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July 18, 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 June 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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# Monthly Energy Supply Report for the Island Interconnected System for June 2022

**July 18, 2022**

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

newfoundland labrador hydro

# 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 June 2022.

# 2.0 System Hydrology

Reservoir inflows in June 2022 were approximately 13% above the month's historical average. Inflows in 2022 are 147% 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 | 2022 (GWh) | 2021 (GWh) | 20-Year Average (GWh) | Minimum Storage Limit (GWh) | Maximum Operating Level (GWh) | Percentage of Maximum Operating Level (%) |
|---|---|---|---|---|---|---|
| 30-June-2022 | 2,560 | 1,944 | 2,132 | 1,351 | 2,588 | 99 |

The aggregate reservoir storage level on June 30, 2022 was 2,560 GWh, which is 1% below the seasonal maximum operating level and 189% above the minimum storage limit.[1] The current storage level is

[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 the 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.

shown in Figure 1 in relation to the 20-year average storage level for the end of June 2022 of 2,132 GWh. At the end of June 2021, the aggregate storage level was 1,944 GWh.

Inflows in June 2022 continued to be above average due to continued snowmelt in the Cat Arm watershed and multiple rainfall events throughout the Bay d'Espoir system and at Hinds Lake. This resulted in total energy in storage increasing by approximately 27 GWh by month end. Spilling continued at Cat Arm throughout much of the month finally ending on June 28, 2022.

Generation at Hinds Lake continued to be prioritized early in the month while inflows and reservoir storage remained high. Cat Arm generation continued to be prioritized throughout much of the month while spilling continued at this location. Beginning March 24, 2022 and continuing through June, Hydro engaged Energy Marketing to export energy on its behalf to aid in the mitigation of spill pursuant to the Pilot Agreement for the Optimization of Hydraulic Resources.[2] Energy Marketing was able to export 3.0 GWh of energy on Hydro's behalf in June. Energy exports to mitigate spill ended once spilling at Cat Arm ended on June 28, 2022.

The Granite Canal Hydroelectric Generating Station planned annual outage began on June 19, 2022. Releases at the Granite Canal Bypass Structure began on June 23, 2022 and continued for the remainder of the month because of high storage levels in Victoria Reservoir, Burnt Pond, and Granite Lake following 80 mm of rainfall on June 19–20, 2022 and up to 40 mm of rainfall on June 24–25, 2022.

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.

[2] Exporting when system load is low allowed for sustained generation from Island hydraulic facilities and the utilization of water (energy) that would otherwise have been spilled, while not increasing the risk of spill elsewhere in the system.

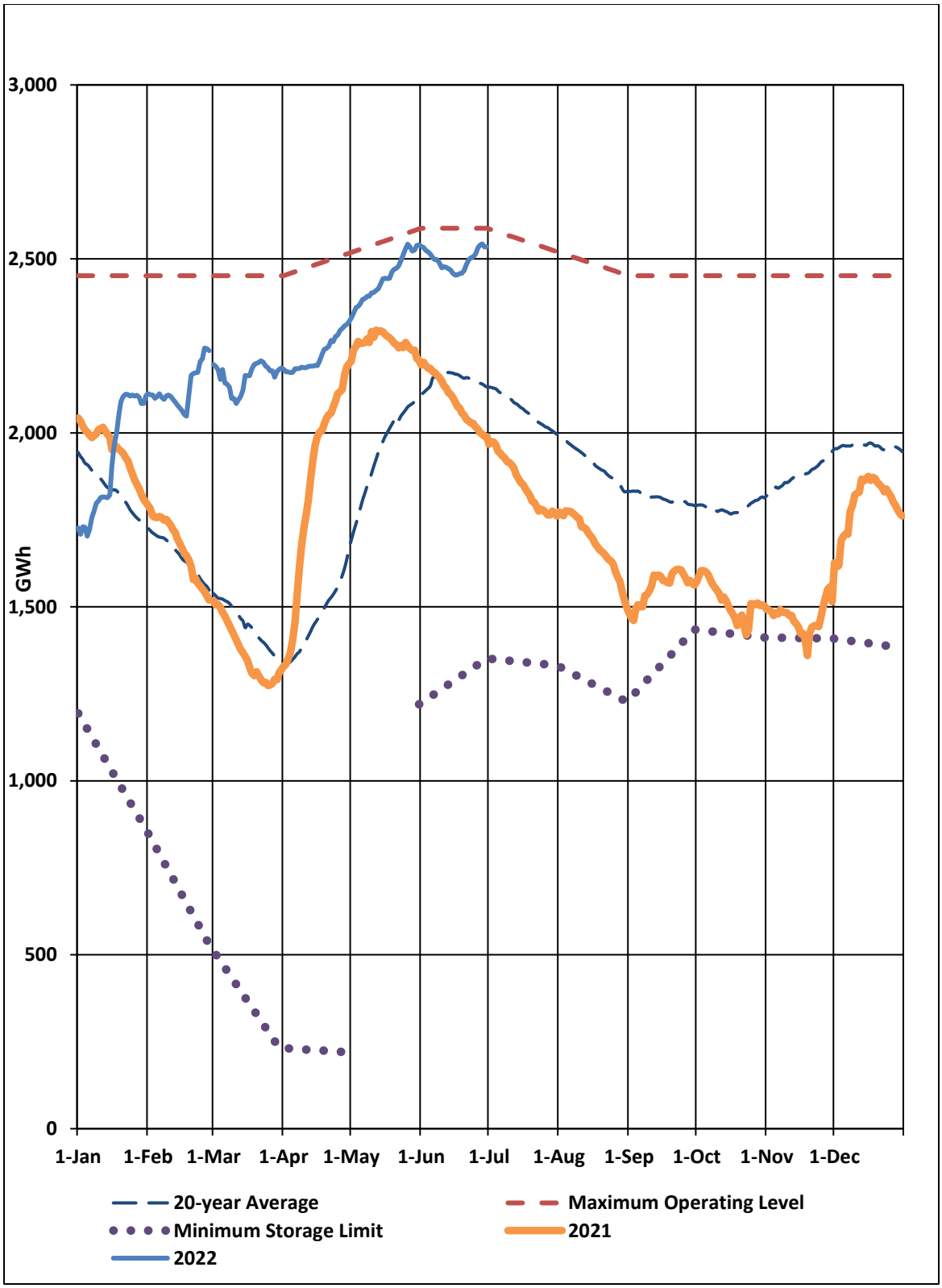


**Figure 1: Total System Energy Storage**

# 3.0 Production and Purchases

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

# 4.0 Thermal Production and Imports

No units at the Holyrood Thermal Generating Station ("Holyrood TGS") were required to generate during June 2022 for system requirements. Unit 3 was operated in synchronous condenser operational mode for 273 hours. Total energy production from the Holyrood TGS during the month of June 2022 was 0.0 GWh.

Standby units were operated for a total of 46.5 hours during the month to support system requirements. Total standby production during the month was 0.3 GWh. Standby generation was not required to support reservoir storage.

Testing activities continued on the Labrador-Island Link ("LIL") in June 2022, resulting in the delivery of 62 GWh of energy at Soldiers Pond. Total metered energy over the Maritime Link to Nova Scotia for the month of June 2022 was 65.8 GWh.[3,4] Energy Marketing exported 50.5 GWh[5] associated with the delivery of the Nova Scotia Block and Supplemental Energy[6] and 7.5 GWh of bulk surplus energy[7]. Exports of 5.1 GWh occurred over the Maritime Link associated with ponding activities, resulting in a month-end ponded balance of -5.1 GWh. In addition, 1.9 GWh was repaid to Energy Marketing by Corner Brook Pulp and Paper Limited as per the Temporary Energy Exchange Agreement. This energy was also exported over the Maritime Link.

[3] 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.
[4] Physical delivery of the Nova Scotia Block will only occur when the LIL is online and able to transfer power.
[5] Due to power system operations, metered quantities may not match commercially transacted volumes.
[6] Nova Scotia Block and Supplemental Energy quantities are reflected at the point of commercial transaction.
[7] Bulk surplus energy includes Muskrat Falls energy and energy repaid to Energy Marketing by Corner Brook Pulp and Paper Limited that is sold to external markets.

# 5.0 Unit Deratings

Holyrood TGS Unit 1 was available at full capability until June 13, 2022 but the unit was offline because it was not required by the Newfoundland and Labrador System Operator ("NLSO") to support system loading. On June 13, 2022, Unit 1 was placed on planned annual maintenance outage with a scheduled return to service date of August 27, 2022. The unit remained on planned outage for the remainder of June.

Holyrood TGS Unit 2[8] was offline with full capability for the entire month of June 2022 because it was not required by the NLSO to support system loading.

Holyrood TGS Unit 3 was operating in synchronous condenser mode at the beginning of June 2022. Annual outage work on Unit 3 assets not required for synchronous condenser operation, including the boiler, progressed in parallel. On June 12, 2022, the synchronous condenser was taken offline and the unit was placed on planned annual outage with a scheduled return to service date of August 27, 2022. It remained on planned outage for the remainder of June.

The Hardwoods Gas Turbine was available at full capacity for the entire month of June 2022 with the exception of a planned outage on June 17, 2022 to complete corrective maintenance on a main lube oil cooler fan.[9]

The Holyrood Gas Turbine was available at full capacity for the entire month of June 2022.

The Stephenville Gas Turbine was available at full capacity for the entire month of June 2022, with the exception of a planned outage from May 29–June 4, 2022 to complete preventative and corrective maintenance activities.

[8] 150 MW, as noted in the "Monthly Energy Supply Report for the Island Interconnected System for January 2022," Newfoundland and Labrador Hydro, February 17, 2022, s. 5.0, p. 4.

[9] 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]

| | June 1–30, 2022 (GWh) | YTD[2] June 30, 2022 (GWh) |
|---|---|---|
| **Hydro Generation (Hydro)** | | |
| Bay d'Espoir | | |
| Unit 1 | 39.0 | 220.1 |
| Unit 2 | 39.7 | 224.0 |
| Unit 3 | 30.8 | 214.6 |
| Unit 4 | 12.8 | 144.9 |
| Unit 5 | 12.7 | 146.2 |
| Unit 6 | 0.0 | 156.1 |
| Unit 7 | 38.3 | 478.4 |
| Subtotal Bay d'Espoir | 173.3 | 1,584.3 |
| Upper Salmon | 35.9 | 289.1 |
| Granite Canal | 13.7 | 119.9 |
| Hinds Lake | 31.1 | 244.7 |
| Cat Arm | | |
| Unit 1 | 39.2 | 165.2 |
| Unit 2 | 40.7 | 181.7 |
| Subtotal Cat Arm | 79.9 | 346.9 |
| Paradise River | 1.7 | 20.5 |
| Star Lake | 11.8 | 68.7 |
| Rattle Brook | 2.0 | 9.0 |
| Nalcor Exploits | 46.8 | 314.3 |
| Mini Hydro | 0.0 | 0.0 |
| **Total Hydro Generation (Hydro)** | **396.3** | **2,997.4** |
| **Thermal Generation (Hydro)** | | |
| Holyrood TGS | | |
| Unit 1 | 0.0 | 194.3 |
| Unit 2 | 0.0 | 210.5 |
| Unit 3 | 0.0 | 139.2 |
| Subtotal Holyrood TGS Units | 0.0 | 544.0 |
| Holyrood Gas Turbine and Diesels | 0.0 | 0.8 |
| Hardwoods Gas Turbine | 0.1 | 0.6 |
| Stephenville Gas Turbine | 0.1 | 0.4 |
| Other Thermal | 0.0 | 0.4 |
| **Total Thermal Generation (Hydro)** | **0.3** | **546.2** |
| **Purchases** | | |
| Requested Newfoundland Power and Vale CBPP[3] | 0.0 | 0.0 |
| Capacity Assistance | 0.0 | 0.0 |
| Firm Energy Power Purchase Agreement | 0.0 | 0.0 |
| Secondary | 4.1 | 23.2 |
| Co-Generation | 2.7 | 26.0 |
| Subtotal CBPP | 6.8 | 49.3 |
| Wind Purchases | 11.7 | 93.0 |
| Maritime Link Imports[4] | 0.1 | 0.4 |
| New World Dairy | 0.3 | 1.6 |
| LIL Imports[5] | 62.0 | 618.3 |
| **Total Purchases** | **80.9** | **762.6** |
| **Total[6]** | **477.5** | **4,306.2** |

[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.