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December 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 November 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 November 2024

December 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 November 2024.

Ownership of the Water Management function resides within Hydro in the Resource and Production Planning department, and is at all times guided by Hydro’s operating instructions and environmental standards. This group works in consultation with Energy Marketing to optimize the use of Hydro’s hydrologic resources through import/exports and to ensure that the security of supply for domestic load for Hydro’s customers remains paramount in all decisions, ensuring the delivery of least-cost, reliable service in an environmentally responsible manner.

2.0 System Hydrology

Reservoir inflows in November 2024 were 48% above 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-November-2024	1,907	2,167	1,977	1,291	2,452	78

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

1 The aggregate reservoir storage level on November 30, 2024 was 1,907 GWh, which is 22% below the seasonal
 2 maximum operating level and 48% above the minimum storage limit.² Hydro’s reservoirs did experience a
 3 dramatic increase in system energy throughout the month of November 2024 compared with previous years.
 4 Total system energy increased by 416 GWh due to sustained rainfall throughout the entire Island system over the
 5 month of November. Inflows to the reservoirs of the Bay d’Espoir System were 46% above average in November
 6 2024. Inflows to the Hinds Lake Reservoir were 40% above average and inflows to the Cat Arm Reservoir were
 7 102% above average. The 10 MW reduction in firm target generation from the Exploits system that occurred in
 8 September 2024 continued until November 18, 2024. On November 19, 2024, firm target generation from the
 9 Exploits system increased to 50 MW and remained there for the remainder of November.

10 Table 2 summarizes the unit outages experienced during November 2024.

Table 2: November 2024 Unit Outage Summary

Unit Name	Date offline	Return to Service	Outage Reason	Notes
Granite Canal Unit	November 2	November 2	Forced outage	Air in instrumentation line causing bearing anomaly alarm.
Hinds Lake Unit	November 5	November 7	Planned outage	n/a
Hinds Lake Unit	November 7	November 11	Forced outage	Low unit reading due to carbon on unit.
Bay d’Espoir Unit 7	November 17	November 21	Planned outage	n/a
Upper Salmon Unit	November 18	November 18	Forced outage	Ground on station service breaker feeding the intake.
Granite Canal Unit	November 19	November 19	Planned outage	n/a
Bay d’Espoir Unit 4	November 21	November 22	Forced outage	Outage to replace a broken shear pin in the wicket gates.
Granite Canal Unit	November 24	November 24	Forced outage	Air in instrumentation line causing bearing low oil anomaly alarm.
Cat Arm Unit 1	November 27	November 27	Planned outage	n/a

11 Figure 1 plots the 2023 and 2024 storage levels, minimum storage limits, maximum operating level storage, and
 12 20-year average aggregate storage for comparison. In addition to the 2023–2024 limits, Hydro has established the
 13 minimum storage limits to April 30, 2025. The 2024–2025 limits were developed considering maximized delivery

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 of power from the Muskrat Falls Hydroelectric Generating Facility, supplemented by available Recapture Energy
 2 from the Churchill Falls Generating Station over the LIL, utilizing the transmission limits associated with the
 3 >58.0 Hz under-frequency load shedding scheme.³

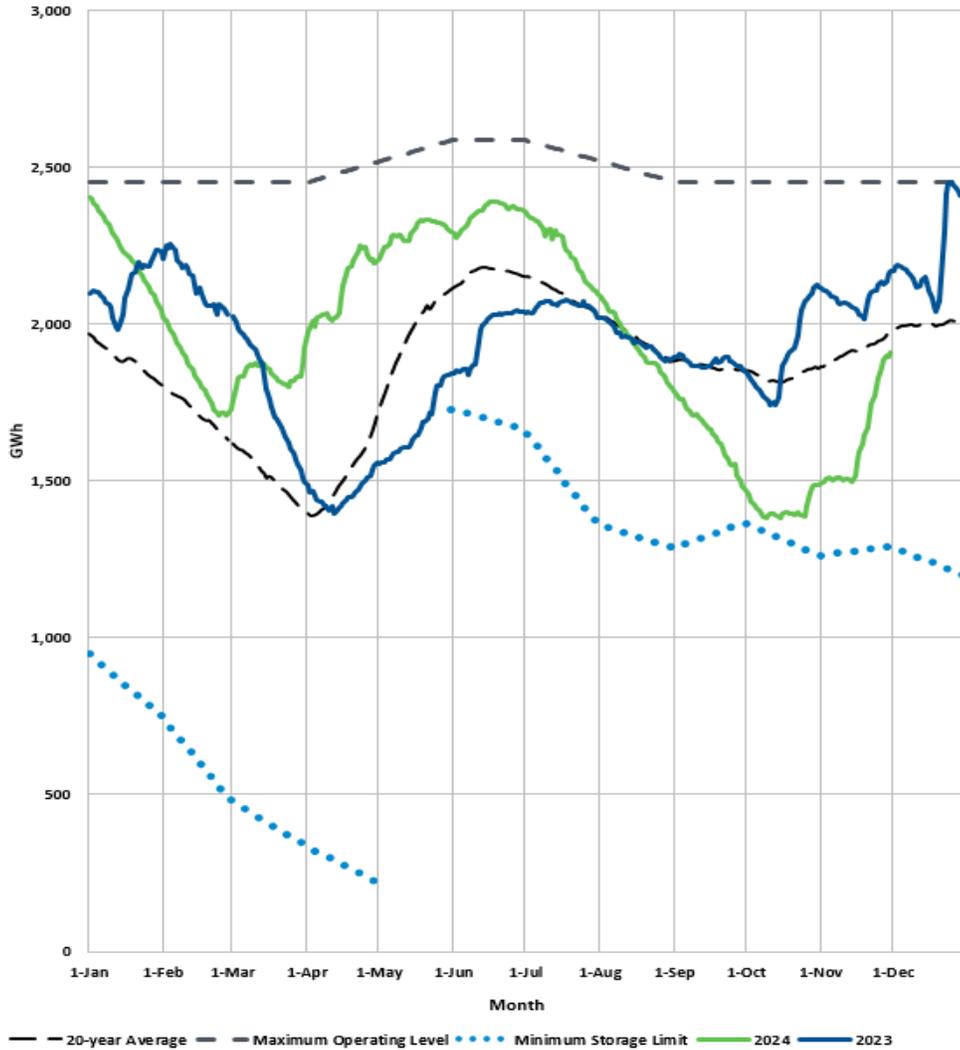


Figure 1: Total System Energy Storage⁴

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.

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.

1 **2.1 Pondering**

2 In Order No. P.U. 49(2018), the Board approved Hydro’s application for approval of a Pilot Agreement for the
 3 Optimization of Hydraulic Resources (“Pilot Agreement”).⁵ The intent of the Pilot Agreement is to optimize
 4 Hydro’s hydraulic resources through the strategic use of its storage capabilities, taking advantage of the variability
 5 of energy pricing in external markets over time.

6 Appendix A provides information regarding imported and exported energy transactions under the Pilot
 7 Agreement during the month. No ponding exports or imports over the Maritime Link occurred during November
 8 2024.

9 **2.2 Spill Activity**

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

Table 3: Spill Activity

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

13 **3.0 Production and Purchases**

14 Appendix B provides a breakdown of power purchases, including the import and export activity over the LIL and
 15 Maritime Link and production by plant during November 2024.⁸ There was no energy repaid from Corner Brook
 16 Pulp and Paper (“CBPP”) to Energy Marketing under the Temporary Energy Exchange Agreement in November
 17 2024. There was no emergency energy supplied to Nova Scotia over the Maritime Link during November 2024.

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), and again in Board Order No. P.U. 29(2024).

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 On October 1, 2024, Hydro entered into a second six-month power purchase agreement with CBPP as directed by the Government of Newfoundland and Labrador. The power purchase agreement with CBPP provides Hydro with 80 GWh of non-firm energy from October 1, 2024 through March 31, 2025 inclusive.

4.0 Thermal Production

Unit 3 at the Holyrood TGS was online for system requirements for the month of November with the exception of November 26 to 29, 2024 when it went offline for a planned maintenance outage. Unit 2 at the Holyrood TGS was online for all of November for system requirements. Total energy production from the Holyrood TGS was 98.3 GWh during the month. Standby generation was not used to support reservoir storage. The operating hours for the Holyrood TGS, Holyrood Combustion Turbine (“CT”), and the Hardwoods and Stephenville Gas Turbines (“GT”) are summarized in Table 4.

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	720	0	720
Unit 3	664.7	0	664.7
Combustion Turbines			
Hardwoods GT	1	537.3	538.3
Stephenville GT	3	717	720
Holyrood CT	2.3	0	259.9

5.0 Unit Deratings

Holyrood TGS Unit 1 was taken offline for a planned annual outage on April 12, 2024. It remained on planned outage until the planned return to service date of October 19, 2024. For the entire month of November, the unit was on a forced extension of the planned outage, as work to restore the last stage blades and complete other work including damage found to the rotor journals continued. The anticipated return to service for Unit 1 is mid-January 2025.

Holyrood TGS Unit 2 was online and available for full load from November 1 until November 8, 2024 when the east forced draft fan tripped due to spray from a water leak on one of the fan bearing cooling lines. The unit was derated to 50 MW with only one fan in operation. The east fan was returned to service later the same day after the motor was electrically tested and a vibration sensor was replaced. This restored the unit to full load capability. The unit was available for full load for the remainder of November 2024.

Holyrood TGS Unit 3 remained online and fully available for the month of November 2024, with the exception of a planned maintenance outage from November 26 to November 29, 2024 to repair a leaking feedwater valve.

- 1 The Holyrood CT was available during the month of November 2024 with the exception of a planned outage from
- 2 November 10 to November 30, 2024 to complete a planned combustor and generator inspection as well as
- 3 preventative and corrective maintenance activities.

- 4 The Hardwoods GT was available for the entire month of November 2024, with the exception of a planned outage
- 5 that began on October 23, 2024 and concluded on November 8, 2024 to complete preventative and corrective
- 6 maintenance activities.

- 7 Stephenville GT was available for the full month of November 2024.

Appendix A

Ponding and Spill Transactions



Table A-1: Pondering Transactions

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)
Total ¹		-	-	-	-	

Table A-2: Avoided Spill Energy

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 ²	-	-	-	170

¹ Total transactions for November 2024.

² Total transactions for November 2024.

Appendix B

Production and Purchases



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

	November 2024	YTD Nov 2024
Hydro Generation (Hydro)		
Bay d'Espoir		
Unit 1	41.4	361.7
Unit 2	0.0	331.0
Unit 3	31.6	328.9
Unit 4	9.3	163.8
Unit 5	7.9	196.4
Unit 6	11.5	164.6
Unit 7	32.6	641.9
Subtotal Bay d'Espoir	134.3	2,188.4
Upper Salmon	50.4	469.8
Granite Canal	22.7	217.0
Hinds Lake	9.6	321.6
Cat Arm		
Unit 1	28.8	360.5
Unit 2	30.2	368.8
Subtotal Cat Arm	59.0	729.3
Paradise River	5.1	28.2
Star Lake	6.1	119.3
Rattle Brook	2.0	12.3
Nalcor Exploits	48.6	525.6
Mini Hydro	0.1	0.1
Total Hydro Generation (Hydro)	337.8	4,611.5
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	180.1
Unit 2	51.4	106.0
Unit 3	46.8	313.2
Subtotal Holyrood TGS Units	98.3	599.3
Holyrood Gas Turbine and Diesels	0.0	9.5
Hardwoods Gas Turbine	0.0	0.9
Stephenville Gas Turbine	0.0	0.3
Other Thermal	0.0	0.2
Total Thermal Generation (Hydro)	98.3	610.2
Purchases		
Requested Newfoundland Power and Vale CBPP	0.0	0.0
Capacity Assistance	0.0	0.5
Power Purchase Agreement	19.7	105.7
Secondary	0.0	3.4
Co-Generation	0.0	22.1
Subtotal CBPP	19.7	131.7
Wind Purchases	14.7	156.1
Maritime Link Imports ²	0.1	2.3
New World Dairy	0.0	0.1
Labrador Island Link Delivery to IIS ^{3,4}	116.3	639.0
Total Purchases	150.7	929.2
Total⁵	586.8	6,150.9

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 318.5 GWh less Maritime Link Exports of 202.3 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.