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May 30, 2023

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

Attention: Cheryl Blundon
Director of Corporate Services and Board Secretary

Re: Capacity Assistance Agreement with Corner Brook Pulp and Paper Limited – Winter 2022–2023

Please find enclosed a copy of Newfoundland and Labrador Hydro's Capacity Assistance Report for winter 2022–2023.

We trust the foregoing is satisfactory. Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

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

Encl.

ecc:

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Capacity Assistance Agreement with Corner Brook Pulp and Paper Limited

Winter 2022–2023

May 30, 2023

A report to the Board of Commissioners of Public Utilities

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1.0 Introduction

Capacity assistance arrangements are used as a means to either minimize disruptions to customers in the event of a contingency or maintain sufficient level of operating reserves for reliable operation of the electrical system. This support is typically requested during either (i) times of high or peak customer demand or, (ii) instances where there are issues with generation or regional transmission during the winter operating season.

For the 2022–2023 winter season Newfoundland and Labrador Hydro ("Hydro") had one capacity assistance agreement in place — the Second Amended and Restated Capacity Assistance Agreement ("Agreement") with Corner Brook Pulp and Paper Limited ("CBPP").[1] It provided for up to 105 MW of winter capacity assistance to Hydro. A summary of the terms and conditions of the Agreement is contained in Appendix A. The Agreement expired on April 30, 2023; Hydro is currently in discussions with CBPP regarding an agreement for next winter.

In accordance with Board Order No. P.U. 4(2021), which ordered the continuation of reporting requirements outlined in Order No. P.U. 40(2018),[2] this report provides the following for winter 2022–2023:

- The capacity assistance requested and provided, including dates, times, and duration;
- The system conditions at the time of the capacity assistance request, including generation available and calculation of system reserve; and
- Payments made.

2.0 Capacity Assistance Provided – Winter 2022–2023

The Agreement allows Hydro to make capacity assistance requests to CBPP during the winter period, defined as between November 1 to April 30. The Agreement also provides the ability for Hydro to make a request for capacity assistance outside the official winter period; CBPP may comply with this request

[1] "*Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 4(2021), Board of Commissioners of Public Utilities, January 26, 2021, sch. C.
[2] "*Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 40(2018), Board of Commissioners of Public Utilities, November 22, 2018.

on a voluntary basis in accordance with clause 2.06 of the Agreement. Hydro did not make any calls for capacity assistance outside of the official winter period.

Pursuant to the Agreement, CBPP is required to demonstrate the capability to reduce its load pursuant to a request of Hydro such that it provides up to 105 MW of relief on the Island transmission system. The test is generally required at a mutually agreed time between October 15 and October 31 before the beginning of each winter period. Due to maintenance activities occurring at CBPP's facilities in late September and October, CBPP requested the test be conducted prior to this maintenance work and Hydro agreed. The results of the testing indicated capability up to 106,653 kW. Hydro and CBPP agreed that 90 MW of capacity assistance would be made available from CBPP for winter 2022–2023.

During winter 2022–2023, Hydro made one request for capacity assistance from CBPP on February 2, 2023. On that morning, Unit 1 at Holyrood Thermal Generating Station was unavailable, while Unit 2 and Unit 3 were online but derated to 145 MW (of 170 MW) and 120 MW (of 150 MW), respectively. Both Granite Canal Hydroelectric Generating Station and Upper Salmon Hydroelectric Generating Station were set at reduced generation outputs of 20 MW (of 40 MW) and 60 MW (of 84 MW), respectively, due to frazil ice. The Stephenville Gas Turbine was available at 25 MW (of 50 MW). The Labrador-Island-Link ("LIL") had tripped offline earlier in the morning at 0126 hours and was out of service until that evening. Although any LIL supply would not have been included in reserve calculations at the time, it would have helped with regulation had it been online. System ten-minute reserves were approximately 160 MW and system regulating reserves were approximately 50 MW at the time of the CBPP request. The peak demand forecast was 1,600 MW.

Further details regarding the capacity assistance requested and provided are included as Appendix B to this report. Details on system conditions, including actual peak demand values, are provided in Hydro's Supply and Demand Status Report for February 2, 2023, included as Attachment 1 to this report.

3.0 Capacity Assistance Costs

The overall cost of capacity assistance for the 2022–2023 winter season is provided in Table 1.

Table 1: Summary of Capacity Assistance Costs – CBPP

CBPP Capacity Assistance Agreement	Capacity Fee ($)	Variable Charge ($)	Total ($)
Early Capacity Assistance	-	-	-
Winter 2022–2023	2,565,000	111,150	2,676,150
Total	**2,565,000**	**111,150**	**2,676,150**

Hydro paid a reduced Capacity Fee for the agreed upon level of 90 MW of capacity assistance available from November 1, 2022 to April 30, 2023.[3] The Capacity Fee calculation is as follows:

Fee: $2,992,500 * (90MW/105MW) = **$2,565,000**

The variable charge relates to the February 2, 2023 request for assistance calculated in accordance with clause 3.02 of the Agreement.

Energy associated with Capacity: 90,000 kW * 4.75 hrs = 427,500 kWh

Rate: Minimum of $0.26 or 90% of Previous Months Gas Turbine Variable Cost ("GTVC") = MIN ($0.26 or 0.9 * $0.38625) = $0.26/kW

Fee: 427,500 kW * $0.26/kW = **$111,150**

4.0 Conclusion

Hydro made one capacity assistance request from CBPP during winter 2022–2023 to support the provision of reliable service to its customers. CBPP demonstrated its ability to provide capacity assistance when requested.

[3] Pursuant to clause 2.07 of the Agreement, a reduction in the Capacity Fee is made to reflect the prorated amount of Capacity Assistance.

Appendix A

Summary of Second Amended and Restated Capacity Assistance Agreement

Corner Brook Pulp and Paper Limited

Table A-1: Summary of Second Amended and Restated Capacity Assistance Agreement – CBPP[1]

Capacity	Rate Structure	Conditions
Up to 105 MW in the following increments: • 20 MW • 40 MW • 60 MW • 90 MW • 105 MW	Fixed $4.75/kW per month for each of November through April for a total of $2,992,500. Variable For capacity assistance up to and including 90 MW, 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: **1)** 0 to 7.5 GWh/Winter – 90% of GTVC;[2] **2)** Greater than 7.5 to 100 GWh/Winter Period – 80% of GTVC. For capacity assistance over 90 MW, the variable rate fee is based on the greater of (i) 80% of the previous month's GTVC plus $0.06/kWh, or (ii) a predetermined rate of $0.26/KWh, but which shall not exceed $0.32/KWh.	• Notification Period: 10 minutes • Interruption Period: 4 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments: 2 per day, 60 per winter • Total Assistance Period: 250 hours per winter • Penalties: Three Strike Clause[3] • Expiry: April 30, 2023 • Test: Annually

[1] Corner Brook Pulp and Paper Limited ("CBPP").
[2] GTVC = the previous month's Gas Turbine Variable Cost as provided on CBPP's monthly invoice and expressed as a cost per kWh.
[3] If CBPP fails to provide the requested capacity assistance, the fixed fee is reduced by 50% in the first instance. For the second failure to provide capacity assistance, the fixed fee is reduced by a further 25%. If CBPP fails to provide capacity assistance three times during the winter, 100% of the fee is forfeited.

Appendix B

Summary of Winter 2022–2023 Capacity Assistance Requests

Corner Brook Pulp and Paper Limited

Table B-1: Summary of Winter 2022–2023 Capacity Assistance Requests – CBPP[1]

Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System 10-Minute Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
February 2, 2023	0645	1130	4:45	1,840	240	160	90	90

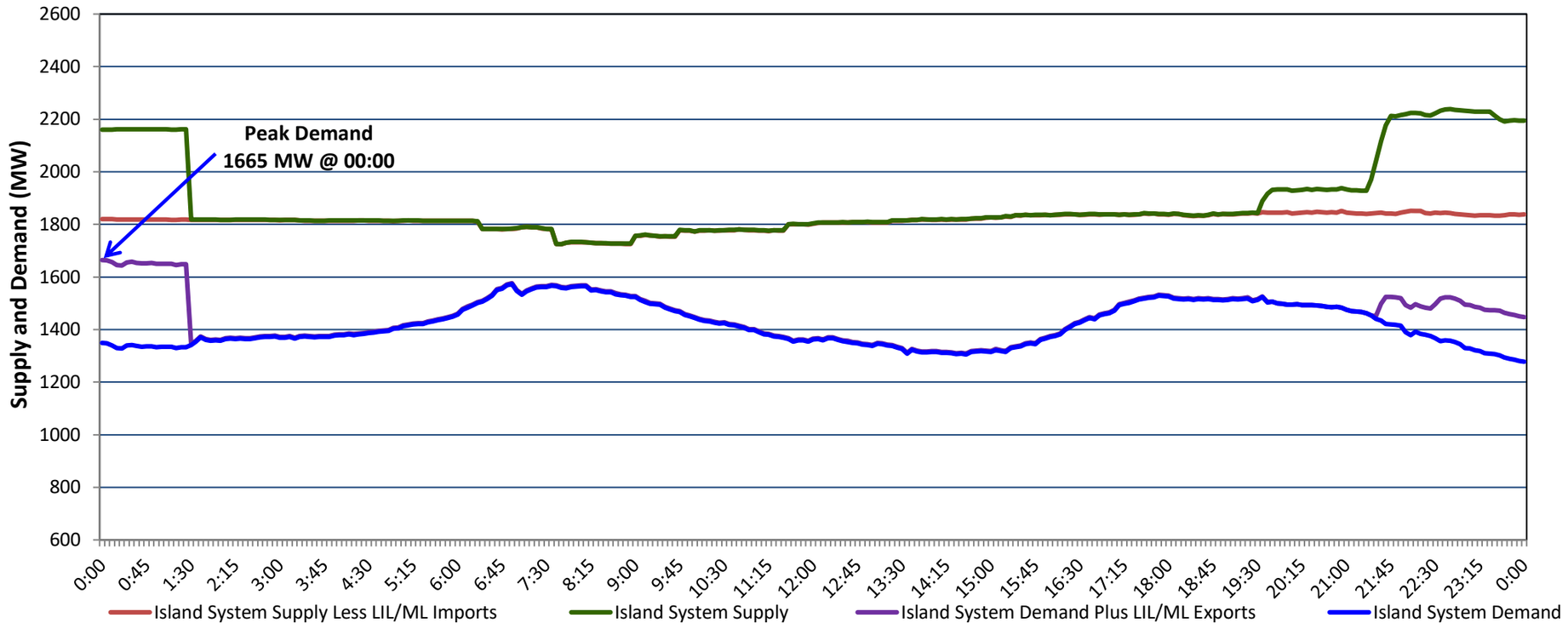
[1] Corner Brook Pulp and Paper Limited ("CBPP").

Attachment 1

Supply and Demand Report for February 2, 2023

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Friday, February 03, 2023

Section 1
Island Interconnected System Supply, Demand & Exports
Actual 24 Hour System Performance For Thursday, February 02, 2023



Supply Notes For February 02, 2023 [1,2]

A	As of 0605 hours, February 01, 2023, Holyrood Unit 1 unavailable (170 MW).
B	As of 1900 hours, February 01, 2023, Granite Canal Unit available at 20 MW (40 MW).
C	As of 1908 hours, February 01, 2023, Upper Salmon Unit available at 60 MW (84 MW).
D	At 0625 hours, February 02, 2023, Stephenville Gas Turbine available at 25 MW (50 MW).
E	At 0740 hours, February 02, 2023, Holyrood Unit 2 available at 145 MW (170 MW).
F	At 0740 hours, February 02, 2023, Holyrood Unit 3 available at 120 MW (150 MW).
G	At 0858 hours, February 02, 2023, Holyrood Unit 3 available at full capacity (150 MW).
H	At 0942 hours, February 02, 2023, Stephenville Gas Turbine available at full capacity (50 MW).
I	At 1132 hours, February 02, 2023, Holyrood Unit 2 available at full capacity (170 MW).

Section 2
Island Interconnected Supply and Demand

Fri, Feb 03, 2023	**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]	**2,139**	**MW**	Friday, February 3, 2023	-5	1	**1,635**	**1,536**
NLH Island Generation:[4,8]	1,480	MW	Saturday, February 4, 2023	-8	-12	1,680	1,581
NLH Island Power Purchases:[6]	130	MW	Sunday, February 5, 2023	-8	-5	1,475	1,378
Other Island Generation:	230	MW	Monday, February 6, 2023	3	3	1,350	1,254
ML/LIL Imports:	299	MW	Tuesday, February 7, 2023	-6	-7	1,475	1,378
Current St. John's Temperature & Windchill: -5 °C	-13	°C	Wednesday, February 8, 2023	-6	0	1,400	1,304
7-Day Island Peak Demand Forecast:	**1,680**	MW	Thursday, February 9, 2023	2	-4	1,400	1,304

Supply Notes For February 03, 2023 [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 there may be a requirement for some customer's load to 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 (UFLS), is necessary to ensure the integrity and reliability of system equipment. Under frequency events have typically occurred 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes. With the activation of the Maritime Link frequency controller during the winter of 2018, UFLS events have occurred less frequently.
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 Island Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Wind Generation and capacity assistance (when applicable).
7. Adjusted for curtailable load, market activities and the impact of voltage reduction when applicable.
8. Due to limitations inherent in the design of combustion turbines, the output of combustion turbines may be reduced in the event that ambient temperatures exceed the threshold

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

Thu, Feb 02, 2023	Actual Island Peak Demand[9]	0:00	1,665 MW
Fri, Feb 03, 2023	Forecast Island Peak Demand		1,635 MW

Notes: 9. Island Demand / LIL / 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).