newfoundland labrador hydro
a nalcor energy company

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November 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 October 2020**

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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PUB Official Email

**Newfoundland Power**
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**Consumer Advocate**
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Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis
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**Industrial Customer Group**
Paul L. Coxworthy, Stewart McKelvey
Denis J. Fleming, Cox & Palmer
Dean A. Porter, Poole Althouse

**Praxair Canada Inc**.
Sheryl E. Nisenbaum

**Teck Resources Limited**
Shawn Kinsella

# Monthly Energy Supply Report for the Island Interconnected System for October 2020

**November 17, 2020**

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**A report to the Board of Commissioners of Public Utilities**

# Contents



## 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 October 2020.

# 2.0 System Hydrology

Reservoir inflows in October 2020 were approximately 14% above the month's historical average. Inflows in 2020 to date have increased to 5% above the 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) | Percentage of Maximum Operating Level (%) |
|---|---|---|---|---|---|---|
| 31-Oct-2020 | 1,804 | 1,186 | 1,826 | 1,406 | 2,449 | 74 |

The aggregate reservoir storage level on October 31, 2020 was 1,804 GWh, which is 26% below the seasonal maximum operating level and 28% above the minimum storage limit.[1] The current storage level

[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.

is shown in Figure 1 in relation to the 20-year average storage level for the end of October of 1,826 GWh. At the end of October 2019, the aggregate storage level was 1,186 GWh.

Figure 1 plots the 2019 and 2020 storage levels, maximum operating level storage, and the 20-year average aggregate storage for comparison.

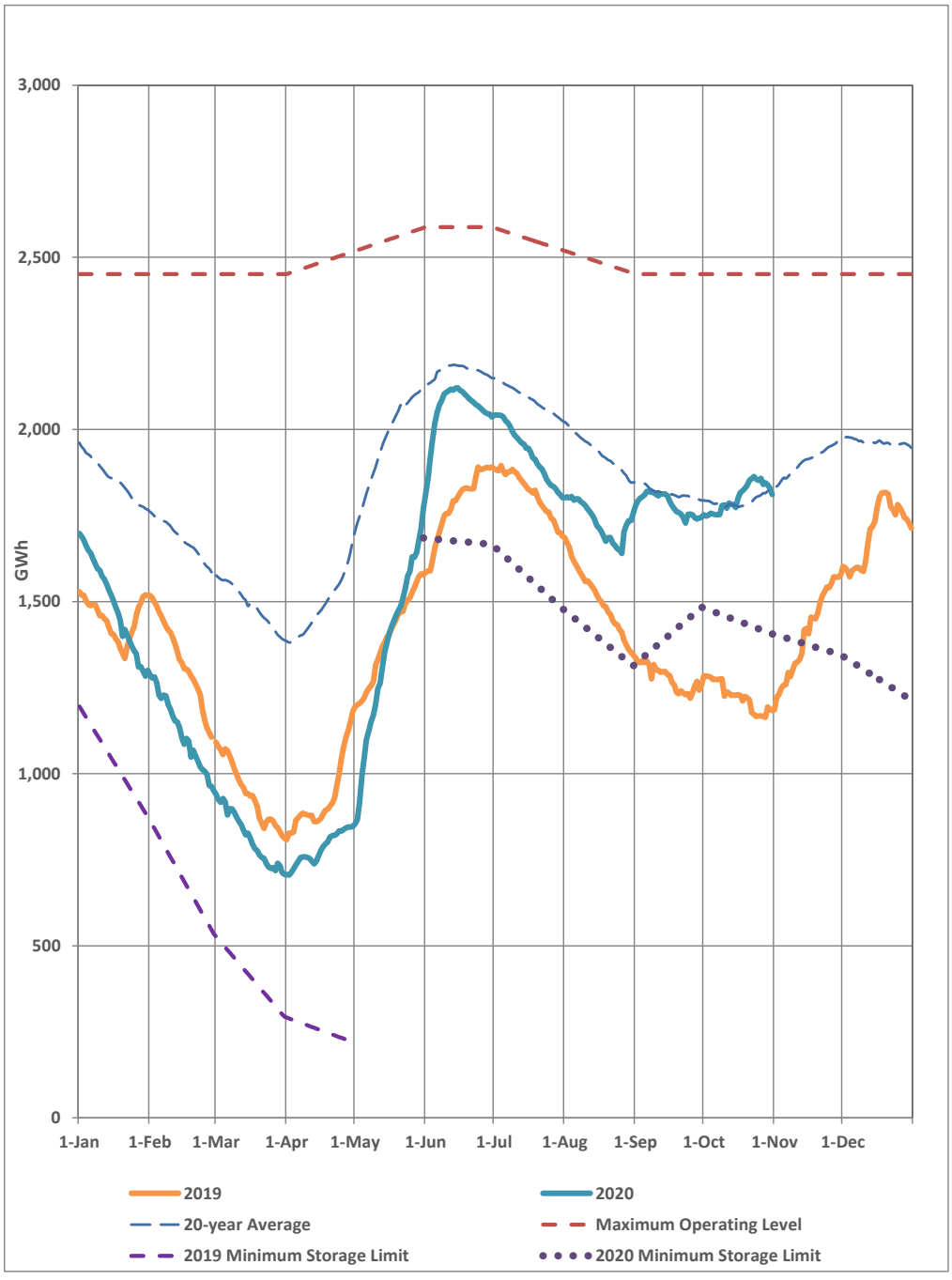


**Figure 1: Total System Energy Storage**

# 3.0 Production and Purchases

Appendix A provides a breakdown of power purchases, including imports, and production by plant during October 2020.

# 4.0 Thermal Production and Imports

In October 2020, Holyrood Thermal Generating Station ("Holyrood TGS") Unit 1 was operated for 340.8 hours, and Holyrood TGS Unit 2 was operated for 177.6 hours. Holyrood TGS Unit 3 was operated in synchronous condenser mode in all hours of October 2020 for system voltage and stability requirements. Total Holyrood TGS generation was 37.2 GWh.

Standby units were operated for a total of 26.7 hours during the month. Total standby generation during the month was 0.7 GWh. Standby generation was not required to support reservoir storage.

Imports and exports over the Maritime Link were used in October 2020 for ponding purposes. Imports of 4.9 GWh and exports of 2.9 GWh occurred in October 2020; resulting in a ponded balance of -1.9 GWh as of October 31, 2020. There was no energy imported over the Labrador-Island Link in October 2020 due to the continued outage.

# 5.0 Unit Deratings

Holyrood TGS Unit 1 was placed online on October 8, 2020 with a scheduled de-rating to 150 MW pending completion of on-line safety valve testing. From October 10, 2020 to October 14, 2020, the unit was taken off line on a forced outage to repair a hydrogen leak on the generator. It was returned to service on October 14, 2020 with the same scheduled de-rating to 150 MW. On October 15, 2020, safety valve testing was completed and the scheduled de-rating was removed. On October 17, 2020, the unit was de-rated to 130 MW while working through start-up issues. This de-rating was removed approximately 24 hours later with the correction of the issues. On October 25, 2020 the East Variable Frequency Drives ("VFD") tripped and caused a trip of the unit. The unit was returned to service on October 26, 2020 after replacement of failed VFD cells; however, the west boiler feed pump failed to start, resulting in a de-ration to 70 MW. On October 27, 2020, the unit tripped on low air flow, suspected to be East VFD related. On October 28, 2020, the unit was placed on outage to repair the west boiler feed pump and investigate the VFD issues. The unit remained on an outage for the remainder of the month.

Holyrood TGS Unit 2 was placed on line on October 23, 2020 after completion of the annual outage, to complete turbine valve commissioning and over-speed testing, which was completed on October 24, 2020. The unit was operating under a scheduled de-rating to 150 MW pending completion of on-line safety valve testing. On October 25, 2020, the unit tripped resulting from a human error made while attempting to restore Unit 1. The unit was returned to service approximately 15 hours later. On October 28, 2020, the safety valve testing was completed and the scheduled de-rating to 150 MW was removed.

Holyrood TGS Unit 3 was online in synchronous condenser mode for the entire month of October 2020.

The Stephenville Gas Turbine was available at full capacity for the entire month of October 2020.

The Hardwoods Gas Turbine was available at full capacity after the completion of a planned maintenance outage from September 23, 2020 to October 9, 2020 to complete preventative and corrective maintenance and capital upgrades. There was a planned de-rating on October 21, 2020 to investigate and repair an exhaust gas leak on the End B power turbine.

# Appendix A

## Production and Purchases

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## Production and Purchases[2]

| | October 1, 2020 to October 31, 2020 (GWh) | Year-to-Date October 31, 2020 (GWh) |
|---|---|---|
| **Hydro Generation (Hydro)** | | |
| Bay d'Espoir Plant | | |
| Unit 1 | 40.2 | 297.7 |
| Unit 2 | 37.4 | 271.8 |
| Unit 3 | 13.6 | 296.7 |
| Unit 4 | 6.9 | 105.3 |
| Unit 5 | 11.4 | 154.2 |
| Unit 6 | 17.0 | 215.0 |
| Unit 7 | 69.0 | 749.8 |
| **Subtotal Bay d'Espoir Plant** | **195.5** | **2,090.4** |
| Upper Salmon Plant | 43.1 | 436.3 |
| Granite Canal Plant | 20.4 | 180.5 |
| Hinds Lake Plant | 1.8 | 250.2 |
| Cat Arm Plant | | |
| Unit 1 | 36.3 | 323.5 |
| Unit 2 | 37.3 | 350.9 |
| **Subtotal Cat Arm Plant** | **73.6** | **674.4** |
| Paradise River | 3.4 | 30.3 |
| Star Lake Plant | 13.0 | 117.5 |
| Rattle Brook Plant | 1.9 | 10.1 |
| Nalcor Exploits Plants | 46.3 | 485.8 |
| Mini Hydro | 0.0 | 0.0 |
| **Total Hydro Generation** | **399.0** | **4,275.5** |
| | | |
| **Thermal Generation (Hydro)** | | |
| Holyrood TGS | | |
| Unit 1 | 25.0 | 279.1 |
| Unit 2 | 12.2 | 314.9 |
| Unit 3 | 0.0 | 199.0 |
| **Subtotal Holyrood TGS Units** | **37.2** | **792.9** |
| Holyrood Gas Turbine and Diesels | 0.4 | 4.5 |
| Hardwoods Gas Turbine | 0.3 | 0.9 |
| Stephenville Gas Turbine | 0.0 | 0.5 |
| Other Thermal | 0.0 | 0.2 |
| **Total Thermal Generation** | **37.9** | **799.0** |
| | | |
| **Purchases** | | |
| Requested Newfoundland Power and Vale | 0.0 | 0.1 |
| Corner Brook Pulp and Paper | | |
| Capacity Assistance | 0.0 | 0.0 |
| Firm Energy Power Purchase Agreement | 0.0 | 0.0 |
| Secondary | 3.0 | 41.8 |
| Co-Generation | 3.7 | 42.5 |
| **Subtotal Corner Brook Pulp and Paper** | **6.7** | **84.3** |
| Wind Purchases | 13.9 | 140.7 |
| Maritime Link Imports[3] | 4.9 | 184.9 |
| New World Dairy | 0.1 | 1.9 |
| Labrador-Island Link Imports[4] | 0.0 | 0.0 |
| **Total Purchases** | **25.6** | **412.0** |
| | | |
| **Total[5]** | **462.5** | **5,486.5** |

[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.