

March 17, 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 February 2020

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report for the Island Interconnected System as directed by the Board of Commissioners of Public Utilities.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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

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
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Consumer Advocate

Mr. Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis
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Mr. Dean A. Porter, Poole Althouse

Teck Resources Limited

Mr. Shawn Kinsella



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

March 17, 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 provides data for February 2020.

2.0 System Hydrology

Reservoir inflows in February 2020 were approximately 45% of the month’s historical average. Inflows in 2020 have been 45% of the year to date historical average.

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 (%)
February 29, 2020	951	1,089	1,585	535	2,452	39%

The aggregate reservoir storage level on February 29, 2020 was 951 GWh, 61% below the seasonal maximum operating level and 78% 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 February of 1,585 GWh. At the end of February 2019 the aggregate storage level was 1,089 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 The first snow survey of 2020 was completed in mid-February. The survey indicated that, for the system
 2 as a whole, snow water equivalent depth was approximately 75% of average and equivalent energy was
 3 approximately 71% of average. Based on the available snowpack data, the snowpack was approximately
 4 89.7 mm of snow water equivalent at Bay d’Espoir,² approximately 97.9 mm at Hinds Lake, and
 5 approximately 192.8 mm at Cat Arm.

6 Hydro actively manages its resources to ensure its ability to reliably supply customers with least-cost
 7 energy. Hydro continued generating thermally above minimum throughout February 2020 to help slow
 8 the decline of the Long Pond reservoir.³ Imports continue to be used to economically supplement or
 9 offset generation from the Holyrood TGS, to the extent that they are technically feasible. Standby units
 10 have not been used for water management purposes and Hydro does not currently foresee using
 11 production from standby generation to support reservoir levels.

12 Figure 1 plots the 2019 and 2020 storage levels, maximum operating level storage, and the 20-year
 13 average aggregate storage for comparison. The minimum storage limits are established to the end of
 14 April 2020. Hydro continues to gather the information necessary to establish the limits for the
 15 remainder of 2020 for implementation prior to the end of April 2020.

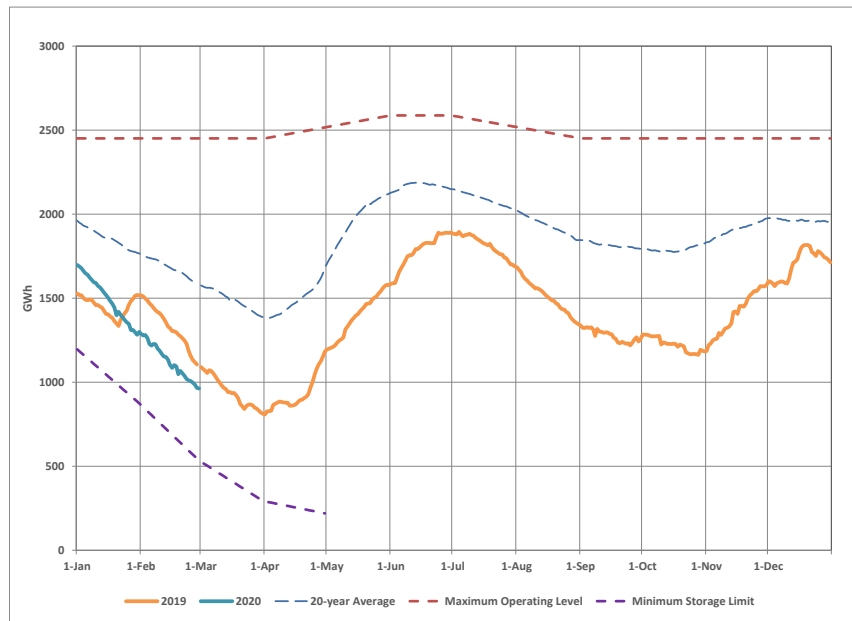


Figure 1: Total System Energy Storage for 2020

² The snowpack value at the Bay d’Espoir location represents a weighted total.

³ Long Pond is the head pond for the Bay d’Espoir Generating Station.

3.0 Purchases and Production by Plant

Production during February 2020 by plant and unit, both hydraulic and thermal, is provided in Appendix A. Quantities of purchases and imports are also provided in Appendix A.

4.0 Thermal Production and Imports

Units 1, 2, and 3 at the Holyrood TGS were required to generate during February 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 continued to decline. As such, thermal generation above minimum production was required through February 2020. A combined hourly target of 400 MW for thermal generation and, when available and economic, imports over the Maritime Link was set on January 28, 2020 and remained in place until February 25, 2020. Below average inflows persisted through the month and resulted in an increase to the combined hourly target to 425 MW on February 25, 2020. The hourly target of 425 MW remained in place through the remainder of the month.

In February 2020, Holyrood Unit 1 was operated for 696.0 hours, Holyrood Unit 2 was operated for 675.0 hours, and Holyrood Unit 3 was operated for 694.4 hours. Total Holyrood TGS generation was 198.4 GWh.

Standby units were operated for a total of 8.5 hours during the month producing a total of 0.4 GWh. No stand-by generation was used for water management.

Imports on the Maritime Link were used in February 2020 to offset the use of thermal units and to support levels at the Long Pond reservoir. Total imported energy over the Maritime Link was 74.3 GWh. The ponded balance remains at zero GWh. There was no energy imported over the Labrador-Island Link in February 2020 due to the continued outage.

5.0 Unit Deratings

Holyrood TGS Unit 1 operated at full capability through February 2020.

Holyrood TGS Unit 2 was taken off line for a planned maintenance outage from February 8 to 9, 2020 to complete an air heater wash and replace generator brushes. Otherwise, the unit was online and capable of operating at full load throughout February 2020.

- 1 Holyrood TGS Unit 3 tripped on February 16, 2020 when switching from a failed feed water flow
- 2 transmitter to the standby transmitter. The unit was returned to service within two hours. On February
- 3 21, 2020 the unit was derated by 5 MW when the south vacuum pump failed. On February 22, 2020 the
- 4 unit was returned to full load capability after repairing the vacuum pump and completing a condenser
- 5 backwash. Otherwise, the unit was online and capable of operating at full load throughout February
- 6 2020.

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

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



Appendix A

Generation Production and Purchases

Generation Production and Purchases¹

February 1 to February 29, 2020

	<u>Generation (GWh)</u>	<u>Year to Date (GWh)</u>
Hydro Generation (Hydro)		
Bay d'Espoir Plant		
Unit 1	39.9	84.0
Unit 2	39.6	83.5
Unit 3	36.1	78.5
Unit 4	13.8	44.0
Unit 5	19.2	50.0
Unit 6	17.1	45.6
Unit 7	80.4	176.9
Subtotal Bay d'Espoir Plant	246.0	562.5
Upper Salmon Plant	56.2	113.2
Granite Canal Plant	21.4	45.5
Hinds Lake Plant	41.1	86.5
Cat Arm Plant		
Unit 1	37.0	80.0
Unit 2	38.1	82.4
Subtotal Cat Arm Plant	75.0	162.4
Paradise River	1.7	3.0
Star Lake Plant	12.2	25.0
Rattle Brook Plant	0.1	0.3
Nalcor Exploits Plants	47.8	98.8
Mini Hydro	0.0	0.0
Total Hydro Generation	501.5	1,097.2
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	67.4	135.4
Unit 2	65.1	129.3
Unit 3	66.0	134.9
Subtotal Holyrood TGS Units	198.4	399.6
Holyrood Gas Turbine and Diesels	0.3	2.4
Hardwoods Gas Turbine	0.0	0.1
Stephenville Gas Turbine	0.1	0.3
Other Thermal	0.0	0.0
Total Thermal Generation	198.8	402.5
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
Corner Brook Pulp and Paper		
Capacity Assistance	0.0	0.0
Firm Energy PPA	0.0	0.0
Secondary	2.7	9.4
Co-Generation	4.6	8.0
Subtotal Corner Brook Pulp and Paper	7.3	17.3
Wind Purchases	16.3	28.8
Maritime Link Imports ²	74.3	94.4
New World Dairy	0.2	0.3
Labrador-Island Link Imports ³	0.0	0.0
Total Purchases	98.1	140.9
Total⁴	798.5	1,640.6

¹ Gross generation.

² Includes energy flows as a result of purchases and inadvertent energy.

³ Includes purchases as result of testing activity.

⁴ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.