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March 17, 2021

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 2021

Enclosed please find 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/kd

Encl.

ecc: **Board of Commissioners of Public Utilities**
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Monthly Energy Supply Report for the Island Interconnected System for February 2021

March 17, 2021



A report to the Board of Commissioners of Public Utilities

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Appendix A: Production and Purchases

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 2021.

2.0 System Hydrology

Reservoir inflows in February 2021 were approximately 77% of the month’s historical average. Inflows in 2021 remain 78% 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

	2021	2020	20-Year Average	Minimum Storage Limit	Maximum Operating Level	Percentage of Maximum Operating Level
Date	(GWh)	(GWh)	(GWh)	(GWh)	(GWh)	(%)
28-Feb-2021	1,517	951	1,543	518	2,452	62

The aggregate reservoir storage level on February 28, 2021 was 1,517 GWh, which is 38% below the seasonal maximum operating level and 193% above the minimum storage limit.¹ The current storage

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, 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 level is shown in Figure 1 in relation to the 20-year average storage level for the end of February of
- 2 1,543 GWh. At the end of February 2020, the aggregate storage level was 951 GWh.
- 3 Figure 1 plots the 2020 and 2021 storage levels, maximum operating level storage, and the 20-year
- 4 average aggregate storage for comparison.

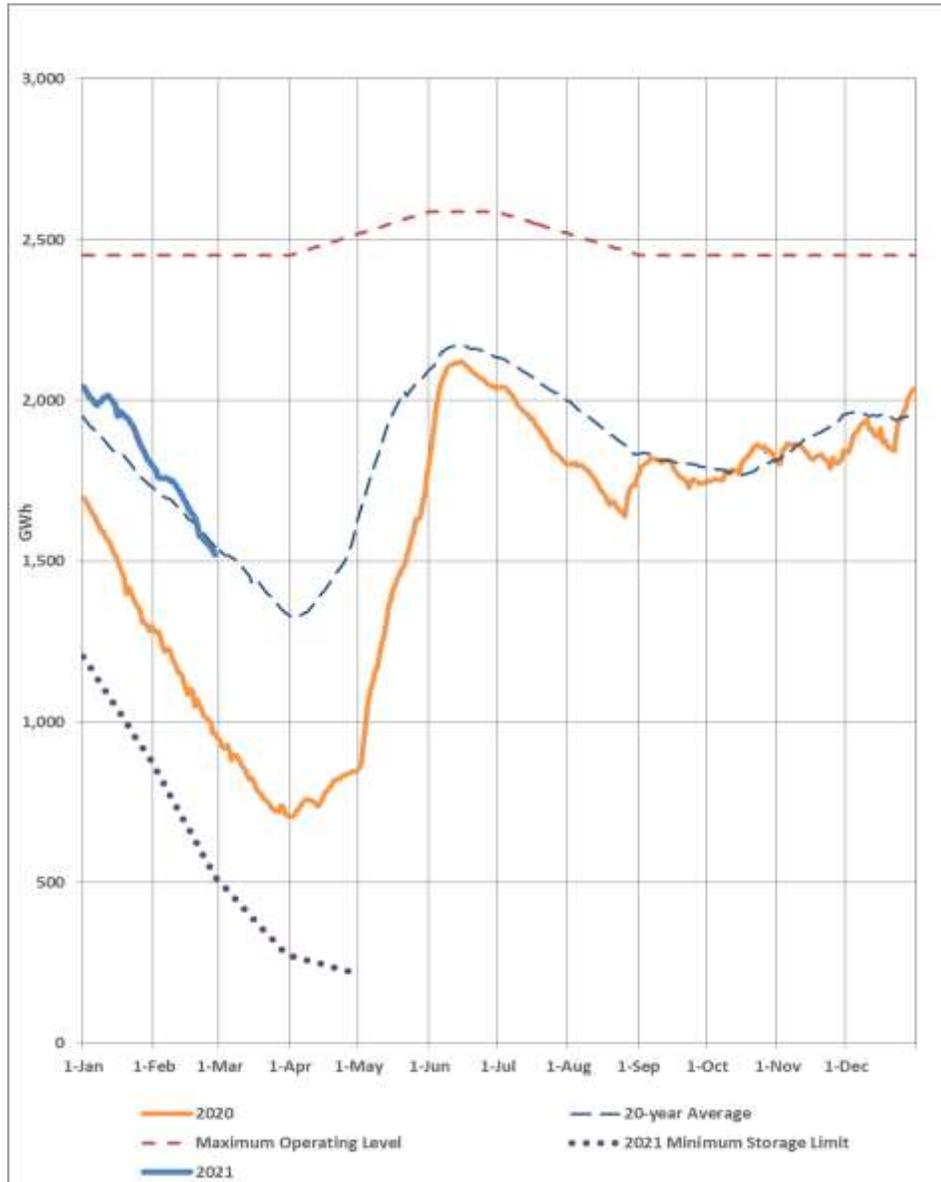


Figure 1: Total System Energy Storage²

² As reported in the April 2020 Monthly Energy Supply Report, filed with the Board on May 19, 2020, Hydro established minimum storage limits to April 2021 in consideration of potential delays in the availability of the Labrador-Island Link to deliver energy to the Island Interconnected System.

3.0 Production and Purchases

Appendix A provides a breakdown of power purchases, including imports, and production by plant during February 2021.

4.0 Thermal Production and Imports

Units 1, 2, and 3 at the Holyrood Thermal Generating Station (“Holyrood TGS”) were required to generate during February 2021 to reliably meet Hydro’s customer demand requirements. Unit 1 was operated for 633.5 hours, Holyrood TGS Unit 2 was operated for 672.0 hours, and Holyrood TGS Unit 3 operated for 659.3 hours. Total Holyrood TGS production was 146.4 GWh.

Standby units were operated for a total of 57.5 hours during the month. Total standby generation during the month was 1.4 GWh. Standby generation was not required to support reservoir storage.

In February 2021, there were no ponding imports over the Maritime Link; however, imports of 0.08 GWh occurred to offset thermal generation. The ponded balance at month end was -7.3 GWh. Testing activities continued on the Labrador-Island Link in February 2021, resulting in the delivery of 23.5 GWh of energy at Soldiers Pond. Total exports over the Maritime Link for the month of February were 7.5 GWh.³

5.0 Unit Deratings

Holyrood TGS Unit 1 operated at full capability for the month of February 2021, with the exception of two outages. On February 15, 2021, the unit was taken off-line on a planned maintenance outage for approximately five hours to replace worn generator brushes. On February 21, 2021, the unit tripped due to a failure of a breaker in Power Centre C. The unit remained off-line for approximately 34 hours while the breaker was replaced.

Holyrood TGS Unit 2 operated at full capability for the month of February 2021, with the exception of a de-rating to 40 MW on February 13, 2021 to allow for calibration of new flame scanners on the burners.

Holyrood TGS Unit 3 tripped on February 1, 2021 while the west fan was out of service for planned maintenance to replace a cooling fan. The unit was restored approximately six hours later. On

³ Total exports include the provision of emergency and inadvertent energy to Nova Scotia Power Inc. and export activity conducted by Nalcor Energy Marketing.

1 February 22, 2021, the unit tripped as a result of an issue with the west fan variable frequency drive.
2 The unit was put back on line approximately 2.5 hours later with one fan in service resulting in a unit de-
3 rate to 40 MW. The unit continued to operate at 40 MW for 10 hours before being restored at full
4 capability. On February 24, 2021, the east fan variable frequency drive tripped twice, both times
5 resulting in a unit de-rate to approximately 40 MW for a total of about five hours. The trip on February
6 22 and both trips on February 24 are under investigation by the plant and Original Equipment
7 Manufacturer.

8 The Hardwoods Gas Turbine was available at full capacity for the entire month of February 2021 with
9 the exception of a planned outage February 10, 2021 for repairs to the glycol cooler fans.

10 The Stephenville Gas Turbine was available at full capacity for the entire month of February 2021 with
11 the exception of a planned outage on February 11, 2021 to check the coolant levels in the main lube oil
12 cooling system.

13 The Holyrood Gas Turbine was available at full capacity for the full month of February 2021.

Appendix A

Production and Purchases

Production and Purchases⁴

	February 1, 2021 to February 28, 2021 (GWh)	Year-to-Date February 28, 2021 (GWh)
Hydro Generation (Hydro)		
Bay d'Espoir Plant		
Unit 1	38.8	81.6
Unit 2	38.6	81.1
Unit 3	33.4	70.2
Unit 4	20.2	39.7
Unit 5	26.8	57.3
Unit 6	22.1	44.2
Unit 7	81.6	174.9
Subtotal Bay d'Espoir Plant	261.4	548.9
Upper Salmon Plant	49.4	103.1
Granite Canal Plant	22.1	46.5
Hinds Lake Plant	42.9	81.1
Cat Arm Plant		
Unit 1	40.1	77.9
Unit 2	41.3	80.1
Subtotal Cat Arm Plant	81.4	158.0
Paradise River	1.9	4.5
Star Lake Plant	11.5	23.8
Rattle Brook Plant	0.4	1.3
Nalcor Exploits Plants	47.2	101.9
Mini Hydro	0.0	0.0
Total Hydro Generation	518.1	1,069.1
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	47.3	103.1
Unit 2	50.9	106.7
Unit 3	48.1	64.4
Subtotal Holyrood TGS Units	146.4	274.1
Holyrood Gas Turbine and Diesels	1.0	1.3
Hardwoods Gas Turbine	0.2	0.2
Stephenville Gas Turbine	0.2	0.2
Other Thermal	0.0	0.0
Total Thermal Generation	147.8	275.9
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
Corner Brook Pulp and Paper		
Capacity Assistance	0.0	0.0
Firm Energy Power Purchase Agreement	0.0	0.0
Secondary	3.2	6.8
Co-Generation	4.5	9.9
Subtotal Corner Brook Pulp and Paper	7.7	16.6
Wind Purchases	18.5	35.9
Maritime Link Imports ⁵	0.3	0.5
New World Dairy	0.3	0.6
Labrador-Island Link Imports ⁶	23.5	84.0
Total Purchases	50.2	137.6
Total⁷	716.1	1,482.6

⁴ Gross generation.

⁵ Includes energy flows as a result of purchases and inadvertent energy.

⁶ Includes purchases as a result of testing activity as well as deliveries that are then exported over the Maritime Link.

⁷ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.