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February 17, 2022

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 2022

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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Newfoundland Power Inc.
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Teck Resources Limited
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Monthly Energy Supply Report for the Island Interconnected System for January 2022

February 17, 2022

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

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List of Appendices

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 January 2022.

2.0 System Hydrology

Reservoir inflows in January 2022 were approximately 240% above the month's 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	2022 (GWh)	2021 (GWh)	20-Year Average (GWh)	Minimum Storage Limit (GWh)	Maximum Operating Level (GWh)	Percentage of Maximum Operating Level (%)
31-Jan-2022	2,111	1,777	1,732	860	2,452	86

The aggregate reservoir storage level on January 31, 2022 was 2,111 GWh, which is 14% below the seasonal maximum operating level and 145% above the minimum storage limit.[1] The current storage

[1] Minimum storage limits 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 limit is designed to indicate 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.

level is shown in Figure 1 in relation to the 20-year average storage level for the end of January of 1,732 GWh. At the end of January 2021, the aggregate storage level was 1,777 GWh.

Figure 1 plots the 2021 and 2022 storage levels, minimum storage limits, maximum operating level storage, and the 20-year average aggregate storage for comparison.

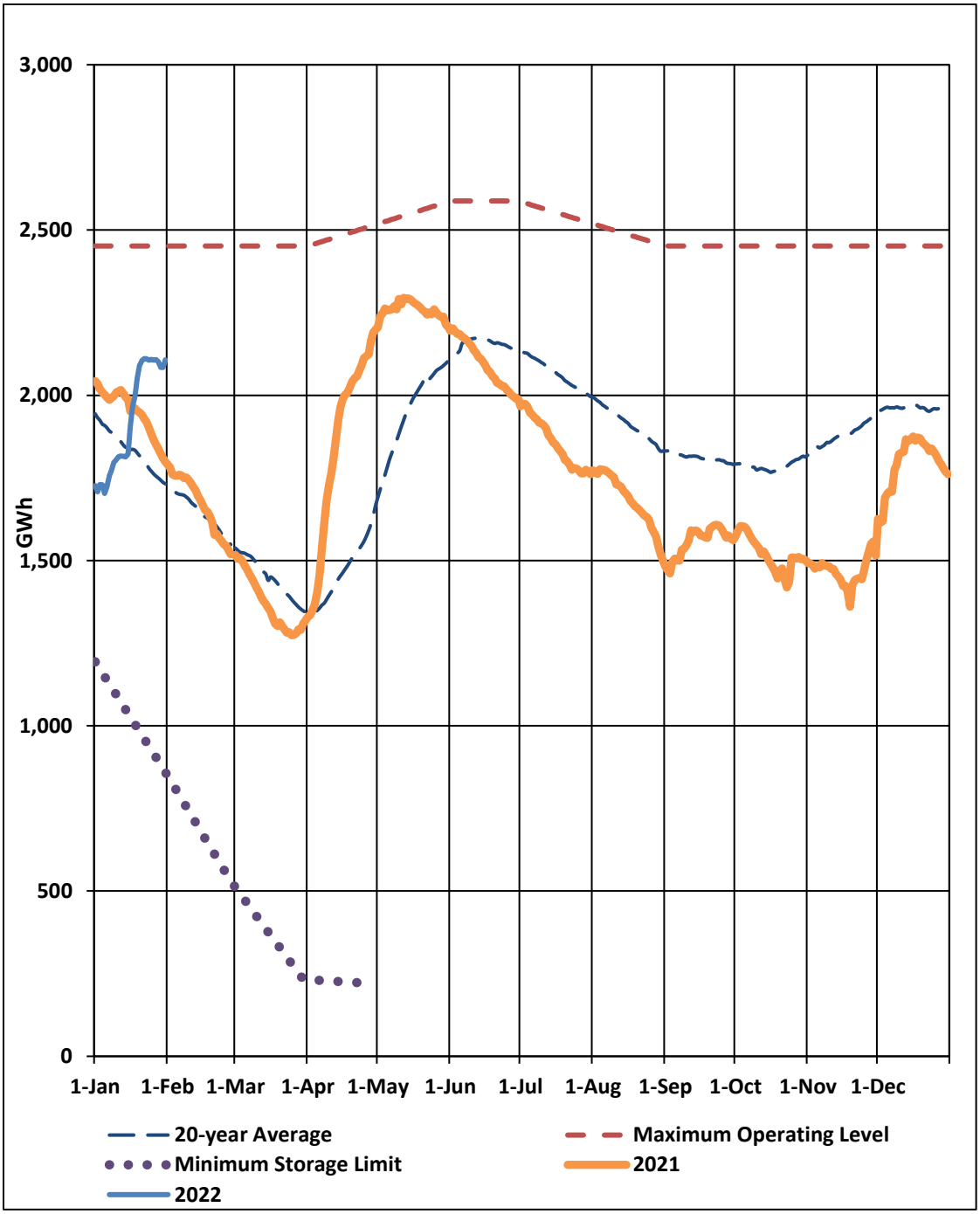

Figure 1: Total System Energy Storage

3.0 Production and Purchases

Appendix A provides a breakdown of power purchases, including imports, and production by plant during January 2022.

4.0 Thermal Production and Imports

Units 1, 2, and 3 at the Holyrood TGS were required to generate during January 2022 for system requirements. Holyrood TGS Unit 1 was operated for 744 hours, Holyrood TGS Unit 2 was operated for 456 hours, and Holyrood TGS Unit 3 was operated for 671 hours. Total energy production from Holyrood TGS during the month of January 2022 was 145.0 GWh.

Standby units were operated during the month to support system requirements and for testing purposes. Standby units were operated for a total of 5 hours during the month. Total standby production during the month was 0.1 GWh. Standby generation was not required to support reservoir storage.

Testing activities continued on the Labrador-Island Link ("LIL") in January 2022, resulting in the delivery of 162.3 GWh of energy at Soldiers Pond. Total metered energy over the Maritime Link to Nova Scotia for the month of January 2022 was 102.5 GWh.[2,3] Energy Marketing exported 100.0[4] GWh associated with the delivery of the Nova Scotia Block and Supplemental Energy.[5] Exports of 1.2 GWh occurred over the Maritime Link associated with ponding activities. The ponded balance at month end was -6.6 GWh. Through January 16, 2022 to January 27, 2022, a total of approximately 3.0 GWh[6] was generated to supply emergency energy to Nova Scotia Power, pursuant to the Interconnection Operators Agreement[7] between Hydro and Nova Scotia Power.[8]

[2] Totals include the provision of emergency and inadvertent energy to Nova Scotia Power Inc., provision of the Nova Scotia Block, the Supplemental Block, and export activity conducted by Energy Marketing including the export of spilled energy on Hydro's behalf.
[3] Physical delivery of the Nova Scotia Block will only occur when the LIL is online and able to transfer power.
[4] Due to power system operations, metered quantities may not match commercially transacted volumes.
[5] Nova Scotia Block and Supplemental Energy quantities are reflected at the point of commercial transaction.
[6] Total energy supplied amounted to 2,956 MWh.
[7] Article 5, Schedules A3 and C9.
[8] A copy of the agreement was provided in "The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Availability of Requested Information from Hydro, July 5, 2017 Update," Appendix C.

5.0 Unit Deratings

Holyrood TGS Unit 1 was online at full capability for the month of January 2022. From January 5, 2022 to January 6, 2022 the unit was derated to 90 MW due to a perceived issue with the east boiler feed pump tripping. The issue was resolved and the unit was returned to full capability.

Holyrood TGS Unit 2 was returned to service on January 13, 2022.[9] Due to the specifications on the spare transformer that was installed, the full load capability of Unit 2 with the replaced power transformer is 150 MW. On January 17, 2022 the unit was derated to 140 MW due to a negative sequence alarm on the transformer. This alarm was verified to be false in nature and related to a faulty relay. The relay function was moved to another relay and the unit capability of 150 MW was restored on January 21, 2022.

Holyrood TGS Unit 3 was online at full capability until January 28, 2022 when it was taken offline for a planned maintenance outage to correct leaks in the drum chemical feed line and the fuel oil set, and to perform other maintenance activities. The unit was returned to service at full capability, on schedule, on February 2, 2022.

The Hardwoods, Stephenville, and Holyrood Gas Turbines were available at full capacity for the entire month of January 2022.[10]

[9] Following replacement of the main power transformer T2.

[10] Due to limitations inherent in the design of combustion turbines, the output of combustion turbines may be reduced in the event that ambient temperatures exceed the threshold required for full rated output. This threshold is dependent on the design of each turbine.

Appendix A

Production and Purchases

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Table A-1: Generation and Purchases[1]

	January 1–31, 2022 (GWh)	YTD[2] January 31, 2022 (GWh)
Hydro Generation (Hydro)		
Bay d'Espoir Plant		
Unit 1	43.5	43.5
Unit 2	43.5	43.5
Unit 3	40.0	40.0
Unit 4	27.2	27.2
Unit 5	28.5	28.5
Unit 6	28.1	28.1
Unit 7	91.4	91.4
Subtotal Bay d'Espoir Plant	302.2	302.2
Upper Salmon Plant	54.0	54.0
Granite Canal Plant	25.9	25.9
Hinds Lake Plant	45.4	45.4
Cat Arm Plant		
Unit 1	33.6	33.6
Unit 2	33.4	33.4
Subtotal Cat Arm Plant	67.0	67.0
Paradise River	5.0	5.0
Star Lake Plant	11.0	11.0
Rattle Brook Plant	1.4	1.4
Nalcor Exploits Plants	46.0	46.0
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	**558.0**	**558.0**
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	56.8	56.8
Unit 2	35.7	35.7
Unit 3	52.5	52.5
Subtotal Holyrood TGS Units	145.0	145.0
Holyrood Gas Turbine and Diesels	0.1	0.1
Hardwoods Gas Turbine	0.0	0.0
Stephenville Gas Turbine	0.0	0.0
Other Thermal	0.1	0.1
Total Thermal Generation (Hydro)	**145.2**	**145.2**
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
CBPP[3]		
Capacity Assistance	0.0	0.0
Firm Energy Power Purchase Agreement	0.0	0.0
Secondary	1.8	1.8
Co-Generation	4.1	4.1
Subtotal CBPP	5.9	5.9
Wind Purchases	18.2	18.2
Maritime Link Imports[4]	0.0	0.0
New World Dairy	0.3	0.3
LIL Imports[5]	162.3	162.3
Total Purchases	**186.7**	**186.7**
Total[6]	**889.8**	**889.8**

[1] Gross generation.
[2] Year-to-date ("YTD").
[3] Corner Brook Pulp and Paper Limited ("CBPP").
[4] Includes energy flows as a result of purchases and inadvertent energy.
[5] Includes purchases as result of testing activity as well as deliveries that are then exported over the Maritime Link.
[6] Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.