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October 17, 2024

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
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 September 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

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/rr

Encl.

ecc:

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

October 17, 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 September 2024.

2.0 System Hydrology

Reservoir inflows in September 2024 were 91% below the month’s historical average.¹ 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-September-2024	1,465	1,840	1,851	1,367	2,452	60

The aggregate reservoir storage level on September 30, 2024 was 1,465 GWh, which is 40% below the seasonal maximum operating level and 7% above the minimum storage limit.² Hydro’s reservoirs experienced continued dry weather throughout the month of September 2024, with little rain received across most Island reservoirs. Inflows to the reservoirs of the Bay d’Espoir Generation System (“Bay d’Espoir System”) were 98% below average in September 2024. Inflows to the Hinds Lake Reservoir

¹ Calculated in terms of energy (gigawatt hour [“GWh”]).

² 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 were 82% below average. Inflows to the Cat Arm Reservoir were 88% below average. The continued dry
- 2 period led to the reduction in firm target generation from the exploits system by 10 MW on
- 3 September 17, 2024. This reduction at Exploits continued for the remainder of the month.
- 4 Table 2 summarizes the unit outages experienced during September 2024.

Table 2: September 2024 Unit Outage Summary

Unit Name	Date offline	Return to Service	Outage Reason	Notes
Bay d’Espoir Unit 4	August 11	September 26	Planned outage	n/a
Bay d’Espoir Unit 3	August 18	September 8	Planned outage	n/a
Cat Arm Unit 1	August 25	September 20	Planned outage	n/a
Granite Canal Unit	September 3	September 3	Forced outage	Outage due to issue with governor heard pressure switch.
Granite Canal Unit	September 13	September 14	Forced outage	Outage due to issue with governor heard pressure switch.
Cat Arm Unit 2	September 15	n/a	Planned outage	Remained on a planned outage as of September 30, 2024.
Bay d’Espoir Unit 3	September 26	September 26	Planned outage	n/a

- 5 Figure 1 plots the 2023 and 2024 storage levels, minimum storage limits, maximum operating level
- 6 storage, and 20-year average aggregate storage for comparison. In addition to the 2023–2024 limits,
- 7 Hydro has established the minimum storage limits to April 30, 2025. The 2024–2025 limits were
- 8 developed considering maximized delivery of power from the Muskrat Falls Hydroelectric Generating
- 9 Facility, supplemented by available Recapture Energy from the Churchill Falls Generating Station over
- 10 the LIL, utilizing the transmission limits associated with the >58.0 Hz under-frequency load shedding
- 11 scheme.³

³ 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. Hydro plans to have all three units at the Holyrood TGS 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, Hydro expects Island reservoirs to be supported with MF energy instead of thermal energy from the Holyrood TGS.

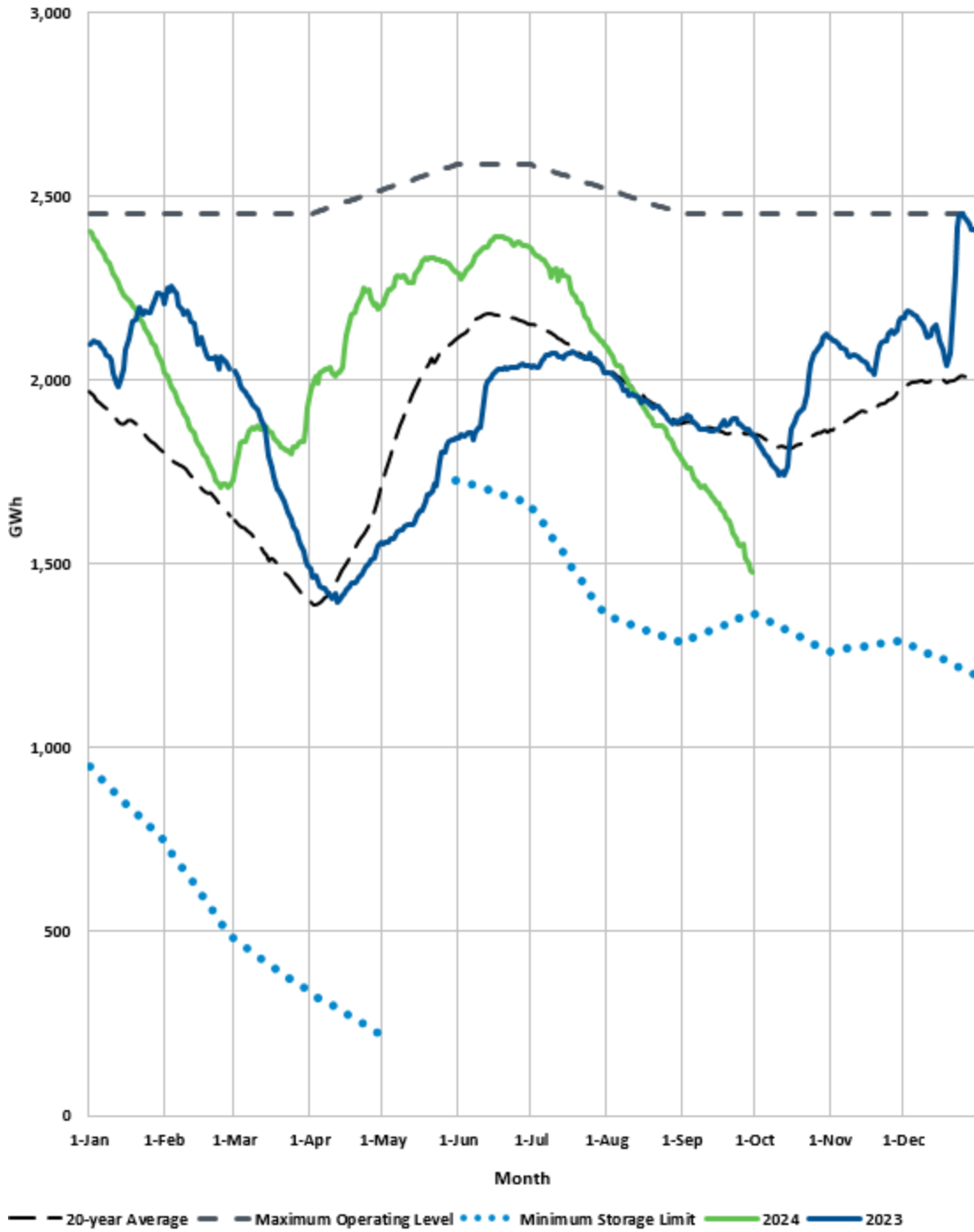


Figure 1: Total System Energy Storage⁴

⁴ 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”).⁵ 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 or imports over the Maritime Link occurred during September 2024.

2.2 Spill Activity

Appendix A provides information regarding spill-avoidance export transactions undertaken.⁶ There were no releases of water required at any locations on the Island Interconnected System in September 2024. A summary of the year-to-date (“YTD”) total volumes spilled or bypassed in both MCM⁷ and GWh can be found in Table 3.

Table 3: Spill Activity⁸

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

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 September 2024. No energy was repaid from Corner Brook Pulp and Paper Limited (“CBPP”) to Energy Marketing under the Temporary Energy

⁵ 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).

⁶ 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.

⁷ Million cubic metres (“MCM”).

⁸ Numbers may not add due to rounding.

1 Exchange Agreement in September 2024. There was no emergency energy⁹ supplied to Nova Scotia over
 2 the Maritime Link during September 2024. On September 26, 2024, Hydro engaged Energy Marketing to
 3 import via the Maritime Link to support Island reservoir storage levels while the LIL was on a bipole
 4 outage. Due to limited transmission path availability from New England to Newfoundland, hourly
 5 imports were limited resulting in a total of 0.9 GWh being delivered.

6 **4.0 Thermal Production**

7 Unit 3 was online at the Holyrood TGS on September 28, 2024 for system requirements and remained
 8 online for the rest of the month. Total energy production from the Holyrood TGS was 3.5 GWh during
 9 the month. The operating hours for the Holyrood TGS, Holyrood Combustion Turbine (“CT”), and the
 10 Hardwoods and Stephenville Gas Turbines (“GT”) are summarized in Table 4. Standby generation was
 11 not required to support reservoir storage. Hardwoods GT, Stephenville GT and Holyrood CT were all
 12 started during September for testing purposes and to support transmission line outages.

Table 4: Holyrood TGS and Combustion Turbines Operating Hours

	Operating Hours	Synch Condense Hours	Available Hours
Holyrood TGS			
Unit 1	0	0	0
Unit 2	0	0	0
Unit 3	64.4	356.2	487.0
Combustion Turbines			
Hardwoods GT	2.7	717.3	720
Stephenville GT	4.8	127.0	131.8
Holyrood CT	1.0	0	720

13 **5.0 Unit Deratings**

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

16 Holyrood TGS Unit 2 was on a planned annual outage beginning August 4, 2024. It remained on a
 17 planned outage for the entire month of September.

⁹ Under the Interconnection Operators Agreement between Hydro and Nova Scotia Power.

- 1 Holyrood TGS Unit 3 was taken offline for a planned annual outage on May 26, 2024. The unit was
- 2 online from August 8, 2024 until September 15, 2024 as a synchronous condenser. During this time,
- 3 outage work on the boiler and other components not required for the synchronous condenser operation
- 4 continued in parallel. From September 15 to 25, 2024, the synchronous condenser was offline for a
- 5 maintenance outage to change over to generation mode. On September 28, 2024, Unit 3 was put online
- 6 in generation mode pending on-line safety valve testing, which was completed on October 4, 2024.

- 7 The Holyrood CT and Hardwoods GT were available for the full month of September 2024.

- 8 The Stephenville GT remained unavailable until September 27, 2024 because of damage to the
- 9 generator from the failure of a generator cooling fan. The unit final assembly and commissioning was
- 10 completed during the month of September, with the unit returning to service on September 27, 2024.

Appendix A

Ponding and Spill Transactions



Table A-1: Pondering Transactions¹

Date	Pondering Imports (MWh)	Pondering Exports (MWh)	Pondering 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)
Total²		-	-	-	-	

¹ Numbers may not add due to rounding.

² Total transactions for September 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 September 2024.

Appendix B

Production and Purchases



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

	September 2024	YTD Sep 2024
Hydro Generation (Hydro)		
Bay d'Espoir		
Unit 1	39.6	289.5
Unit 2	39.4	306.4
Unit 3	27.5	273.3
Unit 4	0.1	149.8
Unit 5	18.3	178.1
Unit 6	15.6	147.6
Unit 7	62.8	576.7
Subtotal Bay d'Espoir	203.2	1,921.4
Upper Salmon	41.8	402.7
Granite Canal	17.4	173.1
Hinds Lake	23.8	295.7
Cat Arm		
Unit 1	11.9	303.8
Unit 2	13.8	312.3
Subtotal Cat Arm	25.7	616.1
Paradise River	1.4	20.7
Star Lake	12.1	106.9
Rattle Brook	0.2	9.3
Nalcor Exploits	33.2	441.9
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	358.9	3,987.6
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	180.1
Unit 2	0.0	17.0
Unit 3	3.5	208.2
Subtotal Holyrood TGS Units	3.5	405.2
Holyrood Gas Turbine and Diesels	0.1	9.5
Hardwoods Gas Turbine	0.0	0.9
Stephenville Gas Turbine	0.2	0.2
Other Thermal	0.1	0.1
Total Thermal Generation (Hydro)	3.9	416.0
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
CBPP		
Capacity Assistance	0.0	0.5
Power Purchase Agreement	0.0	80.0
Secondary	0.0	3.4
Co-Generation	1.7	22.1
Subtotal CBPP	1.7	106.0
Wind Purchases	9.5	126.5
Maritime Link Imports ²	0.9	1.0
New World Dairy	0.0	0.1
LIL Imports	115.7	1,748.9
Less: ML Exports ^{3,4}	89.5	1,329.3
Labrador Island Link Delivery to IIS ^{3,4}	26.2	419.5
Total Purchases	38.3	653.1
Total⁵	401.1	5,056.7

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 115.7 GWh less Maritime Link Exports of 89.5 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.