

1 Q. Please provide 2017-2018 annual reports summarizing capacity assistance operations
2 including when capacity assistance was requested, from whom, and the costs associated
3 with these instances of capacity assistance.

4

5

6 A. Please refer to:

7

8 • PUB-NLH-044, Attachment 1: "Capacity Assistance Report: Vale and Praxair," April 16,
9 2018, for Winter 2017–2018;

10

11 • PUB-NLH-044, Attachment 2: "Capacity Assistance Report Corner Brook Pulp and
12 Paper," May 30, 2018, for Winter 2017–2018; and

13

14 • PUB-NLH-044, Attachment 3: "Capacity Assistance Agreements with Vale
15 Newfoundland and Labrador Limited," April 10, 2019, for Winter 2018–2019.



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April 16, 2018

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL
A1A 5B2 Canada

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Newfoundland and Labrador Hydro – Capacity Assistance Report: Vale and Praxair

Please find enclosed the original and nine (9) copies of Newfoundland and Labrador Hydro's Capacity Assistance Report – Winter 2017-2018 outlining the dates, times, duration and system conditions, including generation available and calculation of system reserve, under which capacity assistance was requested, the capacity assistance requested and provided, and the capacity and variable payments made.

We trust the foregoing is satisfactory. If you have any questions or comments, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

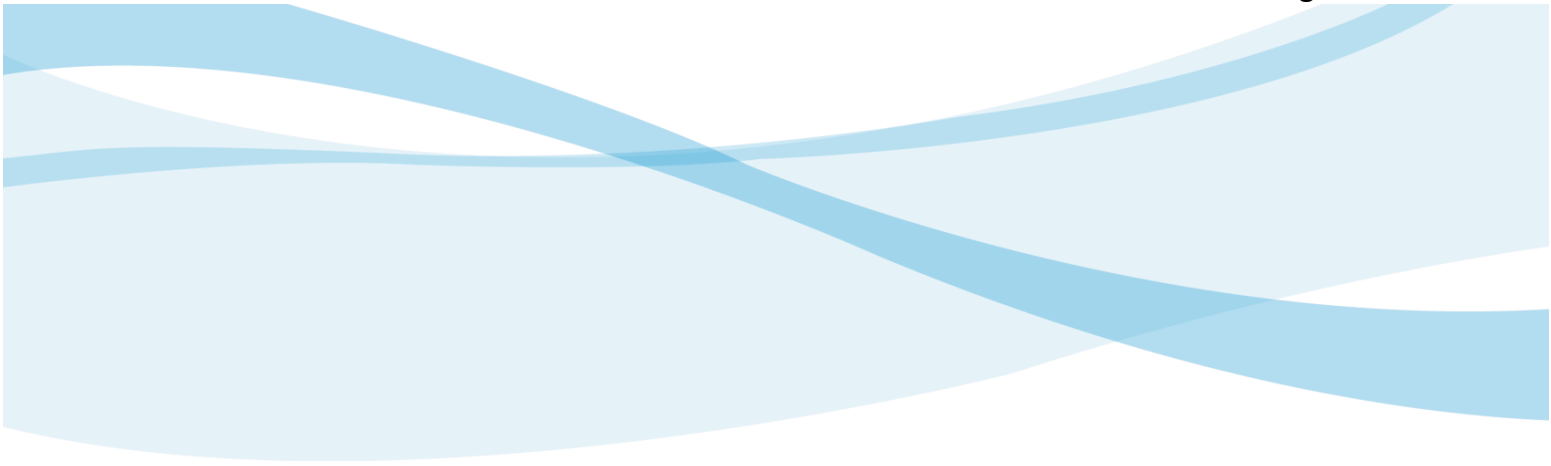
A handwritten signature in blue ink, appearing to read 'M. Ladha', written over a horizontal line.

Michael S. Ladha
Legal Counsel & Assistant Corporate Secretary
MSL/skc

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey

ecc: Denis Fleming- Cox & Palmer
Roberta Frampton Benefiel – Grand Riverkeeper® Labrador

Dennis Browne, Q.C. – Browne Fitzgerald Morgan & Avis
Danny Dumaresque
Larry Bartlett – Teck Resources Ltd.



Capacity Assistance Report

Vale and Praxair

Winter 2017-2018

April 16, 2018

A Report to the Board of Commissioners of Public Utilities

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1 **Executive Summary**

2 Newfoundland and Labrador Hydro (Hydro) presently has four capacity assistance agreements
3 in place with industrial customers; one with Corner Brook Pulp and Paper Limited (CBPP), two
4 with Vale Newfoundland and Labrador Limited (Vale), and one with Praxair Canada Inc.
5 (Praxair).

6

7 This report provides the following for winter 2017-2018 for Vale and Praxair:

- 8 i) the capacity assistance requested and provided, including dates, times and duration;
9 ii) the system conditions at the time of the capacity assistance request, including
10 generation available and calculation of system reserve; and
11 iii) payments made.

12

13 A summary of the key terms and conditions of Hydro's capacity assistance agreements with
14 Vale and Praxair is attached in Appendix A.

15

16 As per the Board of Commissioners of Public Utilities (the Board) order P.U. 34(2017), a report
17 detailing the use of the revised capacity assistance agreement with CBPP will be submitted to
18 the Board on May 30, 2018.

1 **1.0 Introduction**

2 Capacity assistance arrangements are used as a means to minimize disruptions to customers in
3 the event of a contingency or to maintain sufficient level of operating reserves for reliable
4 operation of the electrical system. This support is normally requested during times of high or
5 peak customer demand or in instances where there are issues with generation or regional
6 transmission during the winter operating season.

7
8 Hydro has two capacity assistance agreements with Vale. The first agreement, the Vale Capacity
9 Assistance Agreement, is for the supply of up to 15.8 MW of capacity assistance from Vale's
10 standby diesel generating facilities, subject to an annual test. The amount of capacity assistance
11 that was available for winter 2017-2018, confirmed during annual testing, was 7.6 MW. Order
12 No. P.U. 3(2017), issued in January 2017, approved Hydro's second capacity assistance
13 agreement with Vale, the Vale Curtailment Agreement, which provides 6 MW of load
14 curtailment by Vale.

15
16 In Order No. P.U. 55(2016), the Board approved the Capacity Assistance Agreement with Praxair
17 Canada Inc. which provides up to 5 MW of load curtailment by Praxair during winter peak
18 demand periods.

19
20 In accordance with Board direction, this report summarizes the details and costs associated
21 with Hydro's use of the capacity assistance agreements for the winter period December 1, 2017
22 to March 31, 2018.

23
24 **2.0 Capacity Assistance Operating Experience - Summary**

25 During winter of 2017-2018, Hydro made five requests for capacity assistance from Vale and
26 three requests from Praxair. A summary of the requests is provided in Table 1. Hydro did not
27 utilize the Vale Load Curtailment Agreement. On one occasion, Praxair was unable to provide
28 capacity assistance when requested by Hydro.

Table 1: Summary of Capacity Assistance Requests Vale and Praxair

Agreement	Number of Requests for Assistance	Total Number of Hours of Assistance Provided	Total Capacity Assistance Provided (equivalent kWh)
Vale Capacity Assistance	5	29.5 hours	198,884 kWh
Vale Load Curtailment	0	0 hours	0 kWh
Praxair Capacity Assistance	3	7.5 hours	37,827 kWh
2017-2018 Total	8	37 hours	236,711 kWh

1 **3.0 Capacity Assistance Requests Winter 2017-2018 - Vale and Praxair**

2 The following summaries provide an overview of the system conditions and capacity assistance
 3 provided during the capacity assistance requested events. Additional details, including start and
 4 end times, are attached in Appendices B and C. For details on system conditions, including
 5 actual peak demand values, see Appendix D for the Supply and Demand Status Reports
 6 applicable to each day, as submitted to the Board.

7
 8 **3.1 December 27, 2017 –Vale and Praxair**

9 On December 27, 2017, with a weather warning in effect for areas of the province, Island
 10 generating capacity was reduced by the derations of all Holyrood units due to air supply issues;
 11 the Stephenville gas turbine was derated due to limitations posed by the capacity of the leased
 12 engine; and forecast spinning reserve was low for both the morning and the evening peaks. To
 13 assist in maintaining adequate spinning reserves during the morning peak, standby generation
 14 was operated. The Upper Salmon unit became unavailable due to frazil ice and Holyrood Unit 3
 15 was further derated by 10 MW in afternoon, prior to the evening peak. A Level 1 alert was
 16 forecast for the evening, based on available Island reserve. In addition to starting standby
 17 generation and requesting CBPP capacity assistance, Hydro requested capacity assistance from
 18 Vale and Praxair to support Island spinning reserves throughout the day and evening periods, as
 19 follows:

- 20 • Vale Capacity Assistance: Vale provided 7.6 MW through its diesel generation from 1000
 21 to 2200 hours; and

Capacity Assistance Report Vale Praxair Winter 2017-2018

- 1 • Praxair Capacity Assistance: Praxair provided 5.0 MW of curtailment from 1730 to 2200
 2 hours.

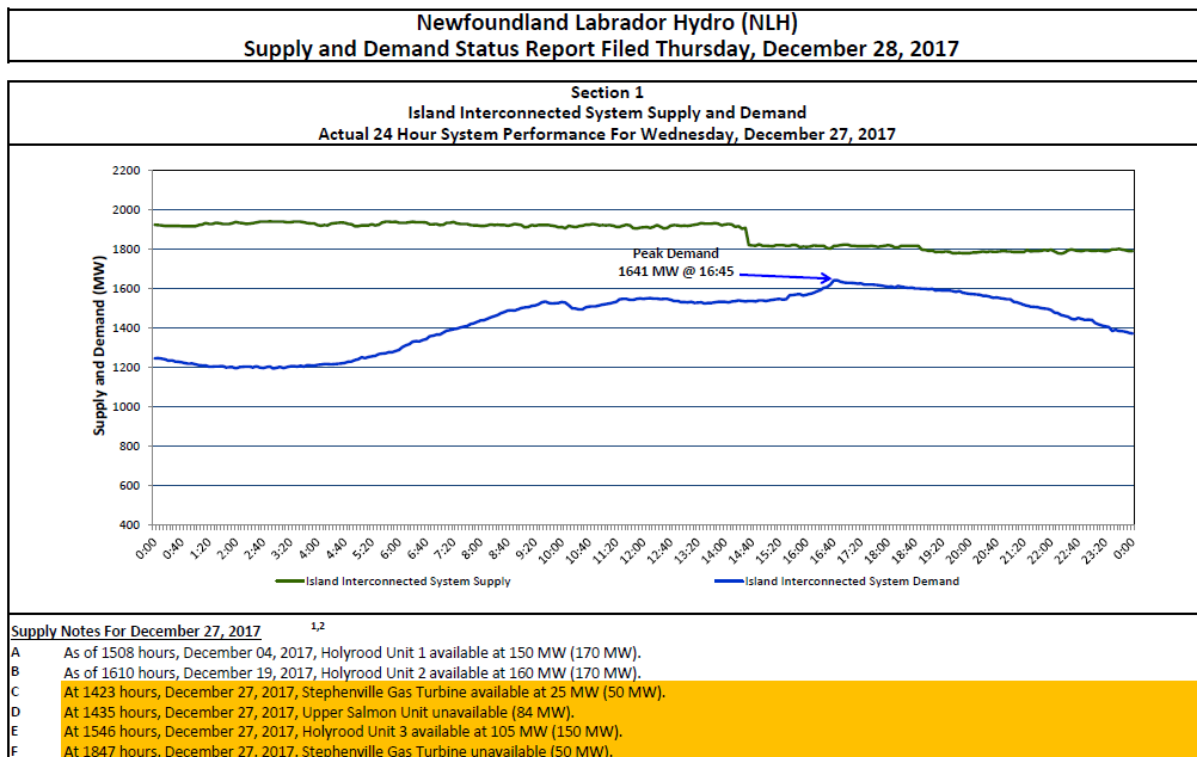


Figure 1: Supply and Demand Status Report for Wednesday, December 27, 2017

3 **3.2 January 22, 2018 – Vale**

4 On January 22, 2018, Holyrood Unit 1 was unavailable due to a boiler stop valve leak and Units
 5 2 and 3 were derated due to air supply issues; the Stephenville Gas Turbine capacity was
 6 reduced to 25 MW due to a vibration issue with the leased engine; and forecast Island reserve
 7 for the evening peak was close to that of a Level 2 alert. In addition to operating standby
 8 generation and requesting Capacity Assistance from CBPP, Hydro requested capacity assistance
 9 from Vale to support Island spinning reserves, as follows:

- 10 • Vale Capacity Assistance: Vale provided 7.6 MW through its diesel generation from 1500
 11 to 1900 hours.

Capacity Assistance Report Vale Praxair Winter 2017-2018

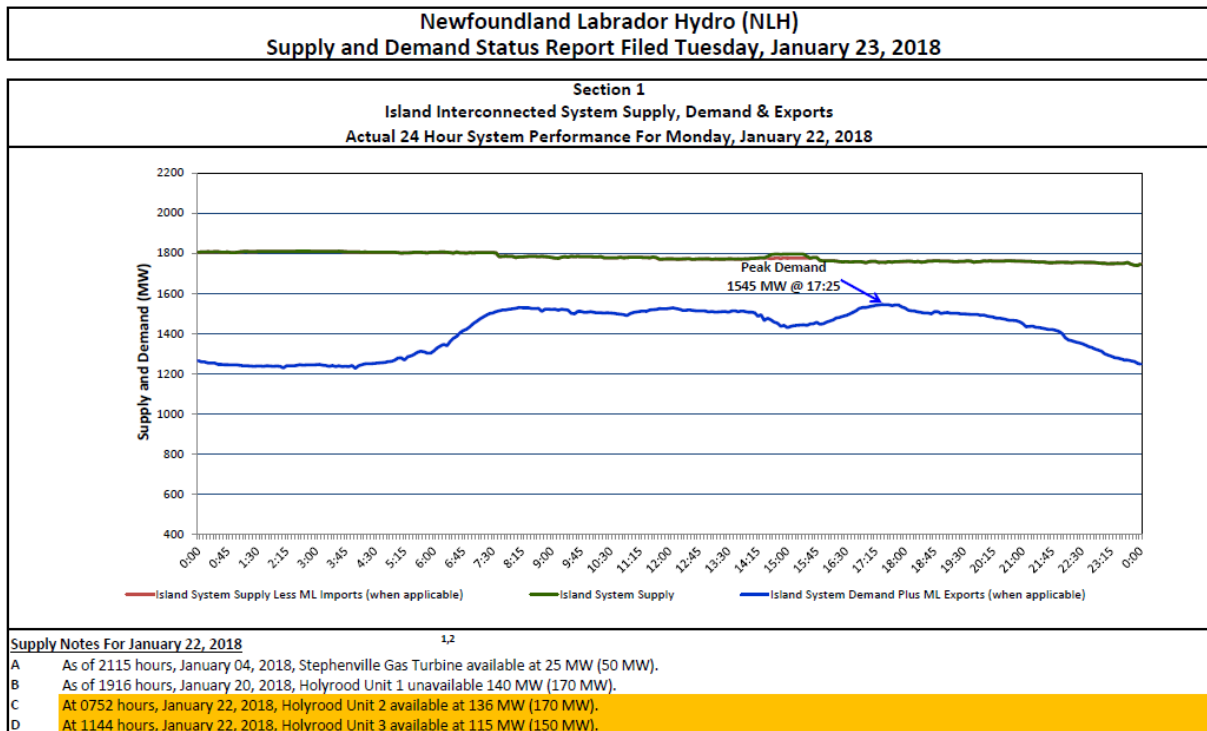


Figure 2: Supply and Demand Status Report for Monday, January 22, 2018

1 **3.3 February 13, 2018 –Vale and Praxair**

2 On February 13, 2018, Holyrood Unit 1 remained unavailable due to the boiler stop valve leak
 3 and Units 2 and 3 were derated due to air supply issues; Holyrood Unit 2 was derated to 127
 4 MW; Holyrood Unit 3 was derated to 103 MW; the Stephenville Gas Turbine remained derated
 5 to 25 MW and a Level 1 alert was forecast for the evening, based on available Island reserve. In
 6 addition to operating standby generation and requesting CBPP Capacity Assistance, Hydro
 7 requested capacity assistance from Vale and Praxair to support Island spinning reserves, as
 8 follows:

- 9 • Vale Capacity Assistance: Vale provided 7.6 MW through its diesel generation from 1600
 10 to 2330 hours; and
- 11 • Praxair Capacity Assistance: Hydro requested Praxair provide 5.0 MW of curtailment
 12 from 1600 to 1900 hours.

Capacity Assistance Report Vale Praxair Winter 2017-2018

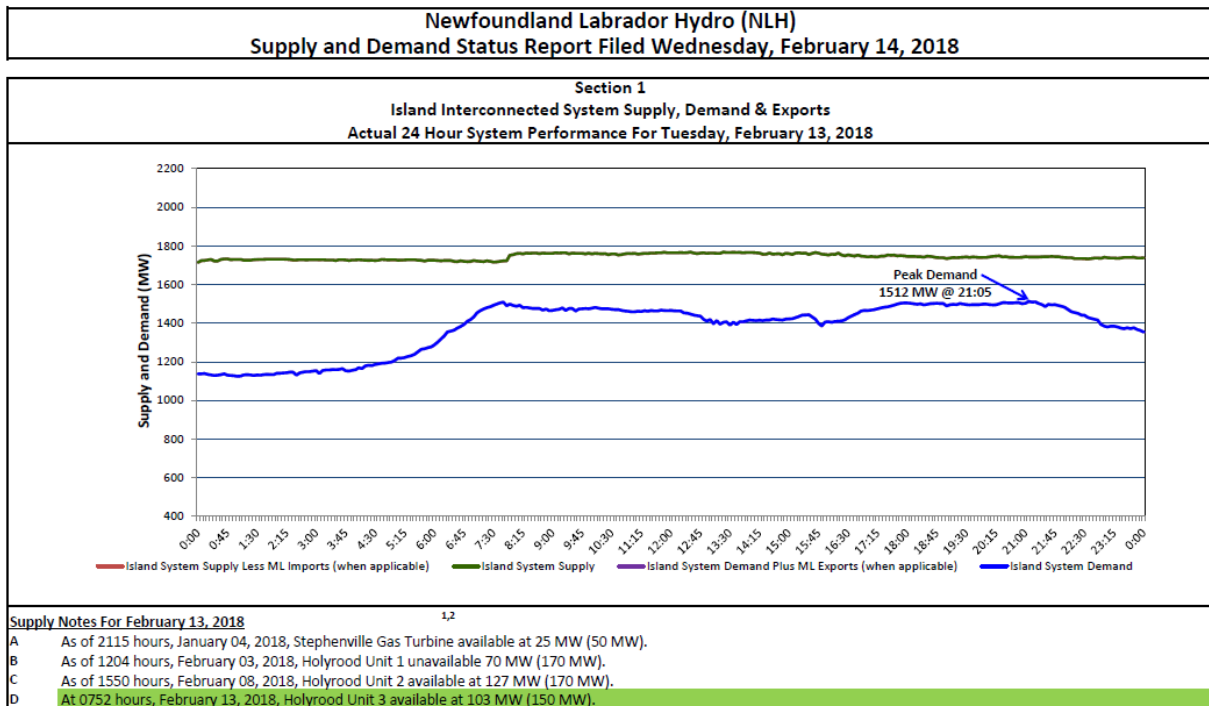


Figure 3: Supply and Demand Status Report for Tuesday, February 13, 2018

1 **3.4 February 14, 2018 – Vale and Praxair**

2 On February 14, 2018, Holyrood Unit 1 remained unavailable due to a boiler stop valve leak and
 3 Units 2 and 3 were derated due to air supply issues; Holyrood Unit 2 was derated to 124 MW
 4 and Unit 3 was derated to 110 MW; the Stephenville Gas Turbine remained derated to 25 MW;
 5 and forecast Island reserve for the morning peak was just inside Level 2 alert. In addition to
 6 starting both Hydro’s and Newfoundland Power’s standby generation and requesting CBPP
 7 Capacity Assistance, Hydro requested capacity assistance from Vale and Praxair to support
 8 Island spinning reserves, as follows:

- 9
- 10 • Vale Capacity Assistance: Vale provided 7.6 MW through its diesel generation from 0600
 11 to 0930 and 1615 to 1845 hours; and
 - 12 • Praxair Capacity Assistance: Hydro requested Praxair provide 5.0 MW of curtailment at
 0600 hours; however, Praxair was not able provide capacity assistance for this request.

Capacity Assistance Report Vale Praxair Winter 2017-2018

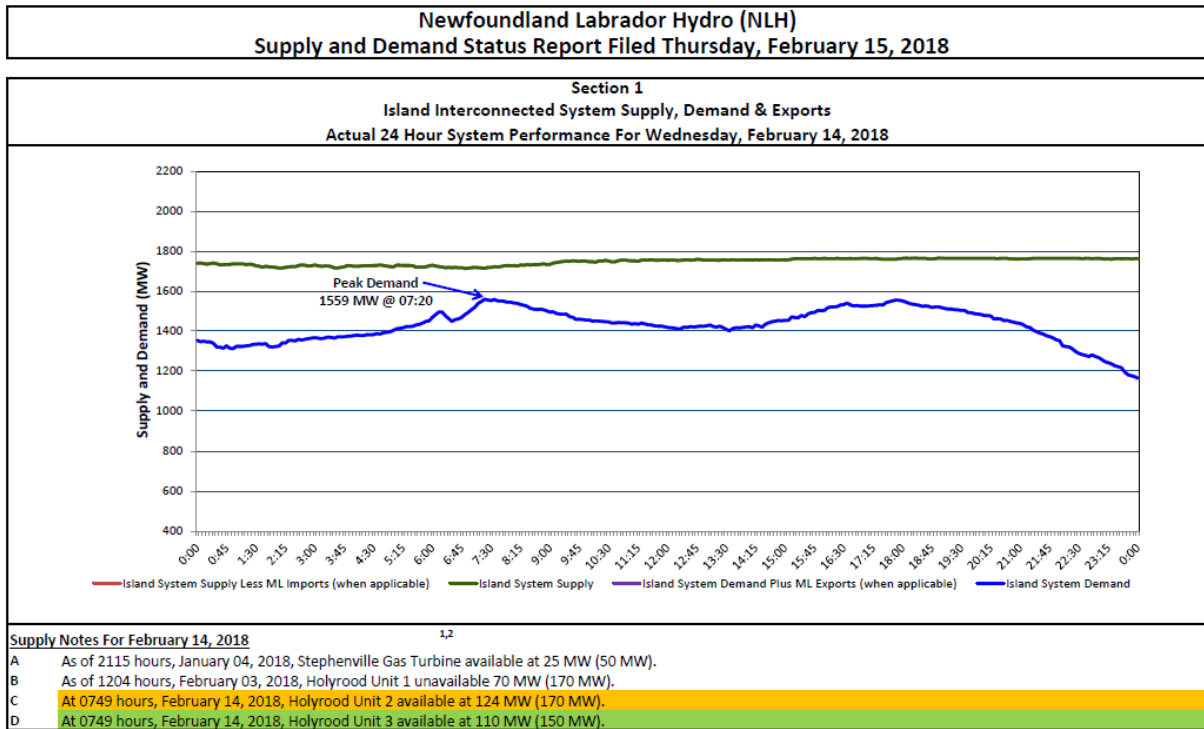


Figure 4: Supply and Demand Status Report for Wednesday, February 14, 2018

1 **4.0 Capacity Assistance Costs**

- 2 The overall cost of capacity assistance for the 2017-2018 winter season is provided in Table 2.
 3 Additional details on the contract conditions, including rate structures, are included in Appendix
 4 A.

Table 2: Summary of Capacity Assistance Costs – Vale and Praxair

Agreement	Fixed Charge (\$)	Variable Charge (\$)	Total (\$)
Vale Capacity Assistance	212,800	67,724	280,524
Vale Load Curtailment	168,000	-	168,000
Praxair Capacity Assistance ¹	70,000	7,565	77,565
2017-2018 Total			526,089

¹ On February 14, 2018, Praxair was unable to provide capacity assistance. As per contract conditions their fixed monthly payment for their total Winter Season Fixed Payment was reduced by 50% as per the contract, see Appendix A.

1 **5.0 Conclusion**

2 Hydro made eight capacity assistance requests from Vale and Praxair in Winter 2017-2018 that
3 helped Hydro ensure reliable service for its customers. While Hydro's existing capacity
4 assistance agreements with Vale and Praxair expired at the end of March 2018, Hydro
5 continues to evaluate whether these agreements should be continued through interconnection
6 as part of its focus on customer reliability.

Appendix A

Summary of Capacity Assistance Agreements

Capacity Assistance Report Vale Praxair Winter 2017-2018
Appendix A

Summary of Capacity Assistance Agreements – Vale and Praxair

Provider	Contracted Capacity	Rate Structure	Conditions
Vale Diesels	Up to 15.8 MW	<p><u>Fixed</u> \$7/kW per month for each of the four winter months December through March for a total maximum of \$442k</p> <p><u>Variable</u> Cost of fuel</p>	<ul style="list-style-type: none"> • Notification Period - 20 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 20 per winter • Total Assistance Period - 100 hours per winter • Penalties – Downward adjustment based on average capacity² • Expiry - March 31, 2018 • Test - Tested annually, for Winter 2017-2018; 7.6 MW confirmed
Vale Load Curtailment	6 MW	<p><u>Fixed</u> \$7/kW per month for each of the four winter months December through March for a total of \$168k</p> <p><u>Variable</u> \$0.20 per kW per hour for the maximum assistance provided</p>	<ul style="list-style-type: none"> • Notification Period – 60 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 10 per winter • Total Assistance Period - 50 hours per winter • Penalties - Three Strike Clause • Expiry - March 31, 2018 • Test - Tested annually, for Winter 2017-2018; 6 MW confirmed
Praxair	5 MW	<p><u>Fixed</u> \$7/kW per month for each of the four winter months December through March for a total of \$140k</p> <p><u>Variable</u> \$0.20 per kW per hour for the maximum assistance provided</p>	<ul style="list-style-type: none"> • Notification Period – 603 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 10 per winter • Total Assistance Period - 50 hours per winter • Penalties - Three Strike Clause • Expiry - March 31, 2018 • Test - Tested annually, for Winter 2017-2018; 5 MW confirmed

² The agreement was amended to provide economic incentive to Vale after multiple failures to provide the full amount of capacity assistance to Hydro early in winter 2015-2016. The amended agreement compensates Vale for making capacity available upon Hydro's request but if the full amount of capacity is not delivered upon any request by Hydro, the agreement provides for a downward adjustment to those payments by basing the capacity payment upon the average amount of capacity delivered in the winter season.

³ For the first request in a twenty-four hour period, sixty minutes notice is required. For a second request in the same twenty-four hour period notice must be given no less than sixty minutes prior to the scheduled ending of the first request.

Appendix B

Capacity Assistance Requests: Vale Capacity Assistance Agreement

Capacity Assistance Requests: Vale Capacity Assistance – Diesel Generation

Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
December 27, 2017	10:00	22:00	12:00	1894	474	140	7.6	7.6
January 22, 2018	15:00	19:00	4:00	1768	371	191	7.6	7.6
February 13, 2018	16:00	23:30	7:30	1753	417	213	7.6	7.6
February 14, 2018	6:00	9:30	3:30	1727	366	193	7.6	7.6
February 14, 2018	16:15	18:45	2:30	1757	365	174	7.6	7.6

Appendix C

Capacity Assistance Requests: Praxair Capacity Assistance Agreement

Capacity Assistance Requests: Praxair Capacity Assistance Agreement

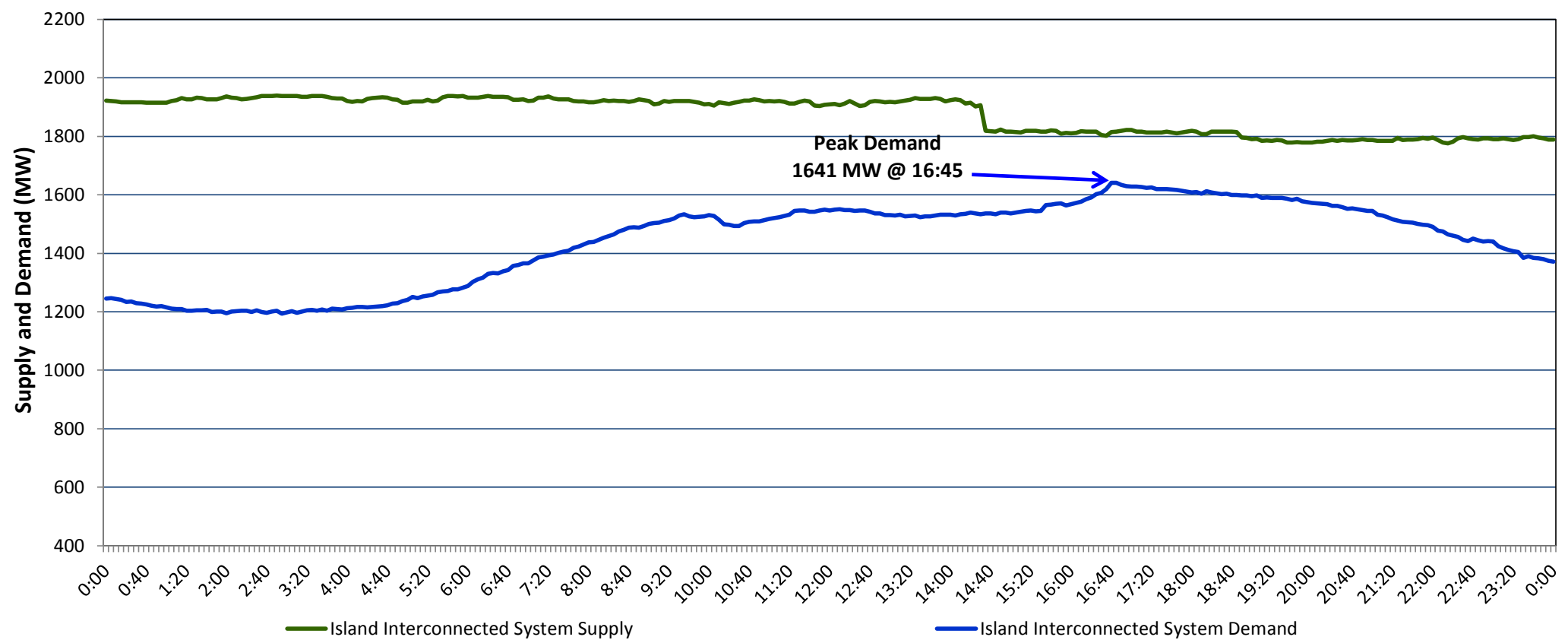
Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
December 27, 2017	17:30	22:00	4:30	1786	328	133	5.0	5.0
February 13, 2018	16:00	19:00	3:00	1753	417	213	5.0	5.0
February 14, 2018	6:00	6:00	0:00	1727	366	193	5.0	0.0

Appendix D

Supply and Demand Reports

**Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Thursday, December 28, 2017**

**Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Wednesday, December 27, 2017**



Supply Notes For December 27, 2017

- A As of 1508 hours, December 04, 2017, Holyrood Unit 1 available at 150 MW (170 MW).
- B As of 1610 hours, December 19, 2017, Holyrood Unit 2 available at 160 MW (170 MW).
- C At 1423 hours, December 27, 2017, Stephenville Gas Turbine available at 25 MW (50 MW).
- D At 1435 hours, December 27, 2017, Upper Salmon Unit unavailable (84 MW).
- E At 1546 hours, December 27, 2017, Holyrood Unit 3 available at 105 MW (150 MW).
- F At 1847 hours, December 27, 2017, Stephenville Gas Turbine unavailable (50 MW).

**Section 2
Island Interconnected Supply and Demand**

Thu, Dec 28, 2017	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,785 MW	Thursday, December 28, 2017	-5	-3	1,535	1,426
NLH Generation: ⁴	1,485 MW	Friday, December 29, 2017	-3	-4	1,545	1,436
NLH Power Purchases: ⁶	110 MW	Saturday, December 30, 2017	-7	-2	1,470	1,362
Other Island Generation:	190 MW	Sunday, December 31, 2017	-4	-1	1,495	1,387
Current St. John's Temperature:	-6 °C	Monday, January 01, 2018	-3	-4	1,530	1,421
Current St. John's Windchill:	-18 °C	Tuesday, January 02, 2018	-5	-4	1,545	1,436
7-Day Island Peak Demand Forecast:	1,545 MW	Wednesday, January 03, 2018	-5	-4	1,510	1,401

Supply Notes For December 28, 2017

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance and Maritime Link Import (when applicable).
 7. Adjusted for CBP&P and Vale and Praxair interruptible load, the impact of voltage reduction and Maritime Link Exports (when applicable).

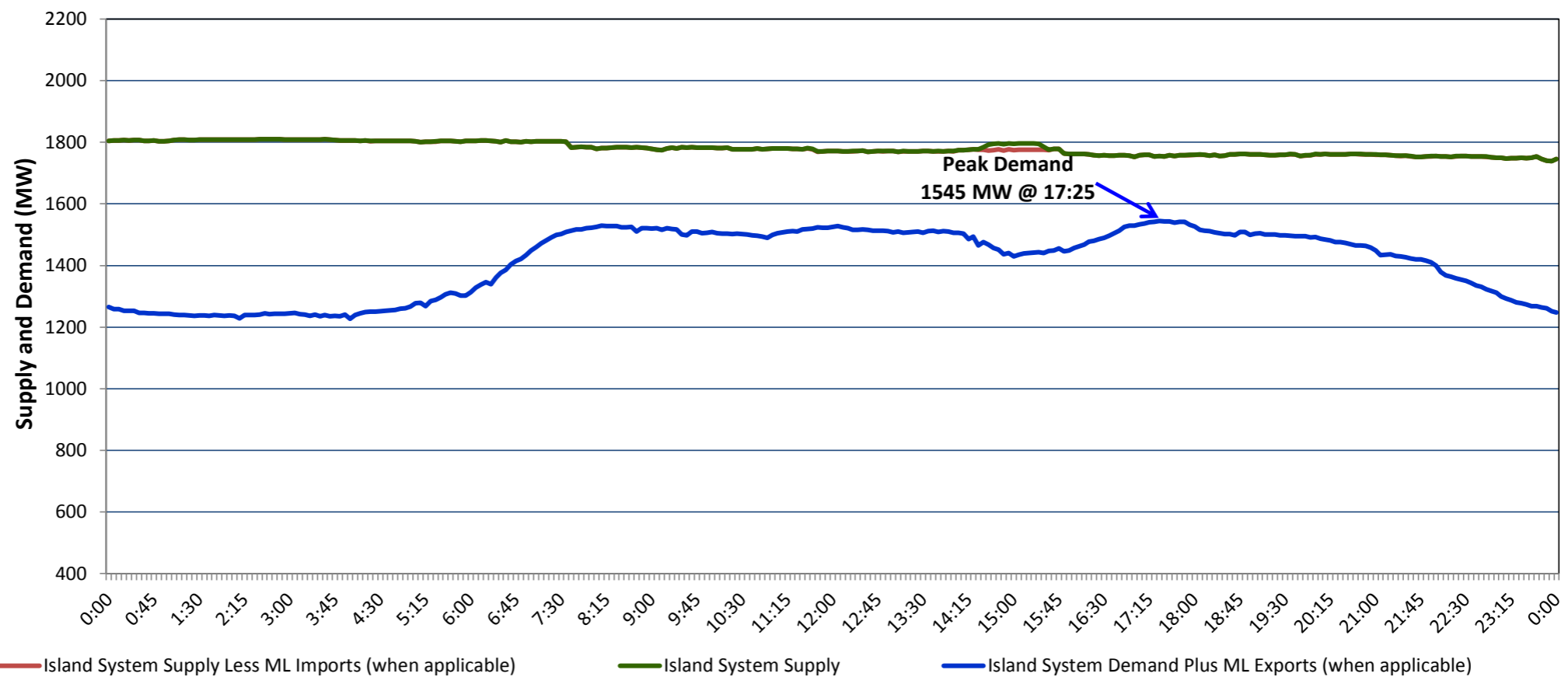
**Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak**

Wed, Dec 27, 2017	Actual Island Peak Demand ⁸	16:45	1,641 MW
Thu, Dec 28, 2017	Forecast Island Peak Demand		1,535 MW

- Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Tuesday, January 23, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Monday, January 22, 2018



Supply Notes For January 22, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1916 hours, January 20, 2018, Holyrood Unit 1 unavailable 140 MW (170 MW).
- C At 0752 hours, January 22, 2018, Holyrood Unit 2 available at 136 MW (170 MW).
- D At 1144 hours, January 22, 2018, Holyrood Unit 3 available at 115 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Tue, Jan 23, 2018	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,745 MW	Tuesday, January 23, 2018	-8	-5	1,605	1,391
NLH Generation: ⁴	1,430 MW	Wednesday, January 24, 2018	0	5	1,440	1,268
NLH Power Purchases: ⁶	110 MW	Thursday, January 25, 2018	0	-4	1,510	1,401
Maritime Link Imports:	-	Friday, January 26, 2018	-6	-5	1,540	1,372
Other Island Generation:	205 MW	Saturday, January 27, 2018	-9	-7	1,595	1,485
Current St. John's Temperature & Windchill:	-8 °C	Sunday, January 28, 2018	-4	1	1,510	1,327
7-Day Island Peak Demand Forecast:	1,605 MW	Monday, January 29, 2018	0	-2	1,465	1,357

Supply Notes For January 23, 2018

3

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

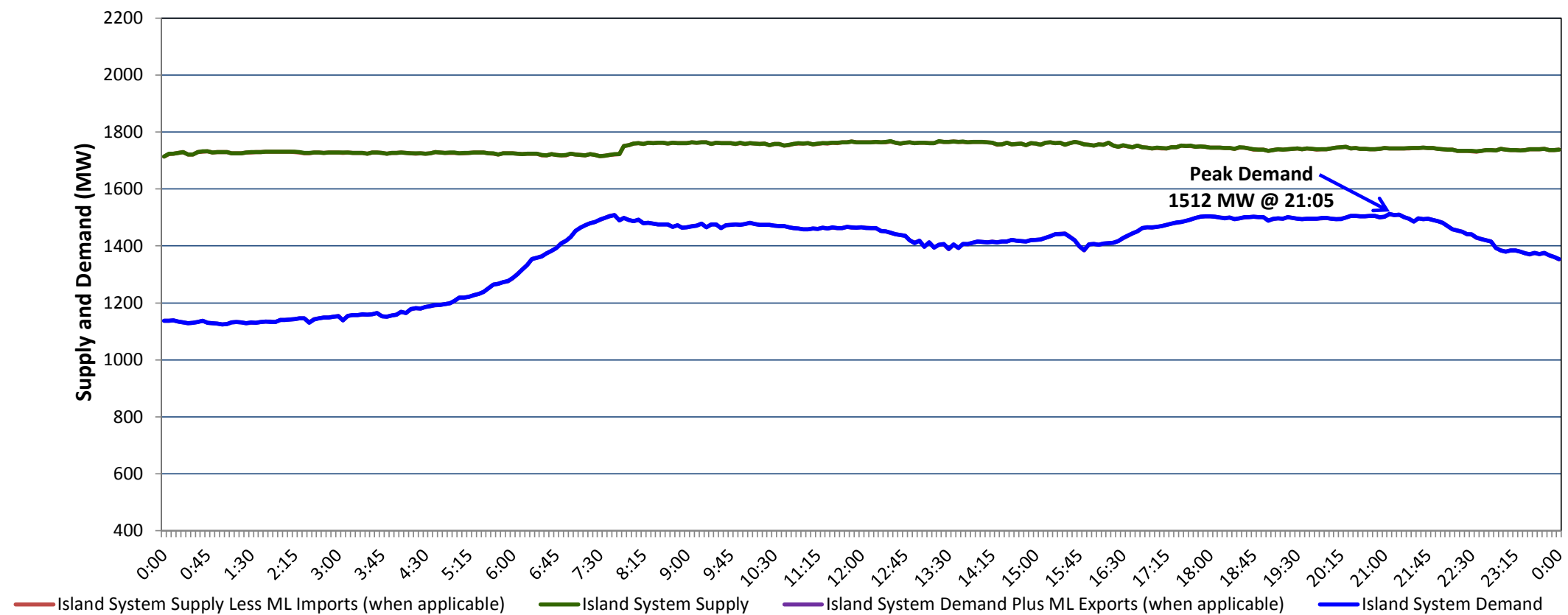
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Mon, Jan 22, 2018	Actual Island Peak Demand ⁹	17:25	1,545 MW
Tue, Jan 23, 2018	Forecast Island Peak Demand		1,605 MW

Notes: 9. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Wednesday, February 14, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Tuesday, February 13, 2018



Supply Notes For February 13, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
- C As of 1550 hours, February 08, 2018, Holyrood Unit 2 available at 127 MW (170 MW).
- D At 0752 hours, February 13, 2018, Holyrood Unit 3 available at 103 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Wed, Feb 14, 2018	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,720 MW	Wednesday, February 14, 2018	-11	-3	1,670	1,402
NLH Generation: ⁴	1,410 MW	Thursday, February 15, 2018	-1	-1	1,445	1,248
NLH Power Purchases: ⁶	105 MW	Friday, February 16, 2018	-2	1	1,375	1,263
Maritime Link Imports:	- MW	Saturday, February 17, 2018	0	-9	1,600	1,490
Other Island Generation:	205 MW	Sunday, February 18, 2018	-10	-8	1,505	1,367
Current St. John's Temperature & Windchill:	-11 °C	Monday, February 19, 2018	-7	-4	1,490	1,332
7-Day Island Peak Demand Forecast:	1,670 MW	Tuesday, February 20, 2018	-11	-2	1,605	1,387

Supply Notes For February 14, 2018

3

- E At 0749 hours, February 14, 2018, Holyrood Unit 2 available at 124 MW (170 MW).
- F At 0749 hours, February 14, 2018, Holyrood Unit 3 available at 110 MW (150 MW).

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

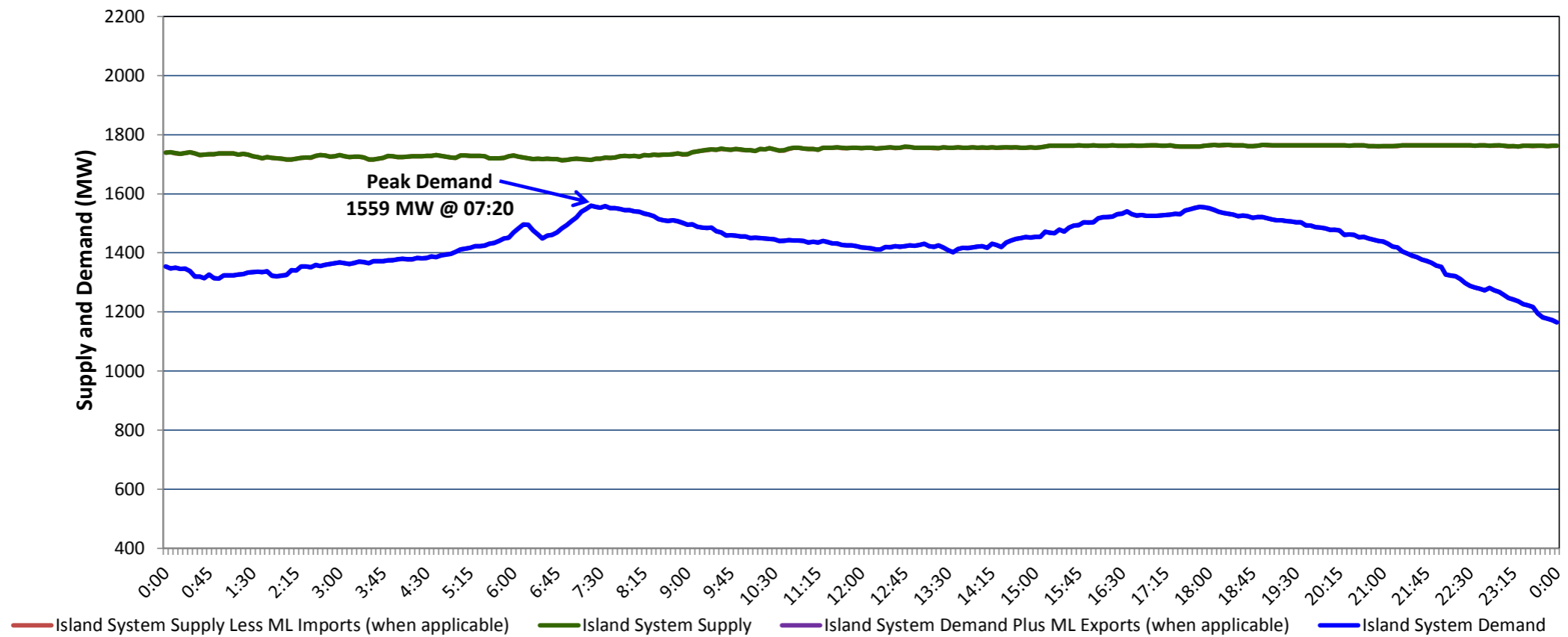
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Tue, Feb 13, 2018	Actual Island Peak Demand ⁸	21:05	1,512 MW
Wed, Feb 14, 2018	Forecast Island Peak Demand		1,670 MW

- Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Thursday, February 15, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Wednesday, February 14, 2018



Supply Notes For February 14, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
- C At 0749 hours, February 14, 2018, Holyrood Unit 2 available at 124 MW (170 MW).
- D At 0749 hours, February 14, 2018, Holyrood Unit 3 available at 110 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Thu, Feb 15, 2018	Island System Outlook ³		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,720	MW	Thursday, February 15, 2018	-1	-1	1,380	1,263
NLH Generation: ⁴	1,410	MW	Friday, February 16, 2018	-1	2	1,365	1,214
NLH Power Purchases: ⁶	95	MW	Saturday, February 17, 2018	-1	-8	1,605	1,495
Maritime Link Imports:	-	MW	Sunday, February 18, 2018	-10	-8	1,495	1,387
Other Island Generation:	215	MW	Monday, February 19, 2018	-5	-6	1,500	1,391
Current St. John's Temperature & Windchill:	-1 °C	-6 °C	Tuesday, February 20, 2018	-7	-3	1,520	1,317
7-Day Island Peak Demand Forecast:	1,690	MW	Wednesday, February 21, 2018	-1	-13	1,690	1,579

Supply Notes For February 15, 2018

3

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Wed, Feb 14, 2018	Actual Island Peak Demand ⁸	07:20	1,559 MW
Thu, Feb 15, 2018	Forecast Island Peak Demand		1,380 MW

- Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).



Hydro Place, 500 Columbus Drive,
P.O. Box 12400, St. John's, NL
Canada A1B 4K7
t. 709.737.1400 f. 709.737.1800
www.nlh.nl.ca

May 30, 2018

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL
A1A 5B2 Canada

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Newfoundland and Labrador Hydro – Capacity Assistance Report Corner Brook Pulp and Paper

Please find enclosed the original and nine (9) copies of Newfoundland and Labrador Hydro's Capacity Assistance Report – Winter 2017-2018 outlining the dates, times, duration and system conditions, including generation available and calculation of system reserve, under which capacity assistance was requested, the capacity assistance requested and provided, and the capacity and variable payments made.

We trust the foregoing is satisfactory. If you have any questions or comments, please contact the undersigned.

Yours truly,

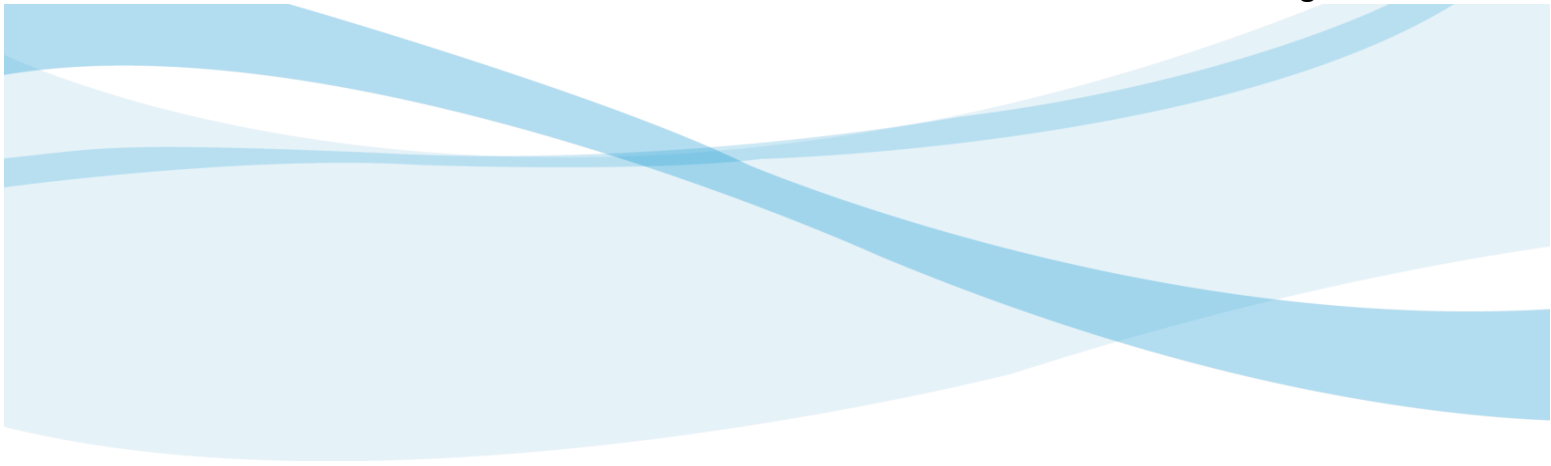
NEWFOUNDLAND AND LABRADOR HYDRO

A handwritten signature in blue ink, appearing to read "Michael S. Ladha", written over a horizontal line.

Michael S. Ladha
Legal Counsel & Assistant Corporate Secretary
MSL/skc

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey
ecc: Denis Fleming- Cox & Palmer
Roberta Frampton Benefiel – Grand Riverkeeper® Labrador

Dennis Browne, Q.C. – Browne Fitzgerald Morgan & Avis
Danny Dumaresque
Larry Bartlett – Teck Resources Ltd.



Capacity Assistance Report
Corner Brook Pulp and Paper
Winter 2017-2018

May 30, 2018

A Report to the Board of Commissioners of Public Utilities

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Capacity Assistance Report Corner Brook Pulp and Paper Winter 2017-2018

Appendices

Appendix A: Summary of Capacity Assistance Agreements

Appendix B: Capacity Assistance Requests - Corner Brook Pulp and Paper

Appendix C: Supply and Demand Reports

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

1 **Background**

2 Newfoundland and Labrador Hydro (Hydro) had four capacity assistance agreements in place
3 for winter 2017-2018 with industrial customers; one with Corner Brook Pulp and Paper Limited
4 (CBPP), two with Vale Newfoundland and Labrador Limited (Vale), and one with Praxair Canada
5 Inc. (Praxair).

6

7 This report provides the following for winter 2017-2018 for Corner Brook Pulp and Paper:

8 i) the capacity assistance requested and provided, including dates, times, and duration;

9 ii) the system conditions at the time of the capacity assistance request, including
10 generation available and calculation of system reserve; and

11 iii) payments made.

12

13 A summary of the key terms and conditions of Hydro's capacity assistance agreements with
14 Corner Brook Pulp and Paper is attached as Appendix A.

15

16 Details on the use of the capacity assistance agreements with Vale and Praxair can be found in
17 Hydro's report entitled "*Capacity Assistance Report – Vale and Praxair – Winter 2017-2018*"
18 filed with the Board on April 16, 2018, as per P.U. 55(2016) and P.U. 3(2017).

1 **1.0 Introduction**

2 Capacity assistance arrangements are used as a means to minimize disruptions to customers in
3 the event of a contingency or to maintain sufficient level of operating reserves for reliable
4 operation of the electrical system. This support is normally requested during times of high or
5 peak customer demand or instances where there are issues with generation or regional
6 transmission during the winter operating season.

7

8 Hydro has one capacity assistance agreement with Corner Brook Pulp and Paper. In Board
9 Order P.U. 34(2017), on October 31, 2017, the Board approved a revised capacity assistance
10 agreement with Corner Brook Pulp and Paper Limited, effective as of November 1, 2017, which
11 provides for up to 90 MW of winter capacity assistance to Hydro. The revised agreement
12 provides: (i) operational flexibility for six months of the year instead of four months; (ii)
13 improved response time with a 10-minute notification period instead of 20 minutes; and (iii)
14 increased security for long-term planning due to the extended term. The revised agreement
15 combines the previous Capacity Assistance Agreements into one single revised agreement (the
16 “Revised Capacity Assistance Agreement”), and provides 90 MW of capacity assistance to
17 Hydro, and extends the term to the earlier of April 30, 2022, or the commissioning of the
18 Muskrat Falls Generating Plant.

19

20 In accordance with Board direction, this report summarizes the details and costs associated
21 with Hydro’s use of the capacity assistance agreement with Corner Brook Pulp and Paper from
22 November 1, 2017 to April 30, 2018.

1 **2.0 Capacity Assistance Operating Experience - Summary**

2 During the winter of 2017-2018, Hydro made nine requests¹ for capacity assistance from Corner
 3 Brook Pulp and Paper. A summary of the requests is provided in Table 1.²

Table 1: Summary of Capacity Assistance Requests Corner Brook Pulp and Paper

Agreement	Number of Requests for Assistance	Total Number of Hours of Assistance Provided	Total Capacity Assistance Provided (equivalent kWh)
2017-2018 Corner Brook Pulp and Paper Assistance	9	46 hours	2,489,617kWh

4 **3.0 Capacity Assistance Requests Winter 2017-2018 – Corner Brook Pulp and**
 5 **Paper**

6 The following summaries provide an overview of the system conditions and capacity assistance
 7 provided during the capacity assistance requested events. Additional details, including start and
 8 end times, is attached as Appendix B. For details on system conditions, including actual peak
 9 demand values, please refer to Appendix C for the Supply and Demand Status Reports
 10 applicable to each day, as submitted to the Board.

11

12 **3.1 December 2, 2017**

13 On December 2, 2017, Island generating capacity was reduced due to Holyrood Unit 1 and
 14 Hinds Lake Unit being unavailable; the Stephenville Gas Turbine was derated due to limitations
 15 posed by the capacity of the leased engine; the Hardwoods Gas Turbine was derated as one
 16 end was unavailable and the spinning reserves outlook for the morning was low. To assist in
 17 maintaining adequate spinning reserves during the morning peak, Hydro standby generation

¹ There was high power testing planned for the Maritime Link from 2200 hours on January 9, 2018 to 0600 hours on January 10, 2018. Additional capacity was needed on the system to ensure system security and reliability during the testing. In order to facilitate this testing Hydro requested an Extended Duration Capacity Assistance for 50 MW for the period. This is consistent with Section 2.05 of the Capacity Assistance Agreement and did not count against Hydro for the number of times the Capacity Assistance Agreement can be enacted. Hydro paid the rates as outlined in section 3.03 of the Capacity Assistance Agreement and then recovered these same charges from Emera. This call for Extended Duration Capacity Assistance is not included in any of the results in the following sections as it was voluntary and costs were flowed through Hydro to Emera.

² Testing resulted in 73 MW of Capacity Assistance available until January 22, 2018, with the full 90 MW available thereafter.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

1 was operated. In addition, Newfoundland Power was requested to maximize their hydraulic
 2 generation and Corner Brook Pulp and Paper provided 20 MW of capacity assistance from 0830
 3 to 1230 hours to support Island spinning reserves throughout the morning period.

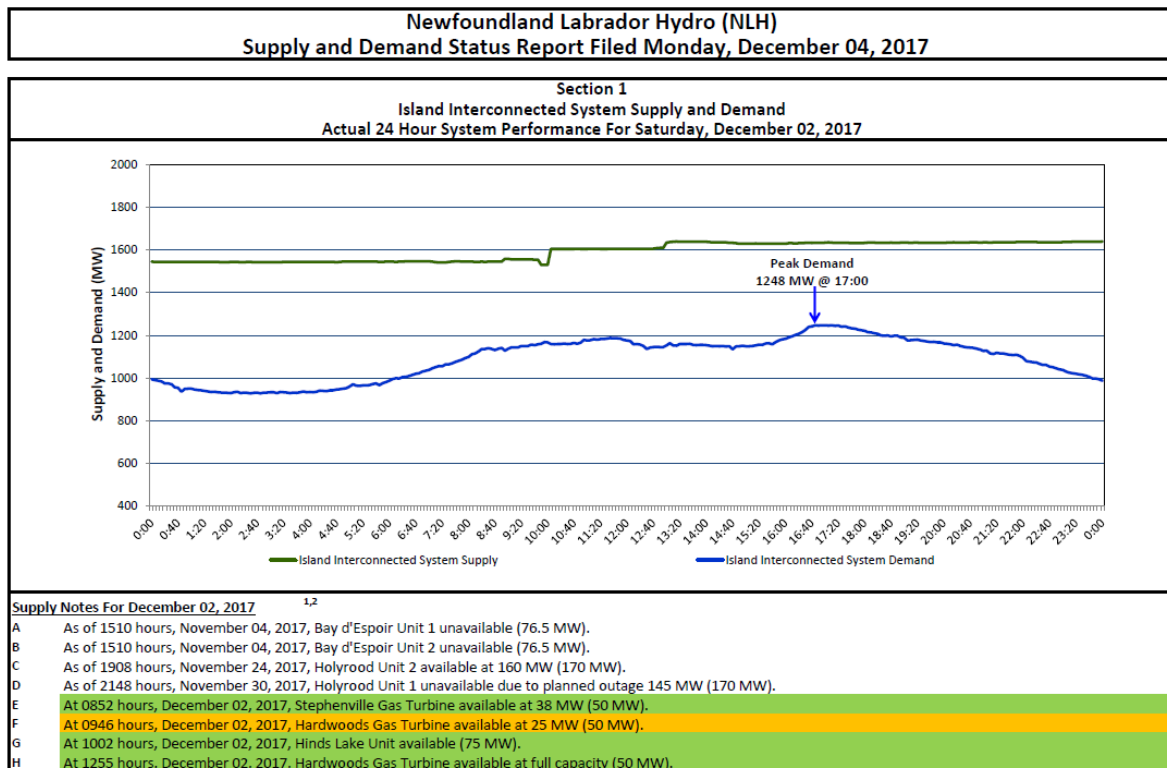


Figure 1: Supply and Demand Status Report for December 2, 2017

4 **3.2 December 27, 2017**

5 On December 27, 2017, with a weather warning in effect for areas of the province, Island
 6 generating capacity was reduced by the derations of all Holyrood units due to air supply issues;
 7 the Stephenville Gas Turbine was derated due to limitations posed by the capacity of the leased
 8 engine; and forecast spinning reserve was low for both the morning and the evening peaks. To
 9 assist in maintaining adequate spinning reserves during the morning peak, standby generation
 10 was operated. The Upper Salmon unit became unavailable due to frazil ice and Holyrood Unit 3
 11 was further derated by 10 MW in afternoon, prior to the evening peak. A Level 1 alert was
 12 forecast for the evening, based on available Island reserve. In addition to starting standby

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

1 generation and requesting capacity assistance from Vale and Praxair, to support Island spinning
 2 reserves throughout the day and evening periods, Corner Brook Pulp and Paper provided 20
 3 MW of capacity assistance from 1000 hours to 1600 hours, and 40 MW of capacity assistance
 4 from 1600 hours to 2200 hours.

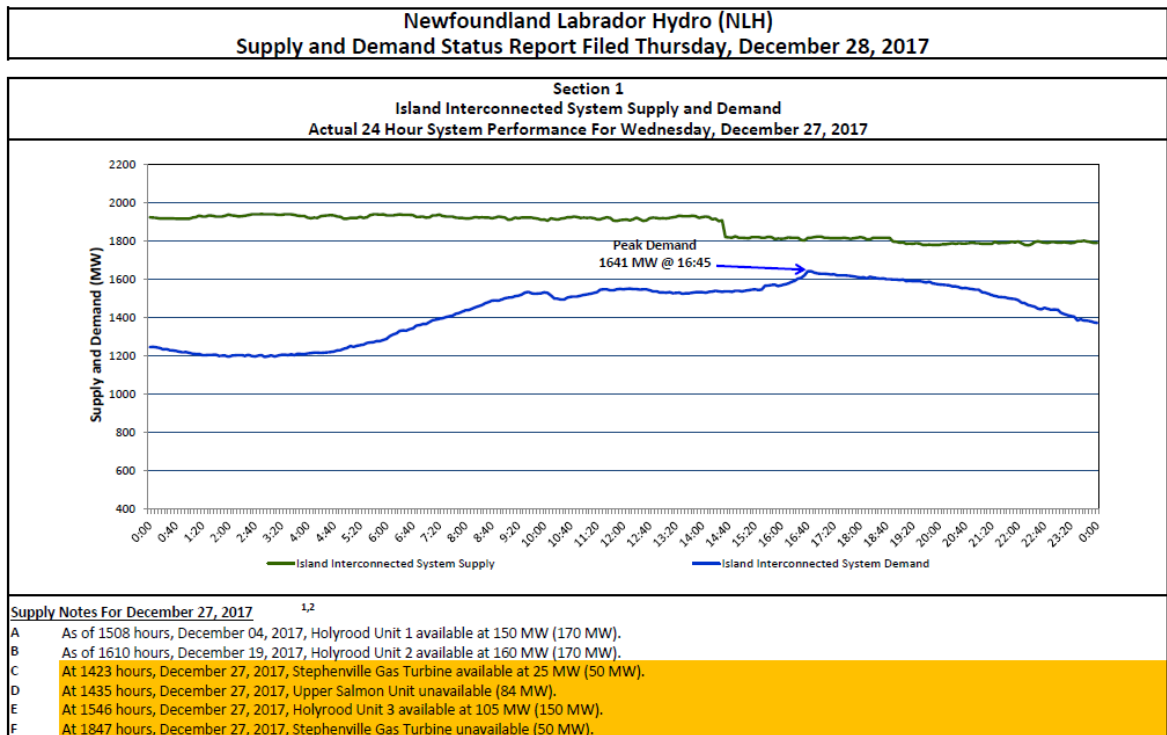


Figure 2: Supply and Demand Status Report for December 27, 2018

5 **3.3 January 22, 2018**

6 On January 22, 2018, Holyrood Unit 1 was unavailable due to a boiler stop valve leak and Units
 7 2 and 3 were derated due to air supply issues; the Stephenville Gas Turbine capacity was
 8 reduced to 25 MW due to a vibration issue with the leased engine; and forecast Island reserve
 9 for the evening peak was close to that of a Level 2 alert. In addition to operating standby
 10 generation and requesting capacity assistance from Vale, and to support Island spinning
 11 reserves, Corner Brook Pulp and Paper provided 90 MW of capacity assistance from 1500 hours
 12 to 2100 hours.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

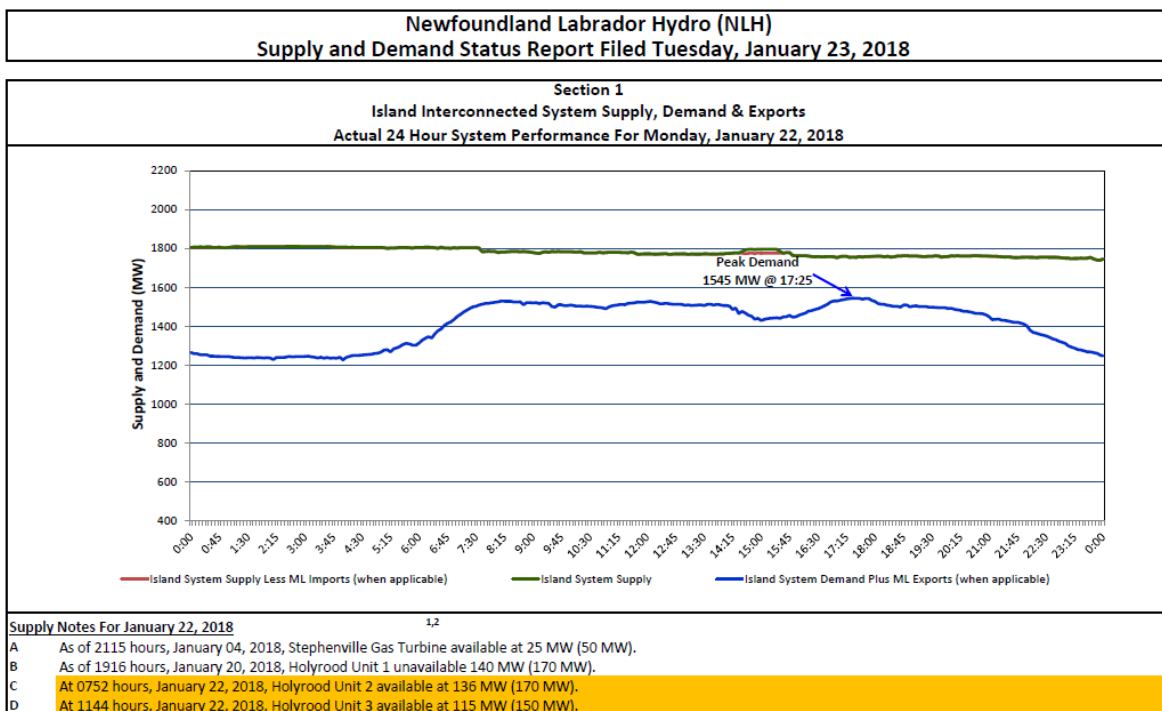


Figure 3: Supply and Demand Status Report for January 22, 2018

1 **3.4 January 23, 2018**

2 On January 23, 2018, Holyrood Units 2 and 3 were derated due to air supply issues; Holyrood
 3 Unit 1 was unavailable; the Stephenville Gas Turbine was derated due to limitations posed by
 4 the capacity of the leased engine and the spinning reserves outlook for the morning was low.
 5 To assist in maintaining adequate spinning reserves during the morning peak, Hydro standby
 6 generation was operated. In addition, Newfoundland Power was requested to maximize their
 7 hydraulic generation and Corner Brook Pulp and Paper provided 90 MW of capacity assistance
 8 from 0700 hours to 1100 hours to support Island spinning reserves throughout the morning
 9 period.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

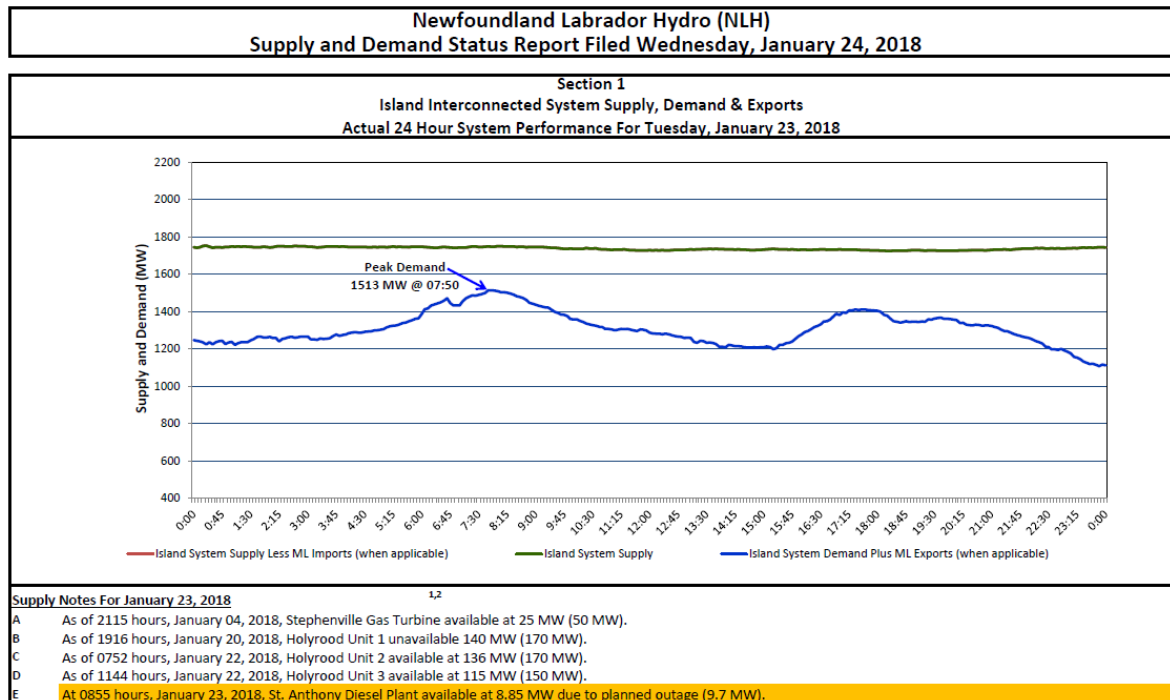


Figure 4: Supply and Demand Status Report for January 23, 2018

1 **3.5 February 13, 2018**

2 On February 13, 2018, Holyrood Unit 1 remained unavailable due to the boiler stop valve leak
 3 and Units 2 and 3 were derated due to air supply issues; Holyrood Unit 2 was derated to 127
 4 MW; Holyrood Unit 3 was derated to 103 MW; the Stephenville Gas Turbine remained derated
 5 to 25 MW and a Level 1 alert was forecast for the evening, based on available Island reserve. In
 6 addition to operating standby generation and requesting capacity assistance from Vale and
 7 Praxair, Corner Brook Pulp and Paper provided 90 MW of capacity assistance from 1600 hours
 8 to 2000 hours.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

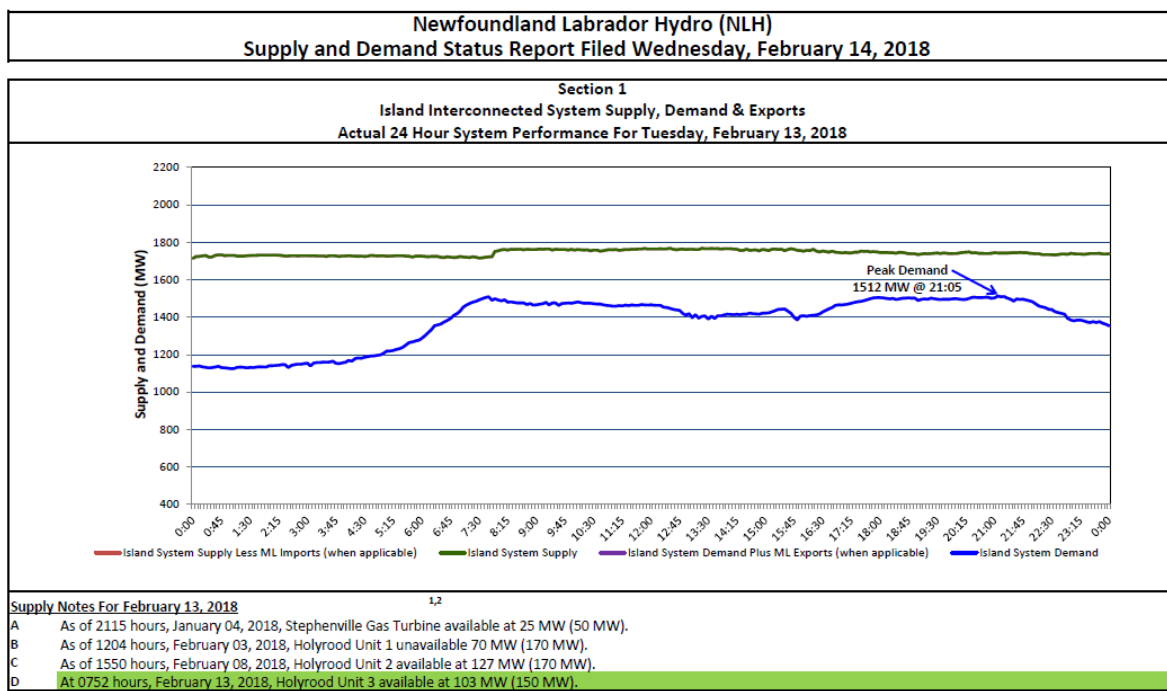


Figure 5: Supply and Demand Status Report for February 13, 2018

1 **3.6 February 14, 2018**

2 On February 14, 2018, Holyrood Unit 1 remained unavailable due to a boiler stop valve leak and
 3 Units 2 and 3 were derated due to air supply issues; Holyrood Unit 2 was derated to 124 MW
 4 and Unit 3 was derated to 110 MW; the Stephenville Gas Turbine remained derated to 25 MW;
 5 and forecast Island reserve for the morning peak was just inside Level 2 alert. In addition to
 6 starting both Hydro's and Newfoundland Power's standby generation and requesting capacity
 7 assistance from Vale and Praxair, Corner Brook Pulp and Paper provided 90 MW of capacity
 8 assistance from 0630 hours to 1230 hours to support Island spinning reserves.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

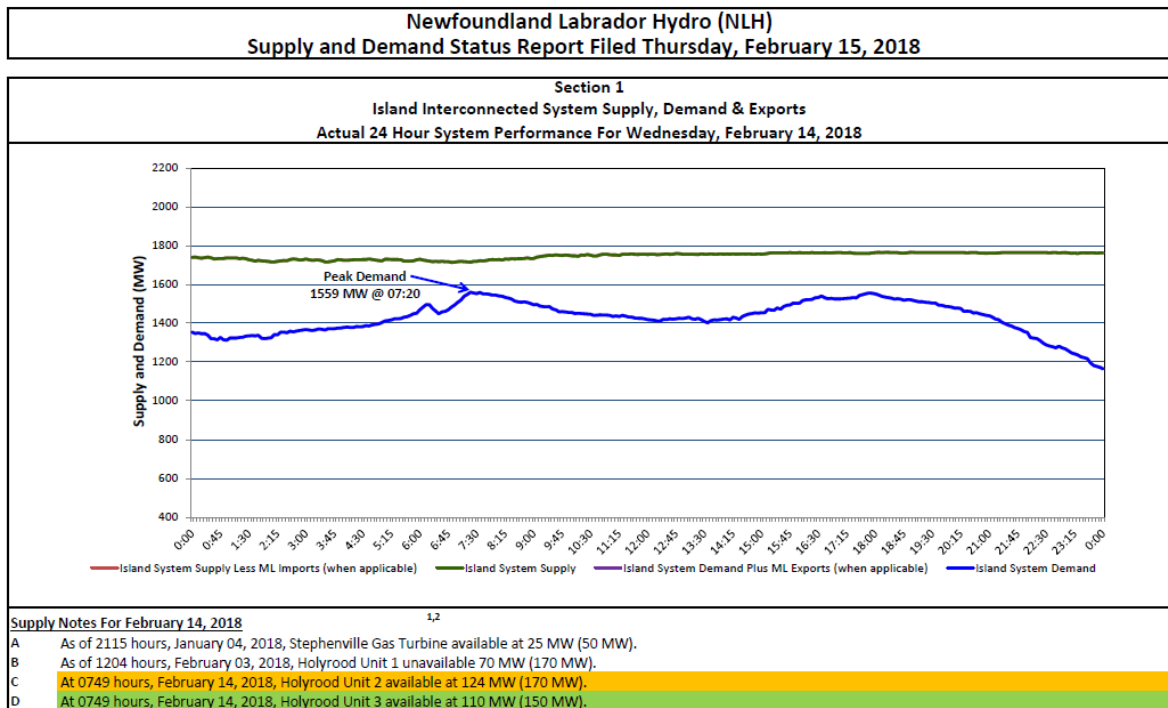


Figure 6: Supply and Demand Status Report for February 14, 2018

1 3.7 February 17, 2018

2 On February 17, 2018, Holyrood Units 2 and 3 were derated due to air supply issues; Holyrood
 3 Unit 1 was unavailable; the Stephenville Gas Turbine was derated due to limitations posed by
 4 the capacity of the leased engine and the spinning reserves outlook for the day was indicated to
 5 be low for both the morning and the evening peaks. To assist in maintaining adequate spinning
 6 reserves during the evening peak, Hydro standby generation was operated. In addition,
 7 Newfoundland Power and Deer Lake Power were requested to maximize their hydraulic
 8 generation and Newfoundland Power standby generation was operated. Forecast Island
 9 available reserve for the evening was just outside a Level 1 alert. Corner Brook Pulp and Paper
 10 provided 40 MW of capacity assistance from 1700 hours to 2300 hours to support Island
 11 spinning reserves throughout the evening period.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

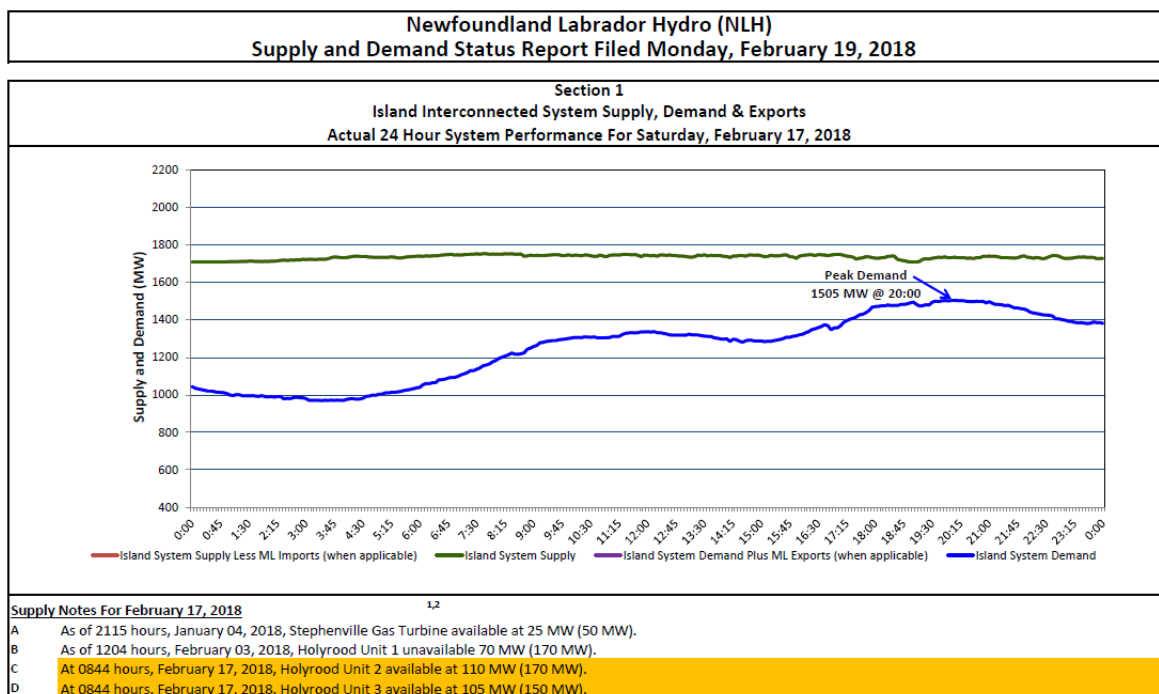


Figure 7: Supply and Demand Status Report for February 17, 2018

- 1 **3.8 February 18, 2018**
- 2 On February 18, 2018, Holyrood Unit 1 continued to be unavailable; Holyrood Units 2 and 3
- 3 were derated due to air supply issues; the Stephenville Gas Turbine capacity was reduced to 25
- 4 MW due to a lease engine vibration issue; Granite Canal Unit became unavailable in the early
- 5 morning due to frazil ice and forecast Island reserve for the morning peak was just outside a
- 6 Level 1 alert. To assist in maintaining adequate spinning reserves during the morning peak,
- 7 Hydro standby generation was operated. In addition, Newfoundland Power and Deer Lake
- 8 Power were requested to maximize their hydraulic generation and Newfoundland Power
- 9 standby generation was operated. Corner Brook Pulp and Paper provided 40 MW of capacity
- 10 assistance from 0700 hours to 1100 hours to support Island spinning reserves.

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

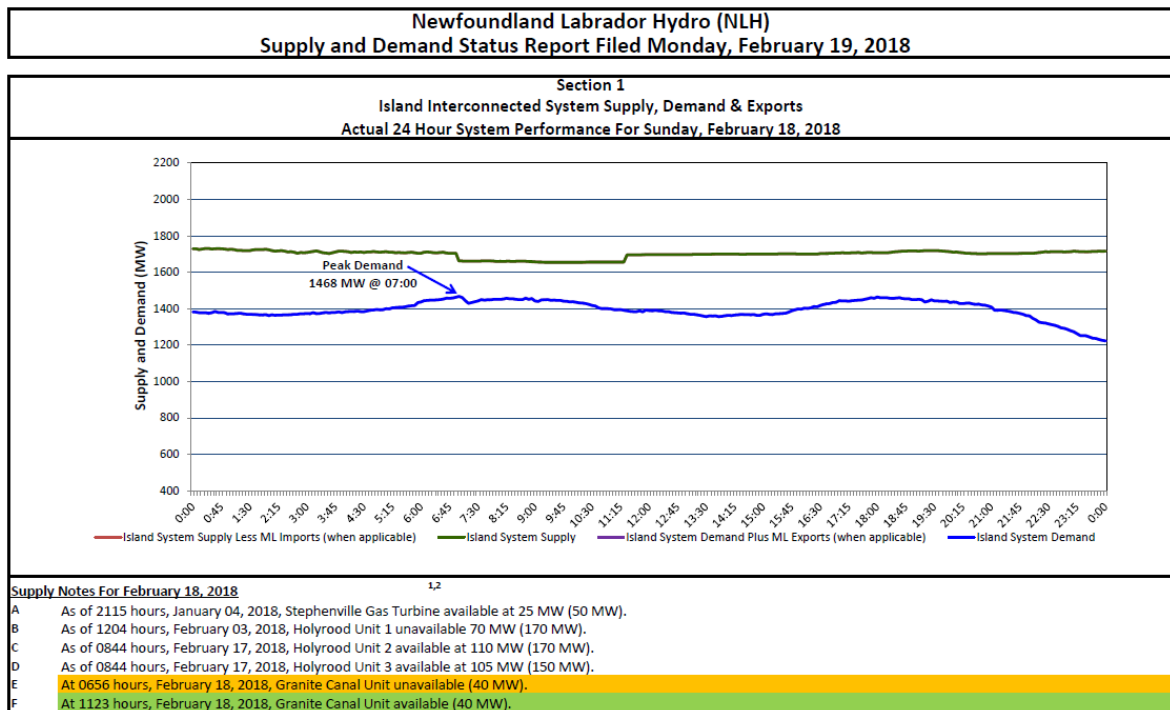


Figure 8: Supply and Demand Status Report for February 18, 2018

1 **4.0 Capacity Assistance Costs**

- 2 The overall cost of capacity assistance for the 2017-2018 winter season is provided in Table 2.
 3 Additional details on the contract conditions, including rate structures, are included as
 4 Appendix A.

Table 2: Summary of Capacity Assistance Costs – Corner Brook Pulp and Paper

Corner Brook Pulp and Paper Capacity Assistance Agreement	Fixed Charge (\$)	Variable Charge (\$)	Total (\$)
Winter 2017-2018	2,355,157	677,138	3,032,295

5 **5.0 Conclusion**

- 6 Hydro made nine capacity assistance requests from Corner Brook Pulp and Paper in Winter
 7 2017-2018 that helped Hydro ensure reliable service for its customers. While Hydro’s existing
 8 capacity assistance agreements with Vale and Praxair expired at the end of March 2018, Hydro
 9 continues to evaluate whether these agreements should be continued through interconnection

Capacity Assistance Report - Corner Brook Pulp and Paper Winter 2017-2018

- 1 as part of its focus on customer reliability. The Corner Book Pulp and Paper agreement expires
- 2 on April 30, 2022, or the date of commissioning of the Muskrat Falls Generating Plant,
- 3 whichever is earlier. Corner Brook Pulp and Paper have demonstrated their ability to provide 90
- 4 MW of capacity assistance on a consistent basis through the 2017-2018 winter period.

Appendix A

Summary of Capacity Assistance Agreements

Capacity Assistance Report Corner Brook Pulp and Paper Winter 2017-2018
Appendix A

Table A- 1: Summary of Capacity Assistance Agreements – Corner Brook Pulp and Paper

Contracted Capacity	Rate Structure	Conditions
Up to 90 MW in 20 MW increments i.e. 20 MW, 40 MW, 60 MW, or 90 MW	<p><u>Fixed</u> \$4.75/kW per month for each of the six winter months November through April for a total maximum of \$2,565,00</p> <p><u>Variable</u> A minimum of \$0.20 per kW per hour to a maximum of \$0.26 per kW per hour for the maximum assistance provided as determined on the following sliding scale:</p> <ol style="list-style-type: none"> I. 0 to 7.5 GWh/Winter Period - 90% of GTVC;³ II. Greater than 7.5 to 100 GWh/Winter Period – 80% of GTVC. 	<ul style="list-style-type: none"> • Notification Period: 10 minutes • Interruption Period: 4 hours (minimum) to 6 hours (maximum) • Maximum number of requests: 2 per day, 30 per winter • Total Assistance Period: 150 hours per winter • Penalties: Three Strike Clause • Expiry - April 30, 2022 or the date of commissioning of the Muskrat Falls Generating plant, whichever is earlier • Test: Tested annually • Revised flexibility for voluntary calls for capacity assistance also contained in contract

³ GTVC = the previous month’s Gas Turbine Variable Cost as provided on Corner Brook Pulp and Paper’s monthly invoice and expressed as a cost per KWh.

Appendix B

Capacity Assistance Requests: Corner Brook Pulp and Paper

Table B- 1: Capacity Assistance Requests: Corner Brook Pulp and Paper

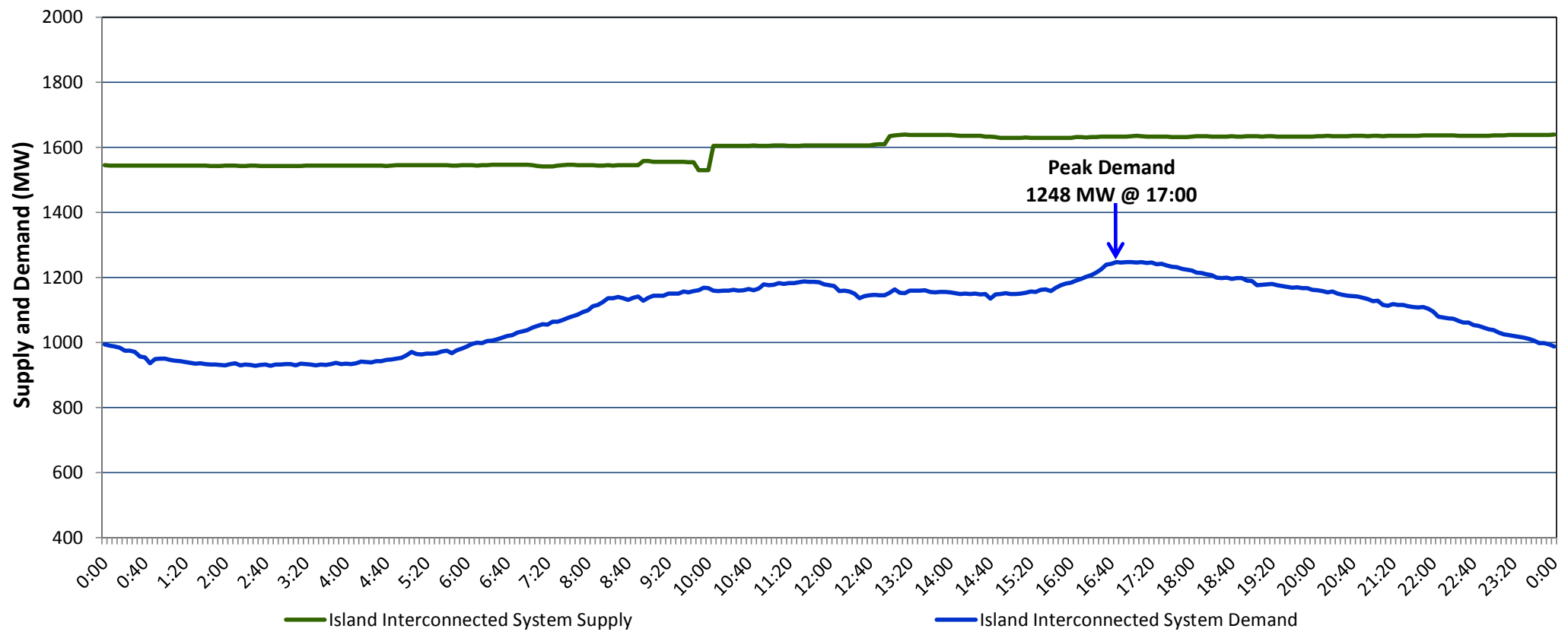
Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
December 2, 2017	8:30	12:30	4:00	1534	537	180	20.0	20.0
December 27, 2017	10:00	16:00	6:00	1894	474	140	20.0	20.0
December 27, 2017	16:00	22:00	6:00	1786	328	133	40.0	40.0
January 22, 2018	15:00	21:00	6:00	1768	371	191	90.0	90.0
January 23, 2018	7:00	11:00	4:00	1742	397	176	90.0	90.0
February 13, 2018	16:00	20:00	4:00	1753	417	213	90.0	90.0
February 14, 2018	6:30	12:30	6:00	1727	366	193	90.0	90.0
February 17, 2018	17:00	23:00	6:00	1751	536	138	40.0	40.0
February 18, 2018	7:00	11:00	4:00	1717	375	167	40.0	40.0

Appendix C

Supply and Demand Reports

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Monday, December 04, 2017

Section 1 Island Interconnected System Supply and Demand Actual 24 Hour System Performance For Saturday, December 02, 2017



Supply Notes For December 02, 2017 ^{1,2}

- A As of 1510 hours, November 04, 2017, Bay d'Espoir Unit 1 unavailable (76.5 MW).
- B As of 1510 hours, November 04, 2017, Bay d'Espoir Unit 2 unavailable (76.5 MW).
- C As of 1908 hours, November 24, 2017, Holyrood Unit 2 available at 160 MW (170 MW).
- D As of 2148 hours, November 30, 2017, Holyrood Unit 1 unavailable due to planned outage 145 MW (170 MW).
- E At 0852 hours, December 02, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
- F At 0946 hours, December 02, 2017, Hardwoods Gas Turbine available at 25 MW (50 MW).
- G At 1002 hours, December 02, 2017, Hinds Lake Unit available (75 MW).
- H At 1255 hours, December 02, 2017, Hardwoods Gas Turbine available at full capacity (50 MW).

Section 2 Island Interconnected Supply and Demand

Sun, Dec 03, 2017	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,635 MW	Sunday, December 03, 2017	0	1	1,370	1,263
NLH Generation: ⁴	1,350 MW	Monday, December 04, 2017	2	1	1,370	1,263
NLH Power Purchases: ⁶	85 MW	Tuesday, December 05, 2017	1	0	1,345	1,238
Other Island Generation:	200 MW	Wednesday, December 06, 2017	2	3	1,280	1,174
Current St. John's Temperature:	0 °C	Thursday, December 07, 2017	3	4	1,220	1,115
Current St. John's Windchill:	-5 °C	Friday, December 08, 2017	4	1	1,290	1,184
7-Day Island Peak Demand Forecast:	1,370 MW	Saturday, December 09, 2017	2	1	1,305	1,199

Supply Notes For December 03, 2017 ³

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
 7. Adjusted for CBP&P and Vale and Praxair interruptible load and the impact of voltage reduction, when applicable.

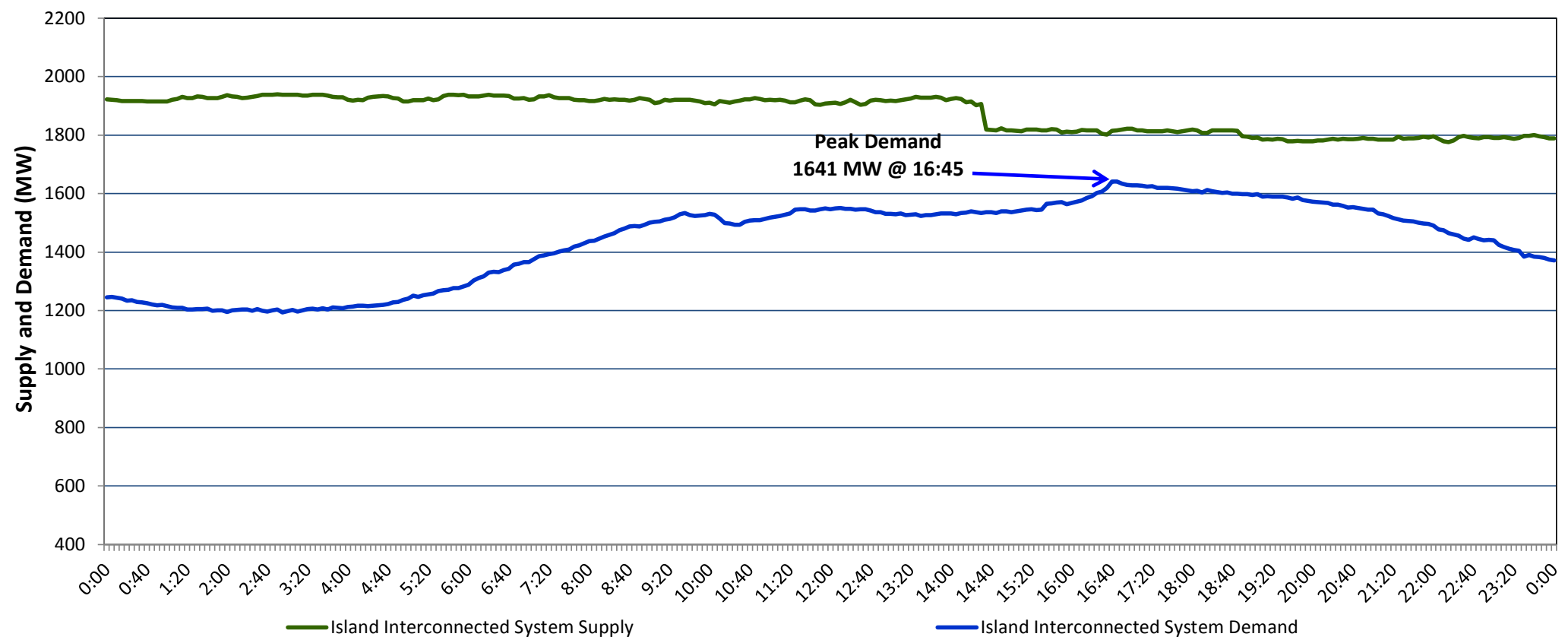
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Sat, Dec 02, 2017	Actual Island Peak Demand ⁸	17:00	1,248 MW
Sun, Dec 03, 2017	Forecast Island Peak Demand		1,370 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Thursday, December 28, 2017

Section 1 Island Interconnected System Supply and Demand Actual 24 Hour System Performance For Wednesday, December 27, 2017



Supply Notes For December 27, 2017 ^{1,2}

- A As of 1508 hours, December 04, 2017, Holyrood Unit 1 available at 150 MW (170 MW).
- B As of 1610 hours, December 19, 2017, Holyrood Unit 2 available at 160 MW (170 MW).
- C At 1423 hours, December 27, 2017, Stephenville Gas Turbine available at 25 MW (50 MW).
- D At 1435 hours, December 27, 2017, Upper Salmon Unit unavailable (84 MW).
- E At 1546 hours, December 27, 2017, Holyrood Unit 3 available at 105 MW (150 MW).
- F At 1847 hours, December 27, 2017, Stephenville Gas Turbine unavailable (50 MW).

Section 2 Island Interconnected Supply and Demand

Thu, Dec 28, 2017	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,785 MW	Thursday, December 28, 2017	-5	-3	1,535	1,426
NLH Generation: ⁴	1,485 MW	Friday, December 29, 2017	-3	-4	1,545	1,436
NLH Power Purchases: ⁶	110 MW	Saturday, December 30, 2017	-7	-2	1,470	1,362
Other Island Generation:	190 MW	Sunday, December 31, 2017	-4	-1	1,495	1,387
Current St. John's Temperature:	-6 °C	Monday, January 01, 2018	-3	-4	1,530	1,421
Current St. John's Windchill:	-18 °C	Tuesday, January 02, 2018	-5	-4	1,545	1,436
7-Day Island Peak Demand Forecast:	1,545 MW	Wednesday, January 03, 2018	-5	-4	1,510	1,401

Supply Notes For December 28, 2017 ³

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance and Maritime Link Import (when applicable).
 7. Adjusted for CBP&P and Vale and Praxair interruptible load, the impact of voltage reduction and Maritime Link Exports (when applicable).

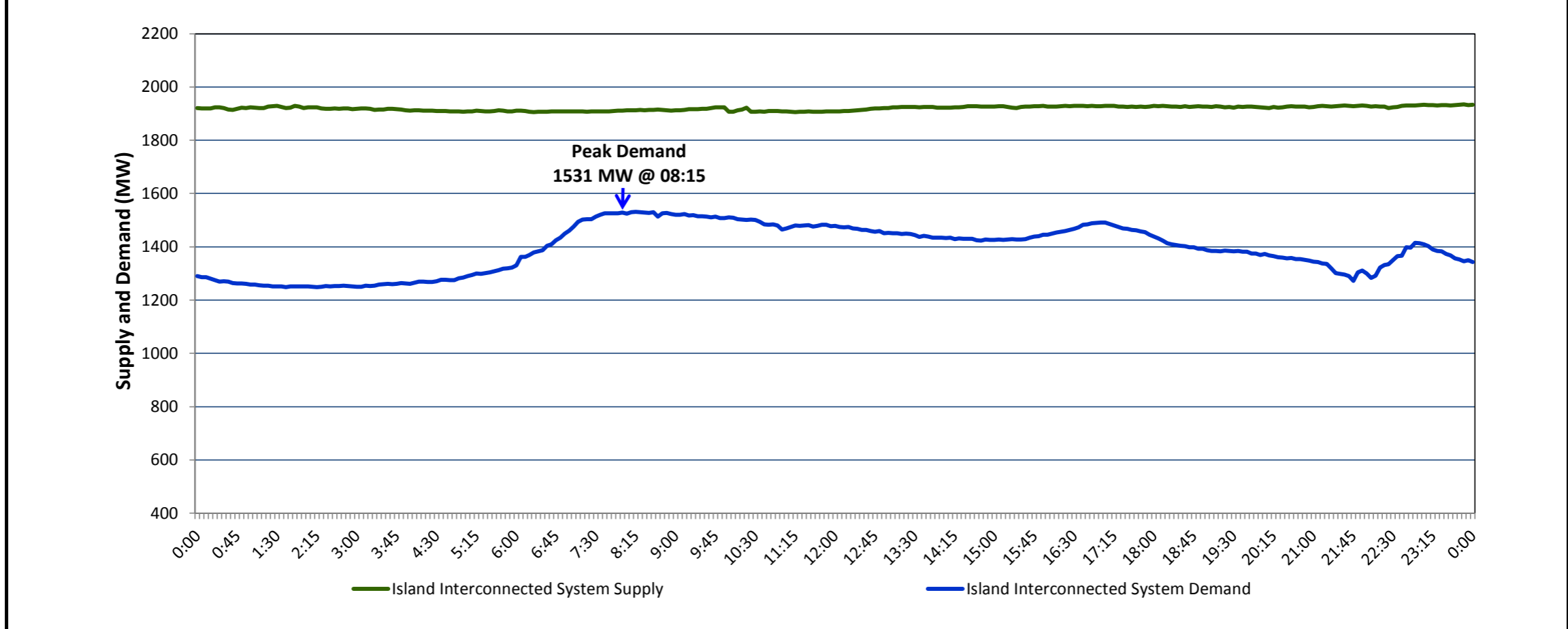
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Wed, Dec 27, 2017	Actual Island Peak Demand ⁸	16:45	1,641 MW
Thu, Dec 28, 2017	Forecast Island Peak Demand		1,535 MW

- Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Wednesday, January 10, 2018 (Revised - January 12, 2018)

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Tuesday, January 09, 2018



Supply Notes For January 09, 2018 ^{1,2}

A As of 1609 hours, December 31, 2017, Holyrood Unit 3 available at 130 MW (150 MW).
 B As of 0739 hours, January 03, 2018, Holyrood Unit 2 available at 154 MW (170 MW).
 C **As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).**
 D As of 0815 hours, January 08, 2018, Holyrood Unit 1 available at 148 MW (170 MW).

Section 2
Island Interconnected Supply and Demand

Wed, Jan 10, 2018	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,925 MW	Wednesday, January 10, 2018	-4	-8	1,640	1,530
NLH Generation: ⁴	1,610 MW	Thursday, January 11, 2018	-8	1	1,535	1,426
NLH Power Purchases: ⁶	110 MW	Friday, January 12, 2018	3	7	1,315	1,209
Other Island Generation:	205 MW	Saturday, January 13, 2018	7	8	1,315	1,209
Current St. John's Temperature:	-5 °C	Sunday, January 14, 2018	8	8	1,310	1,204
Current St. John's Windchill:	-16 °C	Monday, January 15, 2018	3	2	1,525	1,416
7-Day Island Peak Demand Forecast:	1,640 MW	Tuesday, January 16, 2018	2	-3	1,480	1,372

Supply Notes For January 10, 2018 ³

Notes:

1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance and Maritime Link Import (when applicable).
7. Adjusted for CBP&P and Vale and Praxair interruptible load, the impact of voltage reduction and Maritime Link Exports (when applicable).

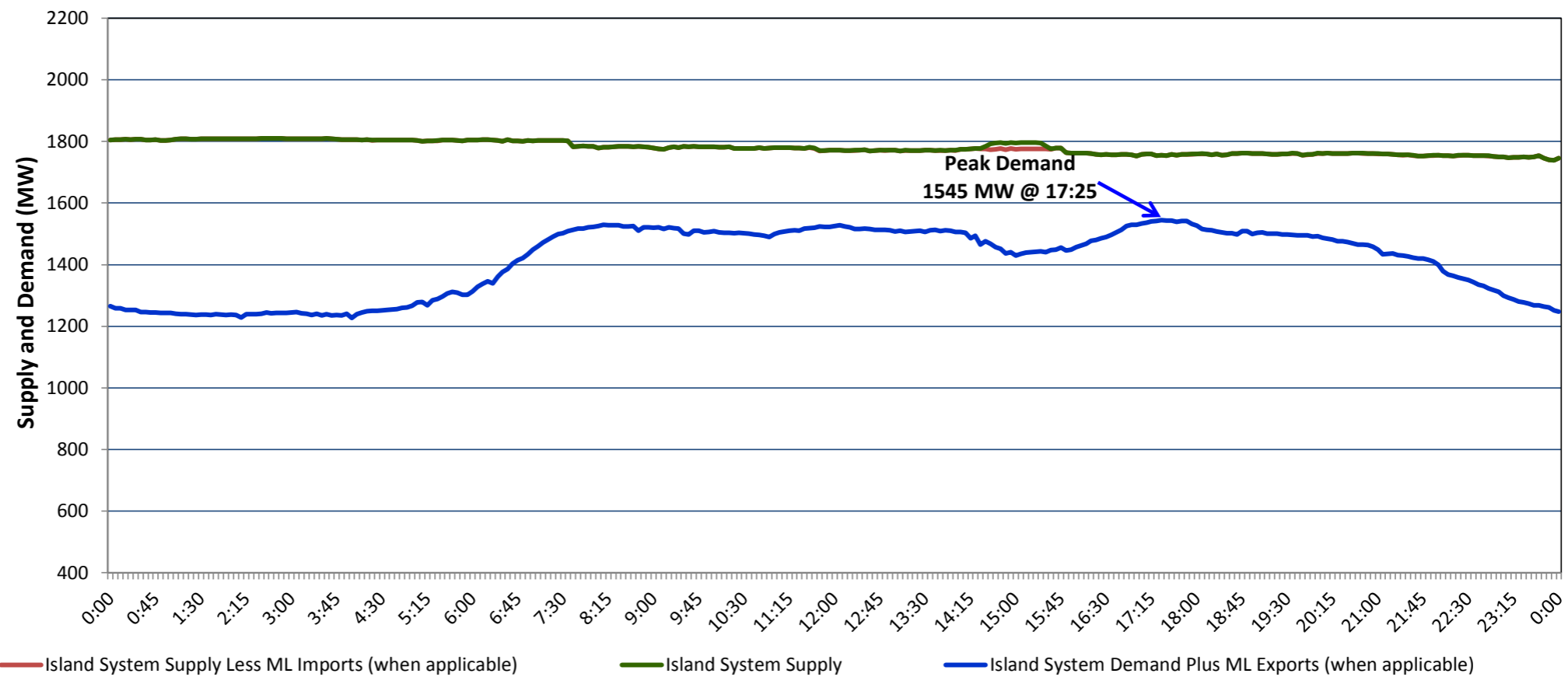
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Tue, Jan 09, 2018	Actual Island Peak Demand ⁸	08:15	1,531 MW
Wed, Jan 10, 2018	Forecast Island Peak Demand		1,640 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Tuesday, January 23, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Monday, January 22, 2018



Supply Notes For January 22, 2018

- 1,2
- A** As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
B As of 1916 hours, January 20, 2018, Holyrood Unit 1 unavailable 140 MW (170 MW).
C At 0752 hours, January 22, 2018, Holyrood Unit 2 available at 136 MW (170 MW).
D At 1144 hours, January 22, 2018, Holyrood Unit 3 available at 115 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Tue, Jan 23, 2018	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,745 MW	Tuesday, January 23, 2018	-8	-5	1,605	1,391
NLH Generation: ⁴	1,430 MW	Wednesday, January 24, 2018	0	5	1,440	1,268
NLH Power Purchases: ⁶	110 MW	Thursday, January 25, 2018	0	-4	1,510	1,401
Maritime Link Imports:	- MW	Friday, January 26, 2018	-6	-5	1,540	1,372
Other Island Generation:	205 MW	Saturday, January 27, 2018	-9	-7	1,595	1,485
Current St. John's Temperature & Windchill:	-8 °C	Sunday, January 28, 2018	-4	1	1,510	1,327
7-Day Island Peak Demand Forecast:	1,605 MW	Monday, January 29, 2018	0	-2	1,465	1,357

Supply Notes For January 23, 2018

- 3
- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

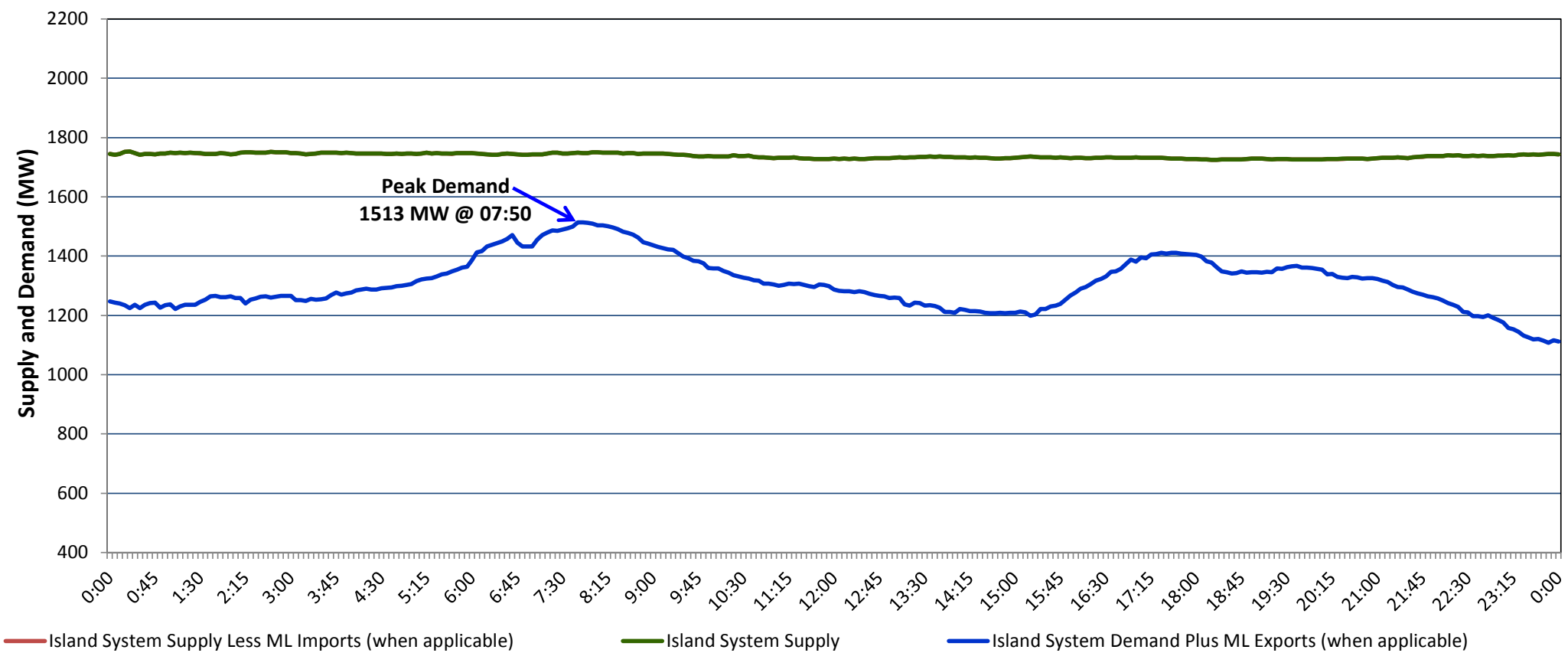
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Mon, Jan 22, 2018	Actual Island Peak Demand ⁹	17:25	1,545 MW
Tue, Jan 23, 2018	Forecast Island Peak Demand		1,605 MW

- Notes: 9. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

**Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Wednesday, January 24, 2018**

**Section 1
Island Interconnected System Supply, Demand & Exports
Actual 24 Hour System Performance For Tuesday, January 23, 2018**



Supply Notes For January 23, 2018

- 1,2
- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
 - B As of 1916 hours, January 20, 2018, Holyrood Unit 1 unavailable 140 MW (170 MW).
 - C As of 0752 hours, January 22, 2018, Holyrood Unit 2 available at 136 MW (170 MW).
 - D As of 1144 hours, January 22, 2018, Holyrood Unit 3 available at 115 MW (150 MW).
 - E **At 0855 hours, January 23, 2018, St. Anthony Diesel Plant available at 8.85 MW due to planned outage (9.7 MW).**

**Section 2
Island Interconnected Supply and Demand**

Wed, Jan 24, 2018	Island System Outlook ³		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,745	MW	Wednesday, January 24, 2018	0	5	1,430	1,322
NLH Generation: ⁴	1,430	MW	Thursday, January 25, 2018	-1	-5	1,570	1,461
NLH Power Purchases: ⁶	115	MW	Friday, January 26, 2018	-6	-6	1,535	1,401
Maritime Link Imports:	-	MW	Saturday, January 27, 2018	-11	-9	1,610	1,500
Other Island Generation:	200	MW	Sunday, January 28, 2018	-3	0	1,465	1,303
Current St. John's Temperature & Windchill:	-1 °C	-9 °C	Monday, January 29, 2018	3	-1	1,490	1,382
7-Day Island Peak Demand Forecast:	1,610	MW	Tuesday, January 30, 2018	1	1	1,435	1,327

Supply Notes For January 24, 2018

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

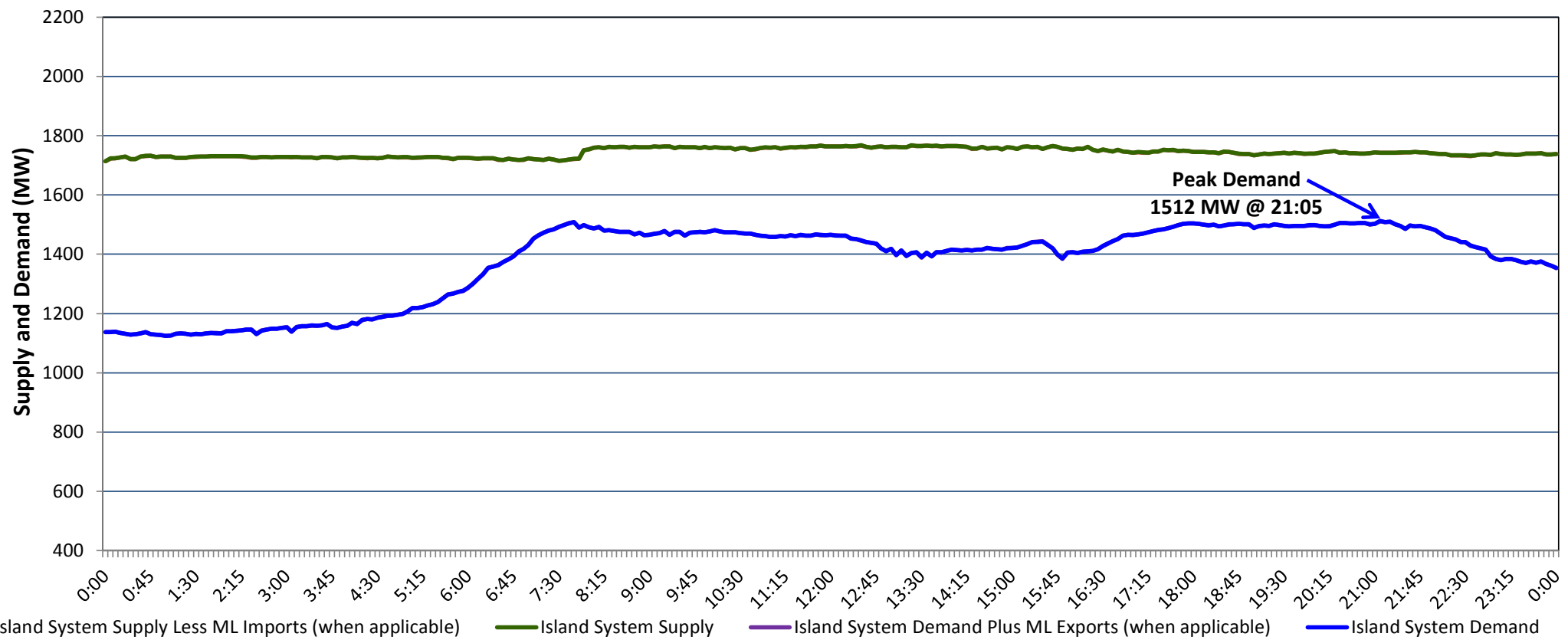
**Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak**

Tue, Jan 23, 2018	Actual Island Peak Demand ⁹	07:50	1,513 MW
Wed, Jan 24, 2018	Forecast Island Peak Demand		1,430 MW

Notes: 9. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Wednesday, February 14, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Tuesday, February 13, 2018



Supply Notes For February 13, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
- C As of 1550 hours, February 08, 2018, Holyrood Unit 2 available at 127 MW (170 MW).
- D At 0752 hours, February 13, 2018, Holyrood Unit 3 available at 103 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Wed, Feb 14, 2018	Island System Outlook ³	Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
			Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,720 MW	Wednesday, February 14, 2018	-11	-3	1,670	1,402
NLH Generation: ⁴	1,410 MW	Thursday, February 15, 2018	-1	-1	1,445	1,248
NLH Power Purchases: ⁶	105 MW	Friday, February 16, 2018	-2	1	1,375	1,263
Maritime Link Imports:	- MW	Saturday, February 17, 2018	0	-9	1,600	1,490
Other Island Generation:	205 MW	Sunday, February 18, 2018	-10	-8	1,505	1,367
Current St. John's Temperature & Windchill:	-11 °C	Monday, February 19, 2018	-7	-4	1,490	1,332
7-Day Island Peak Demand Forecast:	1,670 MW	Tuesday, February 20, 2018	-11	-2	1,605	1,387

Supply Notes For February 14, 2018

3

- E At 0749 hours, February 14, 2018, Holyrood Unit 2 available at 124 MW (170 MW).
- F At 0749 hours, February 14, 2018, Holyrood Unit 3 available at 110 MW (150 MW).

- Notes:
- Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 - Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 - As of 0800 Hours.
 - Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 - Gross output from all Island sources (including Note 4).
 - NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 - Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

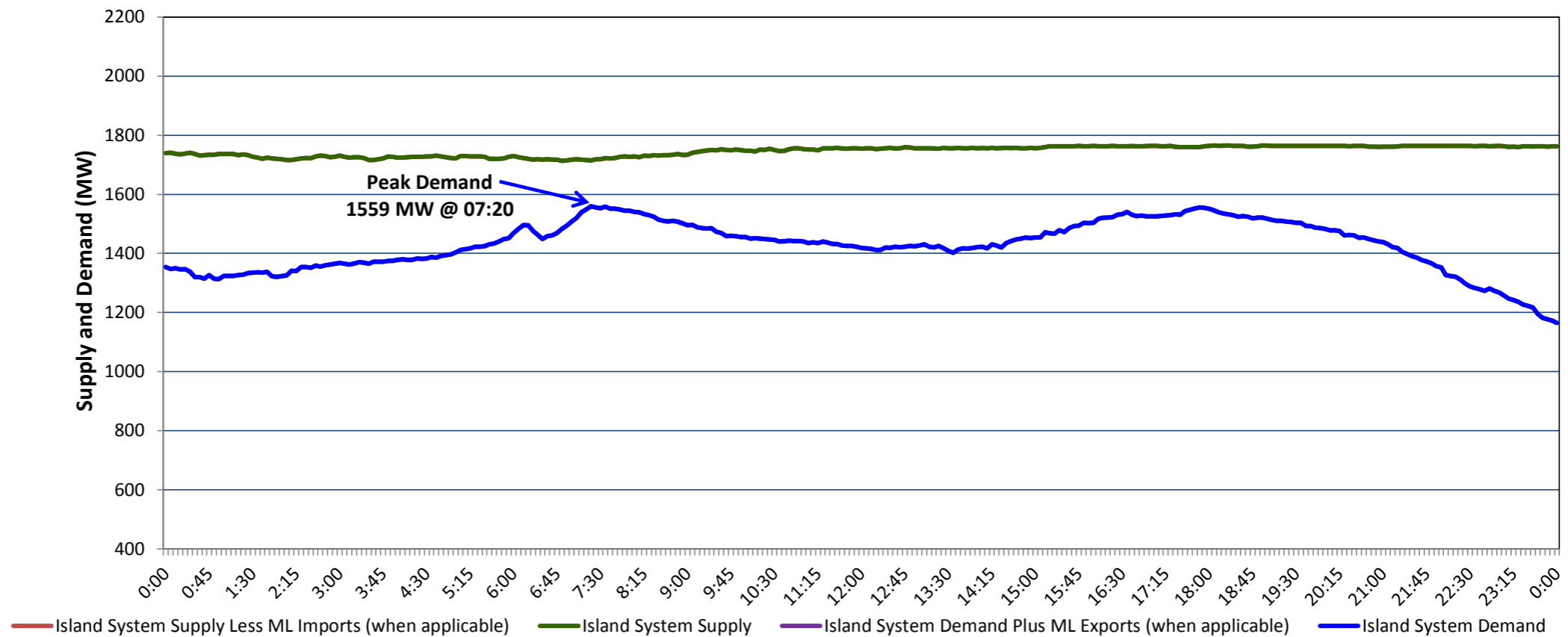
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Tue, Feb 13, 2018	Actual Island Peak Demand ⁸	21:05	1,512 MW
Wed, Feb 14, 2018	Forecast Island Peak Demand		1,670 MW

Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Thursday, February 15, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Wednesday, February 14, 2018



Supply Notes For February 14, 2018

- 1,2
- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
 - B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
 - C At 0749 hours, February 14, 2018, Holyrood Unit 2 available at 124 MW (170 MW).
 - D At 0749 hours, February 14, 2018, Holyrood Unit 3 available at 110 MW (150 MW).

Section 2 Island Interconnected Supply and Demand

Thu, Feb 15, 2018	Island System Outlook ³		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,720	MW	Thursday, February 15, 2018	-1	-1	1,380	1,263
NLH Generation: ⁴	1,410	MW	Friday, February 16, 2018	-1	2	1,365	1,214
NLH Power Purchases: ⁶	95	MW	Saturday, February 17, 2018	-1	-8	1,605	1,495
Maritime Link Imports:	-	MW	Sunday, February 18, 2018	-10	-8	1,495	1,387
Other Island Generation:	215	MW	Monday, February 19, 2018	-5	-6	1,500	1,391
Current St. John's Temperature & Windchill:	-1 °C	-6 °C	Tuesday, February 20, 2018	-7	-3	1,520	1,317
7-Day Island Peak Demand Forecast:	1,690	MW	Wednesday, February 21, 2018	-1	-13	1,690	1,579

Supply Notes For February 15, 2018

- 3
- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

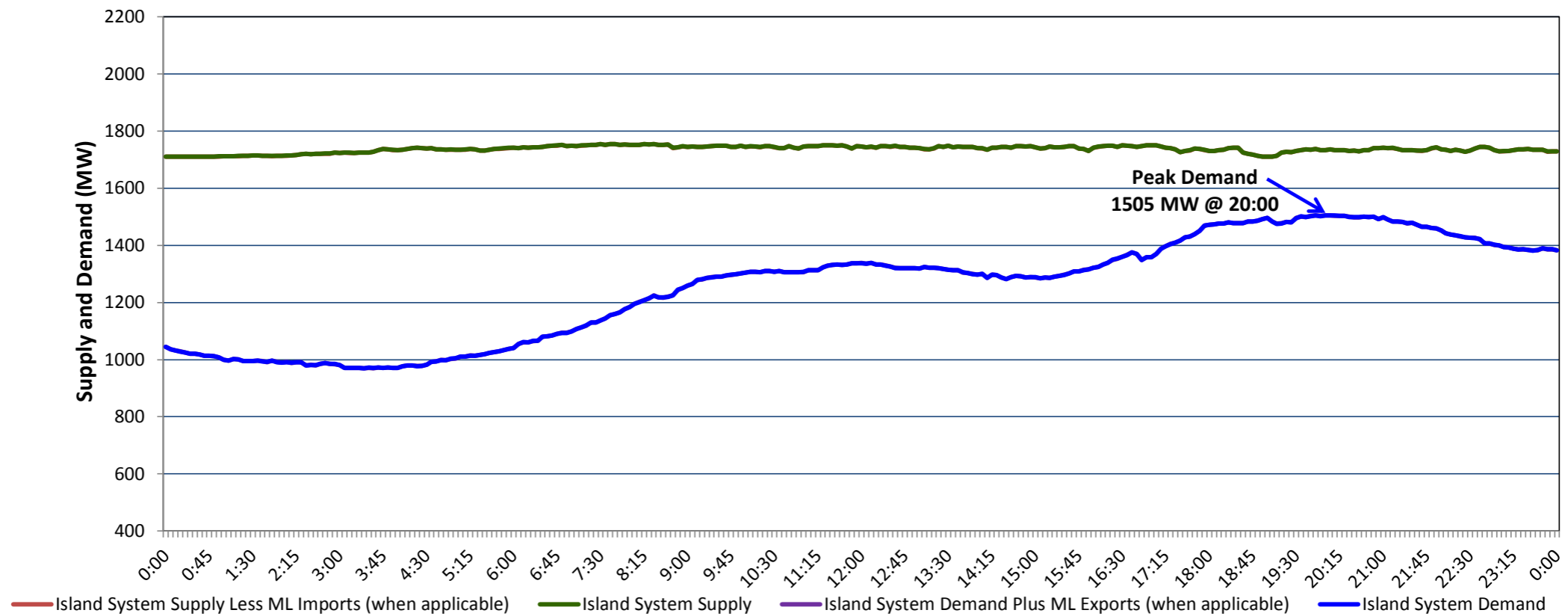
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Wed, Feb 14, 2018	Actual Island Peak Demand ⁸	07:20	1,559 MW
Thu, Feb 15, 2018	Forecast Island Peak Demand		1,380 MW

Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Monday, February 19, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Saturday, February 17, 2018



Supply Notes For February 17, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
- C At 0844 hours, February 17, 2018, Holyrood Unit 2 available at 110 MW (170 MW).
- D At 0844 hours, February 17, 2018, Holyrood Unit 3 available at 105 MW (150 MW).

3

Section 2 Island Interconnected Supply and Demand

Sun, Feb 18, 2018	Island System Outlook ³		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,665	MW	Sunday, February 18, 2018	-12	-7	1,540	1,367
NLH Generation: ⁴	1,355	MW	Monday, February 19, 2018	-6	-5	1,550	1,327
NLH Power Purchases: ⁶	100	MW	Tuesday, February 20, 2018	-5	-1	1,455	1,283
Maritime Link Imports:	-	MW	Wednesday, February 21, 2018	-5	-2	1,460	1,337
Other Island Generation:	210	MW	Thursday, February 22, 2018	2	-7	1,535	1,426
Current St. John's Temperature & Windchill:	-13 °C	-16 °C	Friday, February 23, 2018	-10	-9	1,615	1,446
7-Day Island Peak Demand Forecast:	1,615	MW	Saturday, February 24, 2018	-10	-5	1,510	1,337

Supply Notes For February 18, 2018

- E At 0656 hours, February 18, 2018, Granite Canal Unit unavailable (40 MW).

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

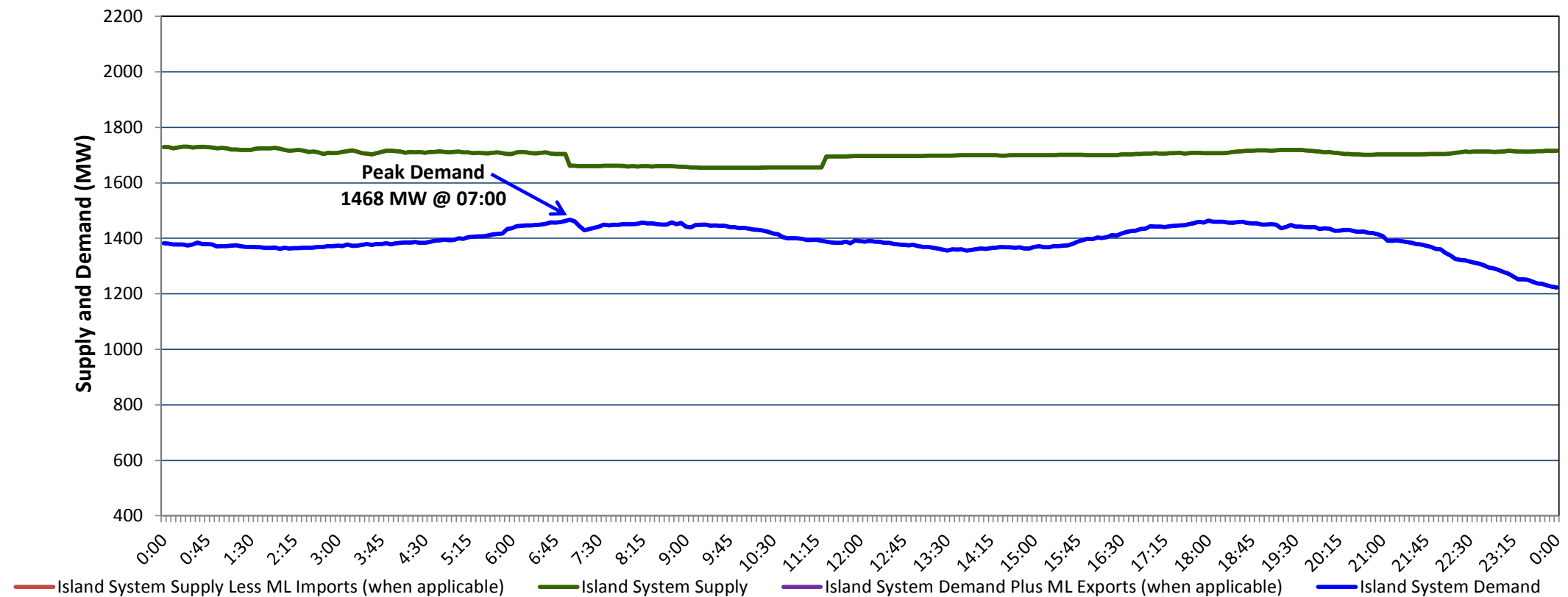
Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Sat, Feb 17, 2018	Actual Island Peak Demand ⁸	20:00	1,505 MW
Sun, Feb 18, 2018	Forecast Island Peak Demand		1,540 MW

- Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH) Supply and Demand Status Report Filed Monday, February 19, 2018

Section 1 Island Interconnected System Supply, Demand & Exports Actual 24 Hour System Performance For Sunday, February 18, 2018



Supply Notes For February 18, 2018

1,2

- A As of 2115 hours, January 04, 2018, Stephenville Gas Turbine available at 25 MW (50 MW).
- B As of 1204 hours, February 03, 2018, Holyrood Unit 1 unavailable 70 MW (170 MW).
- C As of 0844 hours, February 17, 2018, Holyrood Unit 2 available at 110 MW (170 MW).
- D As of 0844 hours, February 17, 2018, Holyrood Unit 3 available at 105 MW (150 MW).
- E At 0656 hours, February 18, 2018, Granite Canal Unit unavailable (40 MW).
- F At 1123 hours, February 18, 2018, Granite Canal Unit available (40 MW).

Section 2 Island Interconnected Supply and Demand

Mon, Feb 19, 2018	Island System Outlook ³		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted ⁷
Available Island System Supply: ⁵	1,715	MW	Monday, February 19, 2018	-6	-6	1,495	1,327
NLH Generation: ⁴	1,395	MW	Tuesday, February 20, 2018	-3	-3	1,445	1,337
NLH Power Purchases: ⁶	110	MW	Wednesday, February 21, 2018	-7	-1	1,515	1,372
Maritime Link Imports:	-	MW	Thursday, February 22, 2018	2	-8	1,590	1,480
Other Island Generation:	210	MW	Friday, February 23, 2018	-11	-8	1,650	1,431
Current St. John's Temperature & Windchill:	-7 °C	-14 °C	Saturday, February 24, 2018	-7	-4	1,400	1,293
7-Day Island Peak Demand Forecast:	1,650	MW	Sunday, February 25, 2018	-5	-4	1,385	1,278

Supply Notes For February 19, 2018

3

- Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
 2. Due to the Island System having no synchronous connections to the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
 3. As of 0800 Hours.
 4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
 5. Gross output from all Island sources (including Note 4).
 6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation, Vale capacity assistance (when applicable).
 7. Adjusted for CBP&P, Vale and Praxair interruptible load, Maritime Link Exports and the impact of voltage reduction (when applicable).

Section 3 Island Peak Demand Information Previous Day Actual Peak and Current Day Forecast Peak

Sun, Feb 18, 2018	Actual Island Peak Demand ⁸	07:00	1,468 MW
Mon, Feb 19, 2018	Forecast Island Peak Demand		1,495 MW

- Notes: 8. Island Demand / ML Exports (where applicable) is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).



Hydro Place, 500 Columbus Drive,
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April 10, 2019

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 of Corporate Services & Board Secretary

Dear Ms. Blundon:

**Re: Newfoundland and Labrador Hydro's Capacity Assistance Agreements with Vale
Newfoundland and Labrador Limited**

Background

Newfoundland and Labrador Hydro ("Hydro") presently has three capacity assistance agreements in place with industrial customers; one with Corner Brook Pulp and Paper Limited ("CBPP") and two with Vale Newfoundland and Labrador Limited ("Vale").

The Board of Commissioners of Public Utilities (the "Board") approved a 6 MW Load Curtailment Agreement with Vale in Board Order No. P.U. 44(2018). In that Order, Hydro was directed to file a report with the Board no later than April 15 of the year following each winter period. The report is to include the dates, times, duration, and system conditions under which capacity assistance was requested, provided, and capacity and variable payments made.

The Board approved the revised capacity assistance agreement with CBPP in Board Order No. P.U. 40(2018). The report detailing the use of that agreement is required by May 30, 2019.

Hydro also has an agreement with Vale for the provision of up to 8 MW of capacity assistance from Vale's diesel generating facilities. This agreement was provided to the Board on November 18, 2018 for information purposes.¹

In accordance with Board direction, this letter summarizes the details and costs associated with Hydro's use of the capacity assistance agreements for the four month winter period of December 1, 2018 to March 31, 2019.

Capacity Assistance Operating Experience Summary

During the winter of 2018–2019, Hydro did not make any requests to Vale to utilize the load curtailment under either the 6 MW Load Curtailment Agreement, or make a request for capacity assistance from their standby diesel generation. Therefore, there were no expenditures for curtailed energy at the Energy Curtailed Rate.² The total fixed fee (capacity) paid to Vale, as required under the agreements, is shown in Table 1.

¹ As this agreement is for supply of capacity and energy to Hydro and does not affect the Industrial Service Agreements approved by the Board, Hydro did not seek a Board Order with respect to this agreement.

² "Energy Curtailed Rate" means \$0.20 per kWh of energy curtailed.

Ms. Cheryl Blundon
Public Utilities Board

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Table 1: Fixed Fee Charges under Vale Agreements

Agreement	No. of Assistance Requests	Demand Capacity Fee \$/kW/yr.³	Capacity (kW)	Paid Under The Agreement (\$)
Capacity Assistance	0	28	7,560	211,680
Load Curtailment	0	28	6,000	168,000
2018-2019 Total	0		13,560	379,680

Please contact the undersigned should you have any questions.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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

cc: Gerard Hayes, Newfoundland Power Inc.
Paul Coxworthy, Stewart McKelvey
Denis Fleming, Cox & Palmer
ecc: Larry Bartlett, Teck Resources Ltd.

Dennis Browne, Q.C., Browne Fitzgerald Morgan & Avis
Sheryl Nisenbaum, Praxair Canada Inc.
Dean A. Porter, Poole Althouse

³ "Demand Curtailment Fee" calculated at \$7 per kW/month, for the agreement duration of four months.