

# Monthly Energy Supply Report for the Island Interconnected System

June 2018

July 11, 2018

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



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1 **1.0 Introduction**

2 On February 8, 2016, the Board of Commissioners of Public Utilities (the Board) requested  
 3 Newfoundland and Labrador Hydro (Hydro) file a bi-weekly report containing, but not limited  
 4 to, the following:

- 5 1. System Hydrology Report as contained in Hydro's Quarterly report;
- 6 2. the thermal plant operated in support of hydrology;
- 7 3. production by plant/unit; and
- 8 4. details of any current or anticipated long-term de-rating.

9  
 10 In July 2016, the Board indicated that a monthly report would henceforth be sufficient. This  
 11 report covers data for June 2018.

12  
 13 **2.0 System Hydrology**

14 Table 1 summarizes the aggregate storage position of Hydro’s reservoirs at the end of the  
 15 reporting period.

**Table 1: System Hydrology Storage Levels**

Storage Level	2018 (GWh)	2017 (GWh)	21 Year Average (GWh)	2018 Minimum Storage Target (GWh)	Maximum Operating Level (GWh)	Percent of Maximum Operating Level
30 Jun 2018	1903	2193	2189	1139	2588	74%

16 Reservoir inflows in June were approximately 35% above average. To date, 2018 inflows have  
 17 been 27% above average.

18  
 19 The aggregate reservoir storage level on June 30, 2018 was 1903 GWh, 26% below the  
 20 seasonal Maximum Operating Level (MOL) and 67% above the minimum storage level. This  
 21 storage level compares with the 21-year average storage level at the end of June of  
 22 2189 GWh. At the end of June 2017, aggregate storage level was 2193 GWh.

- 1 Figure 1 plots the 2017 and 2018 storage levels with the minimum storage target, maximum
- 2 operating level storage and the 21-year average aggregate storage for comparison.

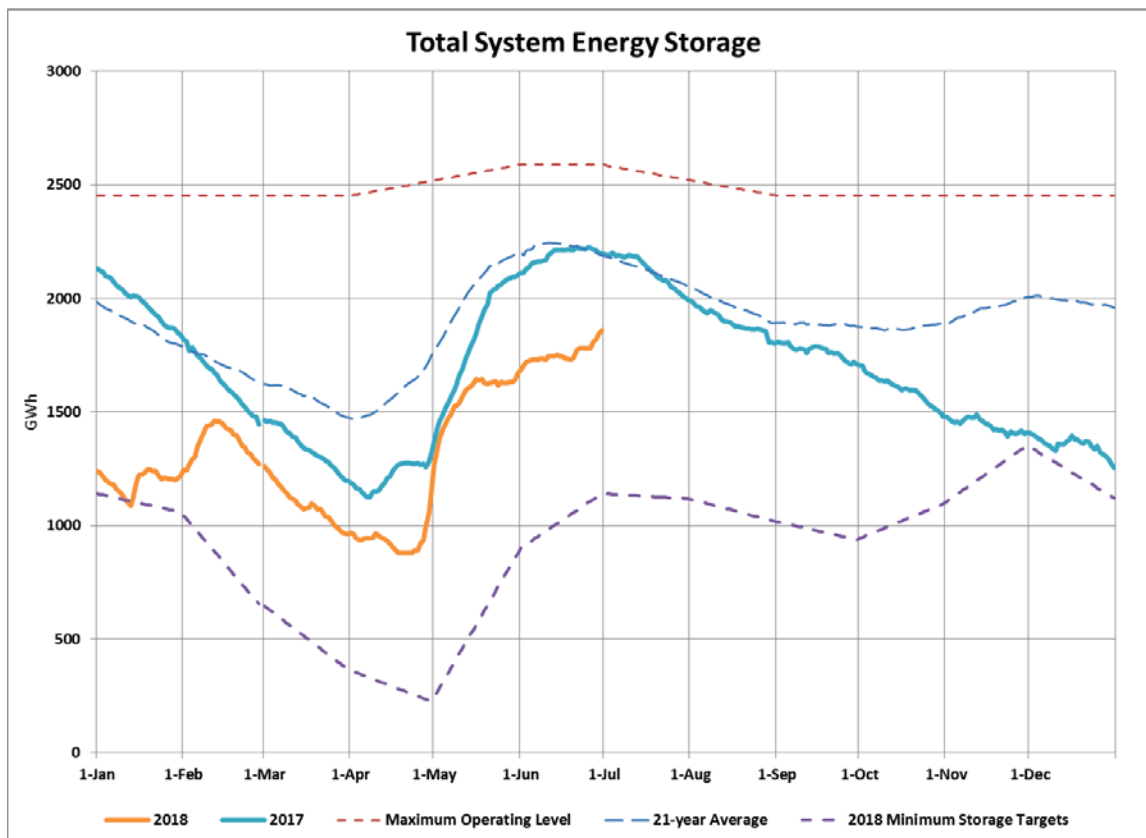


Figure 1: Total System Energy Storage – June 30, 2018

### 3 3.0 Production by Plant

- 4 Production during June 2018 by plant and unit, both hydraulic and thermal, is provided in
- 5 Table 2. The total imports are also provided in Table 2.

**Table 2: Generation Production – June 1 to June 30, 2018<sup>1</sup>**

	Generation, GWh	Year to Date, GWh
<b>Newfoundland and Labrador Hydro - Hydro Generation</b>		
Bay d'Espoir Plant		
<i>Unit 1</i>	39.6	246.5
<i>Unit 2</i>	12.2	218.3
<i>Unit 3</i>	26.2	194.4
<i>Unit 4</i>	15.2	138.6
<i>Unit 5</i>	0.7	98.6
<i>Unit 6</i>	0.1	126.3
<i>Unit 7</i>	<u>72.3</u>	<u>513.7</u>
<i>Total Bay d'Espoir Plant</i>	166.4	1536.4
Upper Salmon Plant	40.0	317.6
Granite Canal Plant	20.3	141.8
Hinds Lake Plant	41.2	184.4
Cat Arm Plant		
<i>Unit 1</i>	34.6	247.4
<i>Unit 2</i>	<u>35.8</u>	<u>254.0</u>
<i>Total Cat Arm Plant</i>	70.4	501.4
Paradise River	2.2	20.8
Star Lake Plant	11.8	68.2
Rattle Brook Plant	2.4	7.7
Nalcor Exploits Plants	50.8	288.3
Mini Hydro	0.3	1.4
<b>Total Hydro Generation</b>	<b>405.8</b>	<b>3068.0</b>
<b>Newfoundland and Labrador Hydro - Thermal Generation</b>		
Holyrood		
<i>Unit 1</i>	42.3	270.9
<i>Unit 2</i>	0.0	266.8
<i>Unit 3</i>	<u>0.0</u>	<u>176.4</u>
<i>Total Holyrood Units</i>	42.3	714.2
Holyrood GT and Diesels	3.2	41.4
Hardwoods GT	0.1	3.3
Stephenville GT	0.3	1.0
Other Thermal	0.0	0.6
<b>Total Thermal Generation</b>	<b>45.8</b>	<b>760.5</b>
<b>Purchases</b>		
Requested NP and Vale	0.0	0.7
CBPP Secondary	0.7	8.2
CBPP Cogen	6.2	36.2
Wind Purchases	14.3	112.7
Maritime Link Imports <sup>2</sup>	4.8	31.6
New World Dairy	0.2	1.4
Labrador Island Link Imports <sup>2</sup>	4.0	4.0
<b>Total Purchases</b>	<b>30.3</b>	<b>194.7</b>
<b>Total<sup>3</sup></b>	<b>481.9</b>	<b>4023.2</b>

<sup>1</sup> Gross generation.

<sup>2</sup> Includes purchases as a result of testing activity.

<sup>3</sup> Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.

1 **4.0 Thermal Production and Imports**

2 Only one Holyrood unit was required to be operational during June to meet Hydro’s customer  
3 and system reliability requirements. Unit 1 operated for 630 hours; neither Units 2 nor 3 were  
4 operated during June. Total Holyrood generation was 42.3 GWh.

5

6 Stand-by units were operated for a total of 130.8 hours during the month for reliability. Total  
7 standby generation was 3.5 GWh.

8

9 In June, a total of 8.8 GWh was imported.

10

11 **5.0 Unit Deratings**

12 Unit 1 was rated at 116 MW at the beginning of June. On June 4 the capability had reduced to  
13 100 MW and on June 21 the capability was further reduced to 88 MW due to high furnace  
14 pressure as a result of continued boiler and air heater fouling. On June 16 while on a brief  
15 planned outage to change generator brushes, a pressure gauge failed on the fuel oil system  
16 resulting in a significant spill, which had to be cleaned up before the unit could be safely  
17 returned to service. On June 17, while starting up the unit, a bearing failed on the east forced  
18 draft fan and had to be replaced. The unit returned to service on June 18 but the same  
19 bearing failed after only a few hours of operation. The bearing was again replaced and the  
20 unit was successfully returned to service on June 19.

21

22 Unit 2 was off line on planned outage for the month of June.

23

24 Unit 3 was placed in synchronous condenser operation on June 1 and remained operating as a  
25 synchronous condenser throughout June.

26

27 The Stephenville gas turbine continues to be derated to 25 MW as a result of power turbine  
28 bearing vibration and the requirement for a bellows replacement. The replacement bearing

1 has been received and is stored awaiting installation. The work to install the bearing and the  
2 replacement bellows is scheduled to start July 23 with return to service expected August 3.

3

4 The Hardwoods gas turbine is currently derated to 25 MW due to exhaust bellows cracking on  
5 End A. This was identified during inspection of the unit completed during the week of May 21.

6 Repair of the unit is being planned to return the unit to full capacity (50 MW). Generator

7 jacking system issues have delayed the unit's return to service at full capacity. The unit is now

8 expected to be returned to service prior to the end of July.