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October 10, 2019

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 September 2019**

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report for the Island Interconnected System as directed by the Board of Commissioners of Public Utilities in correspondence dated February 8, 2016 and with schedule modifications on July 26, 2016 and July 29, 2016.

Should you have any questions, please contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**

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

Encl.

cc: **Newfoundland Power**  
Mr. Gerard M. Hayes

**Consumer Advocate**  
Mr. Dennis M. Browne, Q.C, Browne Fitzgerald Morgan & Avis

**Industrial Customer Group**  
Mr. Paul L. Coxworthy, Stewart McKelvey  
Mr. Denis J. Fleming, Cox & Palmer

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

ecc: **Board of Commissioners of Public Utilities**

Ms. Jacqui Glynn  
PUB Official Email

**Newfoundland Power**

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**Consumer Advocate**

Mr. Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis  
Ms. Sarah G. Fitzgerald, Browne Fitzgerald Morgan & Avis  
Ms. Bernice Bailey, Browne Fitzgerald Morgan & Avis

**Industrial Customer Group**

Mr. Dean A. Porter, Poole Althouse

**Teck Resources Limited**

Mr. Shawn Kinsella



# Monthly Energy Supply Report for the Island Interconnected System for September 2019

October 10, 2019



A report to the Board of Commissioners of Public Utilities



## Contents

1.0	Introduction .....	1
2.0	System Hydrology .....	1
3.0	Production by Plant.....	3
4.0	Thermal Production and Imports.....	5
5.0	Unit Deratings .....	5



## 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 covers data for September 2019.

## 2.0 System Hydrology

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	2019 (GWh)	2018 (GWh)	20-Year Average (GWh)	Revised 2019 Minimum Storage Target (GWh) <sup>1</sup>	Maximum Operating Level (GWh)	Maximum Operating Level (%)
30-Sept-2019	1,281	1,299	1,827	1,509	2,452	52%

Reservoir inflows in September 2019 were approximately 91% of average. To date, 2019 inflows have been near average.

<sup>1</sup> 2019 minimum storage targets revised from August 31, 2019 to December 31, 2019 due to a change in the Labrador-Island Link assumptions.

1 The aggregate reservoir storage level on September 30, 2019 was 1,281 GWh, 48% below the seasonal  
2 maximum operating level and 15% (228 GWh) below the revised minimum storage level.<sup>2</sup> The current  
3 storage level compares with the 20-year average storage level for the end of September of 1,827 GWh.  
4 At the end of September 2018, aggregate storage level was 1,299 GWh.

5  
6 Given current energy storage and the revised minimum storage limits, Hydro continued to engage  
7 Nalcor Energy Marketing (“NEM”) through September 2019 to import energy on its behalf. In addition,  
8 Hydro purchased NEM’s ponded balance of 2.6 GWh on September 3, 2019. Further mitigation efforts  
9 have included the early return to service of Holyrood Units 2 and 3 and maximization of generation at  
10 the Holyrood Thermal Generating Station (“Holyrood TGS”). A combination of these efforts has helped  
11 to slow the decline of total system energy. These efforts will continue until system energy levels  
12 improve and Hydro has determined they are no longer required. At this point, Hydro does not foresee  
13 using production from standby generation to support reservoir levels.

14  
15 Figure 1 plots the 2018 and 2019 storage levels, maximum operating level storage, and the 20-year  
16 average aggregate storage for comparison.<sup>3</sup>

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<sup>2</sup> 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 TGS, and now-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.

<sup>3</sup> 2019 minimum storage targets revised from August 31, 2019 to December 31, 2019 due to a change in the Labrador-Island Link assumptions.



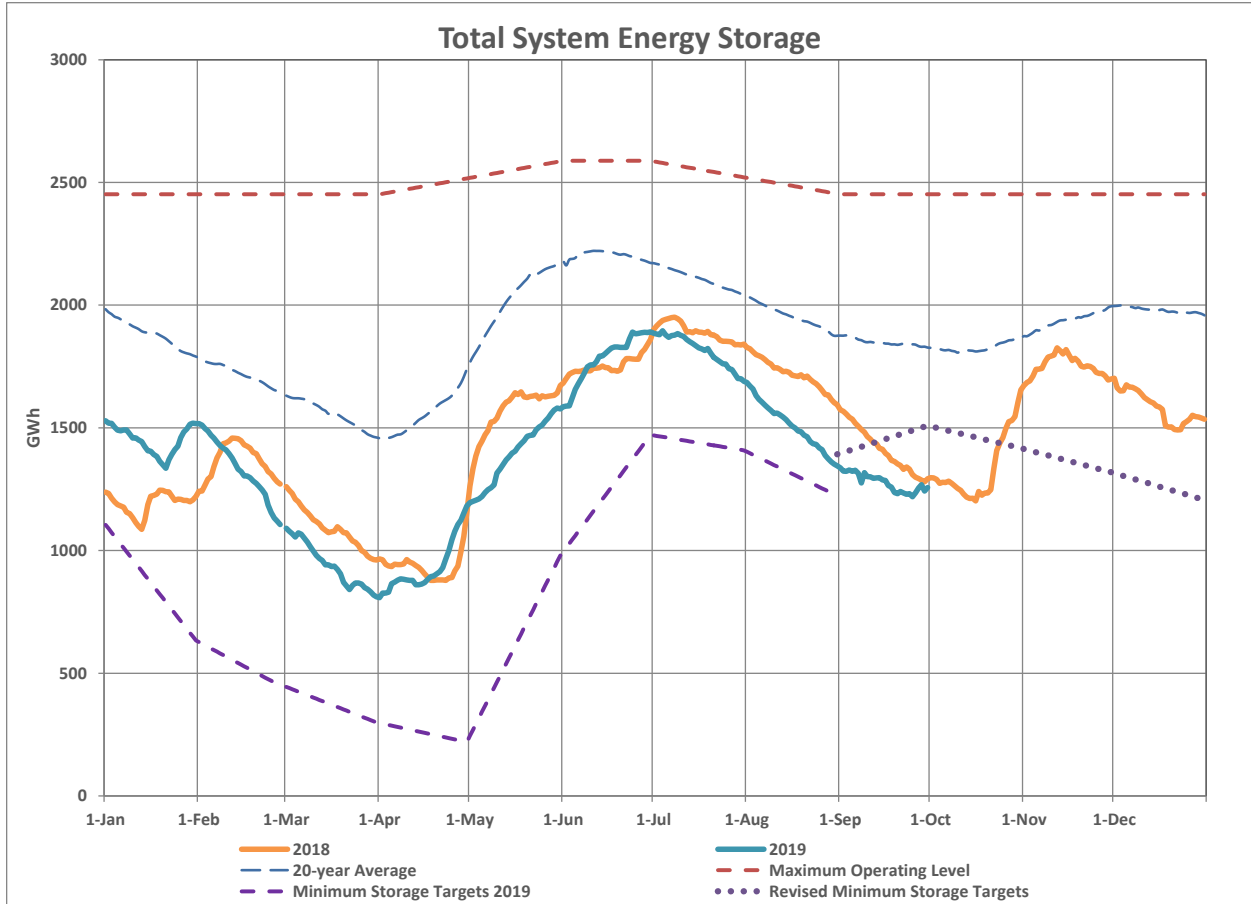


Figure 1: Total System Energy Storage for September 30, 2019

### 1 3.0 Production by Plant

2 Production during September 2019 by plant and unit, both hydraulic and thermal, is provided in Table 2.

3 Quantities imported are also provided in Table 2.

**Table 2: Generation Production from September 1 to 30, 2019<sup>4</sup>**

	<u>Generation (GWh)</u>	<u>Year to Date (GWh)</u>
<b>Hydro Generation (Hydro)</b>		
Bay d'Espoir Plant		
Unit 1	25.4	349.3
Unit 2	24.2	347.8
Unit 3	15.7	196.1
Unit 4	14.8	190.2
Unit 5	17.9	183.4
Unit 6	13.0	186.5
Unit 7	10.7	440.7
<b>Subtotal Bay d'Espoir Plant</b>	<b>121.7</b>	<b>1,893.9</b>
Upper Salmon Plant	33.1	434.0
Granite Canal Plant	21.3	192.1
Hinds Lake Plant	0.0	277.4
Cat Arm Plant		
Unit 1	32.8	328.4
Unit 2	41.8	346.7
<b>Subtotal Cat Arm Plant</b>	<b>74.6</b>	<b>675.2</b>
Paradise River	2.2	21.4
Star Lake Plant	7.2	87.2
Rattle Brook Plant	1.1	10.2
Nalcor Exploits Plants	35.4	450.1
Mini Hydro <sup>5</sup>	0.0	1.9
<b>Total Hydro Generation</b>	<b>296.6</b>	<b>4,043.3</b>
<b>Thermal Generation (Hydro)</b>		
Holyrood TGS		
Unit 1	0.0	316.7
Unit 2	57.7	304.2
Unit 3	21.3	192.9
<b>Subtotal Holyrood TGS Units</b>	<b>79.0</b>	<b>813.8</b>
Holyrood Gas Turbine and Diesels	0.3	7.9
Hardwoods Gas Turbine	0.2	1.1
Stephenville Gas Turbine	0.0	1.1
Other Thermal	0.0	0.4
<b>Total Thermal Generation</b>	<b>79.5</b>	<b>824.2</b>
<b>Purchases</b>		
Requested Newfoundland Power and Vale	0.0	0.1
Corner Brook Pulp and Paper Secondary	4.5	30.6
Corner Brook Pulp and Paper Co-Generation	3.9	45.0
Wind Purchases	14.1	126.5
Maritime Link Imports <sup>6</sup>	19.7	124.4
New World Dairy	0.3	2.4
Labrador-Island Link Imports <sup>7</sup>	0.0	214.6
<b>Total Purchases</b>	<b>42.5</b>	<b>543.5</b>
<b>Total<sup>8</sup></b>	<b>418.6</b>	<b>5,411.0</b>

<sup>4</sup> Gross generation.

<sup>5</sup> Snook's Arm Mini Hydro meter reading was unavailable until September 2019 due to a fire in the powerhouse. The year-to-date value was adjusted by -0.27 GWh due to an overestimate of generation.

<sup>6</sup> Includes purchases as a result of testing activity.

<sup>7</sup> Includes energy flows as a result of purchase and inadvertent energy.

<sup>8</sup> Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total and addition of individual components due to rounding.

## 4.0 Thermal Production and Imports

Holyrood Unit 1 was not operated during September 2019. Holyrood Unit 2 was operated for 576 hours during September 2019. Holyrood Unit 3 was operated in synchronous condenser mode for 259 hours and operated in generation mode for 267 hours in September 2019 for system requirements. Total Holyrood TGS generation was 79.0 GWh.

Standby units were operated for a total of 21.7 hours during the month. Total standby generation was 0.5 GWh. No standby generation was specifically required to support reservoir storage.

Approximately 0.04 GWh was generated to supply Emergency Energy to Nova Scotia Power on September 26, 2019, pursuant to Article 5, Schedule A3, and Schedule C9 of the Interconnection Operators Agreement<sup>9</sup> between Newfoundland and Labrador Hydro and Nova Scotia Power. Immediately following the supply of emergency energy NEM supplied commercial energy to Nova Scotia Power, resulting in a ponded balance of -0.3 GWh.

Imports on the Maritime Link were utilized in September 2019 to slow the decline of total system storage. Total imported energy over the Maritime Link was 19.7 GWh. There was no energy imported over the Labrador-Island Link in September 2019.

## 5.0 Unit Deratings

Holyrood Unit 1 remained on planned annual outage for the month of September 2019.

Holyrood Unit 2 was placed on-line on September 5, 2019. A leak was subsequently discovered on a small steam valve and the unit was taken off line to replace the valve. The unit was placed back online on September 7, 2019 with a scheduled derating to 150 MW pending completion of on-line safety valve testing. The testing was completed on September 10, 2019 and the unit was rated at full capacity of 170 MW. On September 14, 2019 there was a scheduled derating of the unit for eight hours to allow repairs of a steam header that supplies steam to the tank farm. For the remainder of September 2019 the unit was rated at full capacity.

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<sup>9</sup> A copy of the "Amended and Restated Interconnection Operators Agreement," July 31, 2014, between Hydro and Nova Scotia Power was attached as Appendix C to Hydro's correspondence to the Board on July 5, 2017 with updates and information regarding the Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System.

1 Holyrood Unit 3 remained online in synchronous condense mode until September 11, 2019, when it was  
2 taken off line to convert the unit to generation mode. The unit was placed on line on September 19,  
3 2019 with a scheduled derating to 140 MW pending completion of on-line safety valve testing. Later  
4 that same day the unit tripped due to a start-up related issue and was re-started within three hours,  
5 with the scheduled derating to 140 MW. On September 30, 2019 the on-line safety valve testing was  
6 completed and the unit was rated for full load capability of 150 MW.

7

8 The Stephenville Gas Turbine remained derated to 25 MW during the month of September 2019. It is  
9 expected that this unit will be returned to full capacity by November 15, 2019.

10

11 The Hardwoods Gas Turbine remained available at full capacity (50 MW) until September 29, 2019 when  
12 it was taken out of service for a planned outage. The unit is expected to return to service at full capacity  
13 on October 26, 2019.