh. At the end of January 2019 aggregate storage level was 1,517 GWh.

¹ Minimum storage targets are developed annually to provide guidance in the reliable operation of Hydro’s major reservoirs – Victoria, Meelpaeg, Long Pond, Cat Arm, and Hinds Lake. The minimum storage target is designed to show the minimum level of aggregate storage required such that if there was a repeat of Hydro’s critical dry sequence, or other less severe sequence, Hydro’s load can still be met through the use of the available hydraulic storage, maximum generation at Holyrood Thermal Generating Station (“Holyrood TGS”), and non-firm imports. Hydro’s long-term critical dry sequence is defined as January 1959 to March 1962 (39 months). Other dry periods are also examined during the derivation to ensure that no other shorter term historic dry sequence could result in insufficient storage.

1 Hydro actively manages its resources to ensure its ability to reliably supply customers with least-cost
2 energy. Hydro began generating thermally above minimum on January 16, 2020, to help slow the
3 decline of the Long Pond reservoir, the head pond for the Bay d’Espoir Generating Station. Imports
4 continue to be used to economically supplement or offset generation from the Holyrood TGS, to the
5 extent that they are technically feasible. Standby units have not been used for water management
6 purposes and Hydro does not currently foresee using production from standby generation to support
7 reservoir levels.

8 Figure 1 plots the 2019 and 2020 storage levels, maximum operating level storage, and the 20-year
9 average aggregate storage for comparison. The minimum storage limits were previously established to
10 the end of April 2020 and Hydro anticipates that they will be updated for the remainder of 2020 in the
11 February 2020 report.

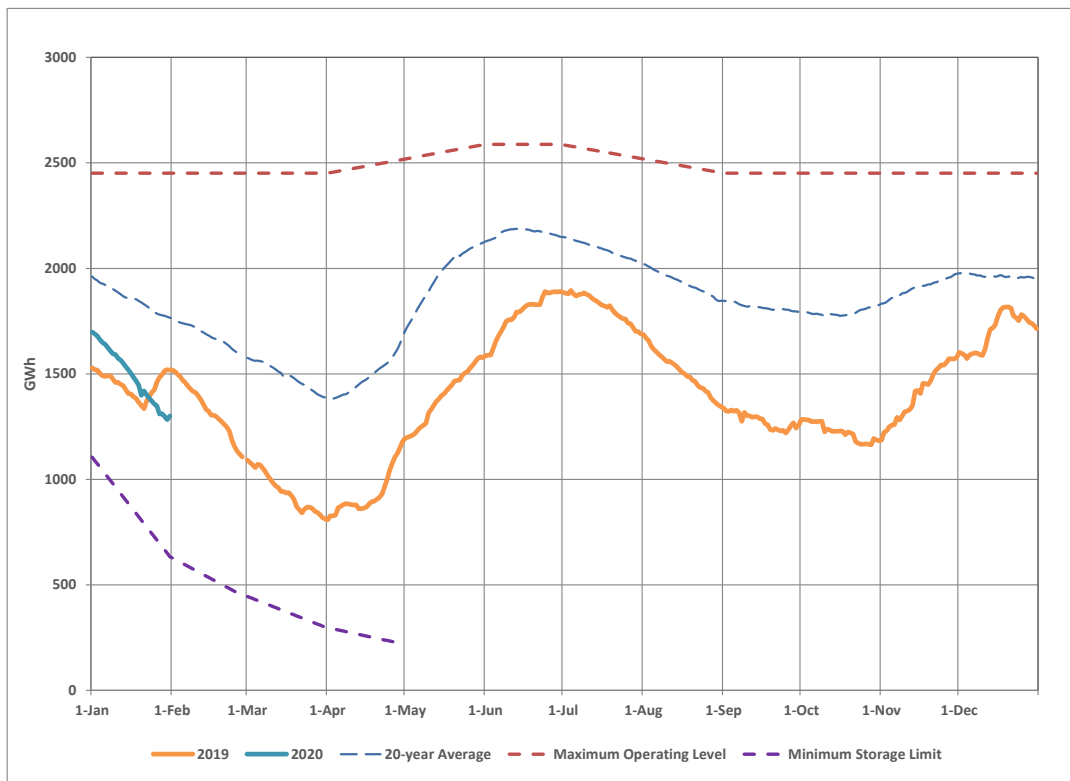


Figure 1: Total System Energy Storage for 2020

1 3.0 Purchases and Production by Plant

- 2 Production during January 2020 by plant and unit, both hydraulic and thermal, is provided in Table 2.
 3 Quantities of purchases and imports are also provided in Table 2.

Table 2: Purchases and Generation Production for January 2020²

	Generation (GWh)	Year to Date (GWh)
Hydro Generation (Hydro)		
Bay d'Espoir Plant		
Unit 1	44.1	44.1
Unit 2	43.9	43.9
Unit 3	42.4	42.4
Unit 4	30.2	30.2
Unit 5	30.7	30.7
Unit 6	28.6	28.6
Unit 7	96.5	96.5
Subtotal Bay d'Espoir Plant	316.5	316.5
Upper Salmon Plant	57.0	57.0
Granite Canal Plant	24.0	24.0
Hinds Lake Plant	45.4	45.4
Cat Arm Plant		
Unit 1	43.0	43.0
Unit 2	44.3	44.3
Subtotal Cat Arm Plant	87.3	87.3
Paradise River	1.3	1.3
Star Lake Plant	12.9	12.9
Rattle Brook Plant	0.2	0.2
Nalcor Exploits Plants	51.0	51.0
Mini Hydro	0.0	0.0
Total Hydro Generation	595.7	595.7
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	68.0	68.0
Unit 2	64.3	64.3
Unit 3	69.0	69.0
Subtotal Holyrood TGS Units	201.2	201.2
Holyrood Gas Turbine and Diesels	2.0	2.0
Hardwoods Gas Turbine	0.1	0.1
Stephenville Gas Turbine	0.3	0.3
Other Thermal	0.0	0.0
Total Thermal Generation	203.6	203.6
Purchases		
Requested Newfoundland Power and Vale		
Corner Brook Pulp and Paper	0.0	0.0
Capacity Assistance	0.0	0.0
Firm Energy PPA	0.0	0.0
Secondary	6.6	6.6
Co-Generation	3.4	3.4
Subtotal Corner Brook Pulp and Paper	10.0	10.0
Wind Purchases	12.5	12.5
Maritime Link Imports ³	20.1	20.1
New World Dairy	0.2	0.2
Labrador-Island Link Imports ⁴	0.0	0.0
Total Purchases	42.8	42.8
Total⁵	842.1	842.1

² Gross generation.

³ Includes energy flows as a result of purchases and inadvertent energy.

⁴ Includes purchases as a result of testing activity.

⁵ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.

4.0 Thermal Production and Imports

Units 1, 2, and 3 at the Holyrood TGS were required to generate during January 2020 to reliably meet Hydro's customer demand requirements. While system energy in storage remained above the minimum storage target, reservoir storage at Long Pond, the head pond for the Bay d'Espoir generating station continued to decline. As such, the use of thermal generation above minimum production was required by January 16, 2020. A combined hourly target of 300 MW was set for thermal generation and imports over the Maritime Link, when available and economic. Below average inflows persisted through the month, resulting in the combined hourly target increasing to 350 MW on January 21, 2020, and again to 400 MW on January 28, 2020. The combined thermal generation and import hourly target of 400 MW remained in place through the remainder of the month.

In January 2020, Holyrood Unit 1 was operated for 723.8 hours, Holyrood Unit 2 was operated for 699.2 hours, and Holyrood Unit 3 was operated for 744 hours. Total Holyrood TGS generation was 201.2 GWh.

Standby units were operated for a total of 58.5 hours during the month; therefore total standby generation was 2.4 GWh. No stand-by generation was used for water management.

As detailed in Section 3.0, Hydro began generating thermally above minimum production levels to slow the decline of Long Pond on January 16, 2020. Imports on the Maritime Link were used in January 2020 to offset the use of thermal units and to support levels at the Long Pond reservoir. It was further determined that the balance of ponded energy was the least-cost option for acquiring additional system energy.⁶ As such, Hydro elected to purchase the balance of the ponded energy totaling 3.9 GWh pursuant to the Pilot Agreement for the Optimization of Hydraulic Resources. This reduced the ponded balance to 0 GWh. Total imported energy over the Maritime Link was 20.1 GWh. There was no energy imported over the LIL in January 2020 due to the continued planned outage.

5.0 Unit Deratings

Holyrood TGS Unit 1 was taken off line from January 25 to January 26 for a planned maintenance outage to change brushes on the generator and to complete an air heater wash. Otherwise, the unit was online and capable of operating at full load through January 2020.

⁶ The Pilot Agreement for the Optimization of Hydraulic Resources was approved in Board Order No. P.U. 49(2018).

- 1 Holyrood TGS Unit 2 tripped on January 17 due to a buildup of ice on the unit transformer during a
- 2 severe winter storm. The unit was returned to service on January 19. On January 28, the unit tripped
- 3 while personnel initiated a start on the west boiler feed pump. The unit was returned to service two
- 4 hours later. Otherwise, the unit was online and capable of operating at full load through January 2020.

- 5 Holyrood TGS Unit 3 was online and capable of operating at full load throughout January 2020.
- 6 The Stephenville Gas Turbine was returned to full capability on January 31, 2020.⁷

- 7 The Hardwoods Gas Turbine remained available at full capacity for the entire month of January 2020.

⁷ Additional information was provided in Hydro's "2019–2020 Winter Readiness Planning Report – Further Update," February 5, 2020.