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July 16, 2024

The Board of Commissioners of Public Utilities
Prince Charles Building
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St. John's, NL A1A 5B2

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: Monthly Energy Supply Report for the Island Interconnected System for June 2024

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

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Senior Legal Counsel, Regulatory
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Encl.

ecc:

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Monthly Energy Supply Report for the Island Interconnected System for June 2024

July 16, 2024

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;
- 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 2024.¹

2.0 System Hydrology

Reservoir inflows in June 2024 were 18% below the month’s historical average.² 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	2024 (GWh)	2023 (GWh)	20-Year Average (GWh)	Minimum Storage Limit (GWh)	Maximum Operating Level (GWh)	Maximum Operating Level (%)
30-June-2024	2,359	2,031	2,153	1,664	2,588	91

The aggregate reservoir storage level on June 30, 2024 was 2,359 GWh, which is 9% below the seasonal maximum operating level and 42% above the minimum storage limit.³ Inflows to the reservoirs of the Bay d’Espoir Generation System (“Bay d’Espoir System”) were 111% of average during June 2024.

¹ Effective April 2023, Hydro added Section 2.1 (Ponding), Section 2.2 (Spill Activity), and Appendix A (Ponding and Spill Transactions) within this report. “Newfoundland and Labrador Hydro – Streamlining of Quarterly Regulatory Report to Parties – Board’s Decision on Reporting,” Board of Commissioners of Public Utilities, May 11, 2023.

² Calculated in terms of energy (gigawatt hour [“GWh”]).

³ 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 supplemented with maximized deliveries of power from the Muskrat Falls Hydroelectric Generating Facility over the Labrador-Island Link (“LIL”). Hydro’s long-term critical dry sequence is defined as January 1959 to March 1962 (39 months). Other dry periods are also considered during this analysis to ensure that no other shorter-term historic dry sequence could result in insufficient storage.

1 Inflows to the Hinds Lake Reservoir were 97% of average, and inflows to the Cat Arm Reservoir were
2 33% of average. Weather conditions across the Island reservoirs in June 2024 were warm with periods
3 of rain particularly at the start of the month.

4 Bay d’Espoir Unit 1 remained offline on a planned outage throughout June 2024. Bay d’Espoir Unit 2 was
5 taken offline starting June 2, 2024 for a planned outage, with the unit returning to service on
6 June 12, 2024. Bay d’Espoir Unit 6 was taken offline on a brief planned outage on June 12, 2024 and
7 returned to service the same day. The Hinds Lake Hydroelectric Generating System was taken offline on
8 a brief forced outage on June 13, 2024 due to a unit trip; the unit returned to service the same day.
9 Bay d’Espoir Unit 2 was taken offline on a brief planned outage on June 14, 2024 due to a unit trip and
10 returned to service the same day. The Granite Canal Hydroelectric Generation Station Unit was taken
11 offline on a planned outage on June 16, 2024 and remained offline for the rest of June 2024.

12 Bay d’Espoir Units 3 and 4 were taken offline on June 18, 2024 for a forced outage due to unit trips; they
13 were returned to service the same day. Figure 1 plots the 2023 and 2024 storage levels, minimum
14 storage limits, maximum operating level storage, and 20-year average aggregate storage for
15 comparison. In addition to the 2023–2024 limits, Hydro has established the minimum storage limits to
16 April 30, 2025. The 2024–2025 limits were developed considering maximized delivery of power from the
17 Muskrat Falls Facility, supplemented by available Recapture Energy from the Churchill Falls Generating
18 Station over the LIL utilizing the transmission limits associated with the >58.0 Hz under-frequency load
19 shedding scheme.⁴

⁴ The 2024–2025 analysis assumed that only two units at the Holyrood Thermal Generating Station (“Holyrood TGS”) would be online and operating at minimum load during the winter 2024–2025 period. All three units at the Holyrood TGS are planned to be available at full capability, if needed. The minimum storage methodology was updated to ensure Hydro’s reservoirs could continue to provide reliable service to customers at the lowest possible cost, in an environmentally responsible manner. In this context, Island reservoirs are expected to be supported with Muskrat Falls energy instead of thermal energy from the Holyrood TGS.

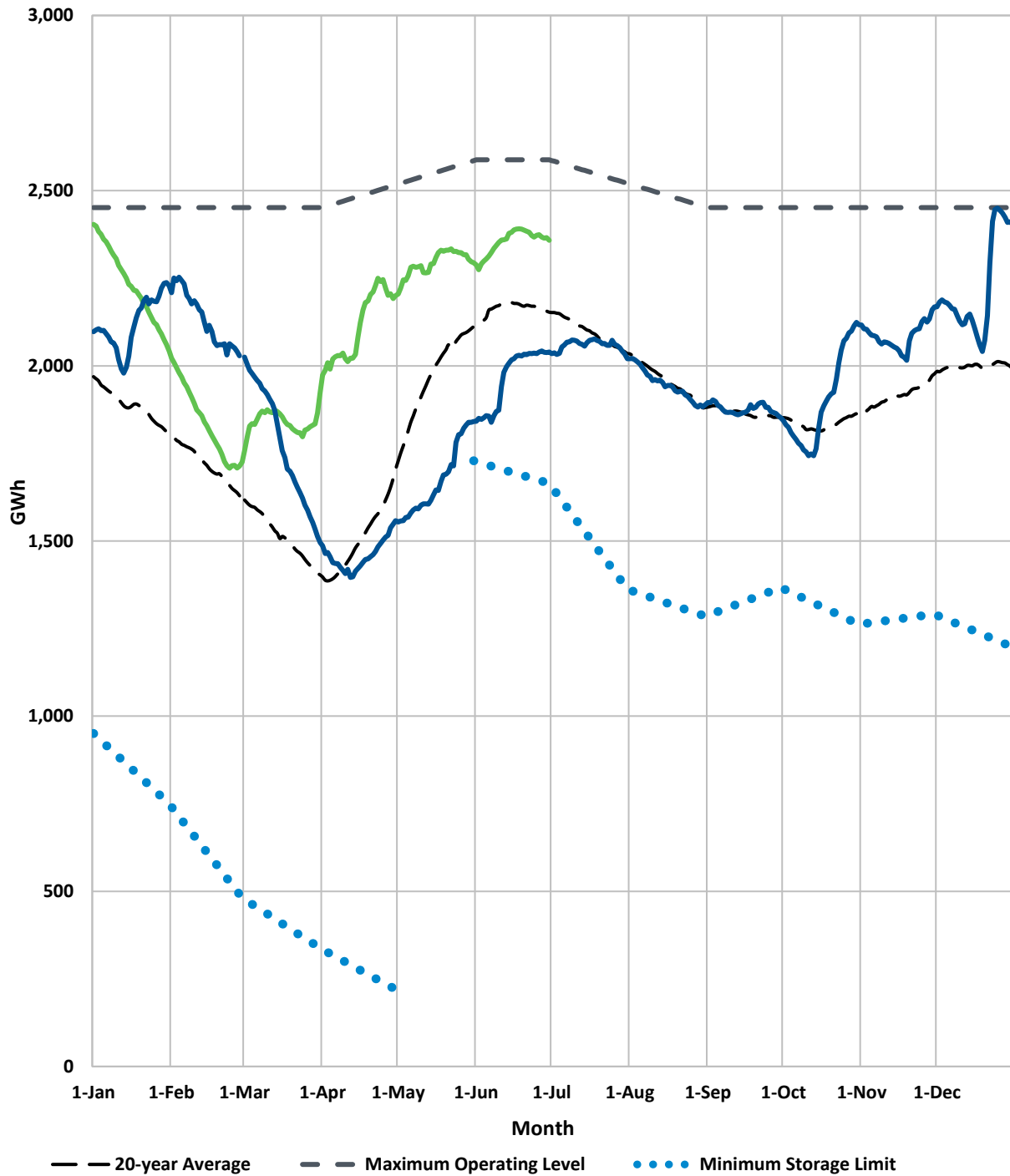


Figure 1: Total System Energy Storage⁵

⁵ Data points in Figure 1 represent storage at the beginning of each day. Table 1 reports the end-of-day storage values, which results in a small difference between the storage data presented in Table 1 and Figure 1.

2.1 Ponding

In Order No. P.U. 49(2018), the Board approved Hydro’s application for approval of a Pilot Agreement for the Optimization of Hydraulic Resources (“Pilot Agreement”).⁶ The intent of the Pilot Agreement is to optimize Hydro’s hydraulic resources through the strategic use of its storage capabilities, taking advantage of the variability of energy pricing in external markets over time.

Appendix A provides information regarding imported and exported energy transactions under the Pilot Agreement during the month. No ponding exports over the Maritime Link occurred during June 2024.

2.2 Spill Activity

Appendix A provides information regarding spill-avoidance export transactions undertaken.⁷ There were no releases of water required at any locations on the Island Interconnected System in June 2024. A summary of the year-to-date (“YTD”) total volumes spilled or bypassed in both MCM⁸ and GWh can be found in Table 2.

Table 2: Spill Activity⁹

	Granite Canal Bypass		Upper Salmon Bypass		Burnt Dam Spillway	
	MCM	GWh	MCM	GWh	MCM	GWh
30-June-2024	-	-	-	-	-	-
YTD Total	5.9	0.6	3.9	0.5	21.0	13.8

⁶ The Third Amended and Restated Pilot Agreement for the Optimization of Hydraulic Resources was approved as per Board Order No. P.U. 35(2022), and was extended as per Board Order No. P.U. 30(2023).

⁷ Pursuant to the Pilot Agreement, exporting when system load is low allows for increased generation from Island hydraulic facilities and the utilization of water (energy) that would have otherwise been spilled, while not increasing the risk of spill elsewhere in the system.

⁸ Million cubic metres (“MCM”).

⁹ Numbers may not add due to rounding.

3.0 Production and Purchases

Appendix B provides a breakdown of power purchases, including the import and export activity over the LIL and Maritime Link and production by plant during June 2024. Deliveries made in June 2024, under the power purchase agreement with Corner Brook Pulp and Paper Limited (“CBPP”), are also outlined in Appendix B.¹⁰ A total of 0.67 GWh of energy was repaid from CBPP to Energy Marketing under the Temporary Energy Exchange Agreement in June 2024. There was no emergency energy¹¹ supplied to Nova Scotia over the Maritime Link during June 2024.

4.0 Thermal Production

There were no units online at the Holyrood TGS during June 2024. Total energy production from Gas Turbines was 0.1 GWh during the month. The operating hours for the Holyrood TGS and the Hardwoods, Stephenville, and Holyrood Combustion Turbines are summarized in Table 3. Standby generation was not required to support reservoir storage.

Table 3: Holyrood TGS and Combustion Turbines Operating Hours

	Operating Hours	Synch Condense Hours	Available Hours
Holyrood TGS			
Unit 1	0.0	0.0	0.0
Unit 2	0.0	0.0	720.0
Unit 3	0.0	0.0	0.0
Combustion Turbines			
Hardwoods Gas Turbine	6.7	703.2	720.0
Stephenville Gas Turbine	0.0	0.0	0.0
Holyrood Combustion Turbine	0.0	0.0	720.0

¹⁰ On February 1, 2024, Hydro entered into a six-month power purchase agreement with CBPP as per a directive from the Government of Newfoundland and Labrador on January 22, 2024, in Order in Council No. OC2024-013. The power purchase agreement with CBPP provides Hydro with 80 GWh of non-firm energy from February 1, 2024, through July 31, 2024, inclusive. The 80 GWh was delivered in full by June 2024.

¹¹ Under the Interconnection Operators Agreement between Hydro and Nova Scotia Power.

5.0 Unit Deratings

Holyrood TGS Unit 1 was taken offline for the planned annual outage on April 12, 2024. It remained on a planned outage for the entire month of June 2024.

Holyrood TGS Unit 2 remained available, but on standby for the entire month of June 2024 as it was not required to support system generation requirements.

Holyrood TGS Unit 3 was taken offline for the planned annual outage on May 26, 2024. It remained on a planned outage for the entire month of June 2024.

The Hardwoods Gas Turbine was available for the entire month of June 2024 with the exception of a planned derating on June 12, 2024 to complete planned preventative maintenance activities on End A.

The Holyrood Combustion Turbine was available for the full month of June 2024.

The Stephenville Gas Turbine remained unavailable during June 2024 due to damage to the generator resulting from the failure of a generator cooling fan. After inspection and testing at the original equipment manufacturer (“OEM”) facility in the United States in December 2023, the rotor was returned to the site in February 2024 and reinstalled in the unit on March 5, 2024. The exciter was received back from OEM’s facility on May 10, 2024. The contractor mobilized to the site on May 6, 2024, and began reassembly activities. Assembly of the unit continues with the focus of the work being the exterior of the unit with final assembly of the unit and auxiliaries planned for July 2024. It is expected that the unit will return to service in early to mid-August 2024.

Appendix A

Ponding and Spill Transactions



Table A-1: Ponding Transactions¹

Date	Ponding Imports (MWh)	Ponding Exports (MWh)	Ponding Imports Purchased by Hydro (MWh)	Transfer of Pond Balance to Spill Avoidance (MWh)	Energy Losses to Export (MWh)	Cumulative Pondered Energy (MWh)
Opening Balance						(4,774)
Total ²		-	-	-	-	

¹ Numbers may not add due to rounding.

² Total transactions for June 2024.

Table A-2: Avoided Spill Energy³

Date	Avoided Spill Exports (MWh)	Energy Losses to Export (MWh)	Transfer of Pond Balance to Spill Avoidance (MWh)	YTD Avoided Spill Energy (MWh)
Opening Balance	-	-	-	170
Total ⁴	-	-	-	170

³ Numbers may not add due to rounding.

⁴ Total transactions for June, 2024.

Appendix B

Production and Purchases



Table B-1: Generation and Purchases (GWh)¹

	June 2024	YTD June 2024
Hydro Generation (Hydro)		
Bay d'Espoir		
Unit 1	0.0	188.4
Unit 2	2.9	204.7
Unit 3	36.6	187.8
Unit 4	20.6	118.9
Unit 5	18.7	107.7
Unit 6	25.9	124.8
Unit 7	64.9	448.9
Subtotal Bay d'Espoir	169.5	1,381.2
Upper Salmon	31.3	290.9
Granite Canal	11.0	127.1
Hinds Lake	27.5	212.4
Cat Arm		
Unit 1	27.1	244.2
Unit 2	25.9	247.6
Subtotal Cat Arm	53.0	491.8
Paradise River	3.5	17.3
Star Lake	12.0	69.8
Rattle Brook	1.5	8.4
Nalcor Exploits	54.5	317.1
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	363.8	2,915.9
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	180.1
Unit 2	0.0	17.0
Unit 3	0.0	204.7
Subtotal Holyrood TGS Units	0.0	401.8
Holyrood Gas Turbine and Diesels	0.0	5.1
Hardwoods Gas Turbine	0.1	0.4
Stephenville Gas Turbine	0.0	0.0
Other Thermal	0.0	0.1
Total Thermal Generation (Hydro)	0.1	407.3
Purchases		
Requested Newfoundland Power and Vale CBPP	0.0	0.0
Capacity Assistance	0.0	0.5
Power Purchase Agreement	5.7	80.5
Secondary	0.0	1.7
Co-Generation	1.6	12.3
Subtotal CBPP	7.4	95.0
Wind Purchases	13.1	96.0
Maritime Link Imports ²	0.0	0.0
New World Dairy	0.0	0.1
Labrador Island Link Delivery to IIS ^{3,4}	26.3	357.6
Total Purchases	46.7	548.8
Total⁵	410.6	3,871.9

¹ Gross generation.

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

³ LIL deliveries to the Island Interconnected System are calculated by total LIL imports of 276.1 GWh less Maritime Link Exports of 249.8 GWh.

⁴ Net energy delivered to the Island Interconnected System is less than the total energy delivery to Hydro under the Muskrat Falls Power Purchase Agreement because of transmission losses on the LIL.

⁵ Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total versus addition of individual components due to rounding.