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August 19, 2022

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: Long-Term Supply for Southern Labrador – Phase 1 – Update Regarding Service to the Town of Charlottetown

In consideration of Newfoundland and Labrador Hydro's ("Hydro") application for approval of the construction of Phase 1 of Hydro's long-term supply plan for southern Labrador ("Southern Labrador Application"),¹ Hydro provides this correspondence to outline its plans to support reliability in Charlottetown following a fire that occurred on July 2, 2022, which destroyed Unit 2089, a 725 kW mobile diesel genset. The fire was extinguished by the local fire department and power was restored to the community via the two other mobile gensets that were already connected. There were no safety-related incidents associated with the fire.

Background

Prior to the July 2022 fire, the Town of Charlottetown was served by three mobile diesel generators.² The impact of the fire is shown in Table 1.

Table 1: Installed Charlottetown Generating Units (kW)

	Before Fire	After Fire
	kW	kW
Unit 2088	910	910
Unit 2089 (Fire)	725	-
Unit 2102	910	910
Total Capacity	2,545	1,820
Firm Capacity	1,635	910
CHT ³ Forecast Peak Load	1,568	

¹ "Long-Term Supply for Southern Labrador," Newfoundland and Labrador Hydro, July 16, 2021.

² A fourth mobile generator with a rated capacity of 600 kW, Unit 2044, was on site but was not connected to the system at the time of the fire.

³ Charlottetown ("CHT").

Hydro’s firm capacity planning criteria require an N-1⁴ redundancy at each isolated diesel generating station. As indicated, the firm capacity rating of the units in Charlottetown prior to the July 2022 fire was 1,635 kW. Following the fire, Hydro’s total installed capacity was reduced to 1,820 kW and its firm capacity was reduced to 910 kW.

The peak load in Charlottetown occurs during the summer when a large shrimp processing plant is in operation. As that plant is now in operation, the peak load in Charlottetown is approximately 1,568 kW.⁵ The loss of Unit 2089 resulted in a violation of Hydro’s firm capacity planning criteria.

Restoration of N-1 Redundancy

Hydro has a “Firm Capacity” criteria which requires N-1 redundancy, which allows Hydro to meet peak demand even if the largest unit is unavailable. To restore N-1 redundancy, Hydro has rented a 725 kW mobile genset from CAT. This unit was connected in Charlottetown on July 14, 2022. With this unit in service, the firm capacity has been restored to 1,635 kW, allowing Hydro to maintain N-1 redundancy for the remainder of the shrimp processing season. As this unit is not winterized, Hydro plans to return this unit to the vendor following the conclusion of the 2022 shrimp processing season.

Hydro is also actively working to connect Unit 2044.⁶ This unit requires minor modification (installation of a remote radiator) before it can be fully utilized. Hydro expects that this unit will be in service by the end of August 2022. The expenses associated with connecting the rented unit and Unit 2044 are considered operating expenses and not capital in nature. The system capacity with the additional units in service is provided in Table 2.

Table 2: Charlottetown Generating Units – Additional Units (kW)

	kW
Unit 2088	910
Unit 2102	910
Rental Unit	725
Unit 2044	600
Total Capacity	3,145
Firm Capacity	2,235
CHT Forecast Peak Load	1,568

Winter Considerations

As Unit 2089 was a winterized unit, Hydro will require an additional winterized unit and intends to winterize Unit 2102 in preparation for the 2022–2023 winter season. Following this work, Hydro will have two winterized 910 kW units on site. This will maintain Hydro’s N-1 criteria through the winter, as either of those two units can meet the winter peak load. The work to winterize this unit will be included in a supplemental capital budget application currently being prepared for filing.

⁴ N-1 redundancy refers to the ability to meet peak demand following the loss of the largest generating unit on the system.

⁵ The winter peak load is approximately 756 kW.

⁶ This unit has experienced performance issues and may not be able to supply full rated output.

A summary of system capacity for Charlottetown for the coming winter season is provided in Table 3.

Table 3: Charlottetown Generating Units – Winter 2022-2023 (kW)

	kW
Unit 2088	910
Unit 2102	910
Unit 2044	600
Total Capacity	2,445
Firm Capacity	1,535
CHT Forecast Winter Load	756

Increasing Redundancy to N-2⁷

As communicated in Hydro’s June 21, 2022 correspondence,⁸ prior to the July 2022 fire, Hydro was evaluating the need for additional mobile generation that could provide an N-2 redundancy in Charlottetown pending a resolution of the Southern Labrador Application. Since the loss of the permanent Charlottetown Diesel Generating Station to fire in 2019, there was a generator failure in 2020 (Unit 2102). That loss, along with the loss of Unit 2089 due to the July 2022 fire, demonstrates that mobile gensets are not a reliable source of prime power. Moving to N-2 criteria in Charlottetown would provide a meaningful increase in reliability as it would provide additional redundancy, enabling Hydro to ensure continuity of service in the event of additional failures. The risk related to additional failures will remain until a permanent generating station is built.

Following the end of the 2022 shrimp processing season, and once the rented mobile genset is returned, Hydro will not have sufficient redundancy for N-2 in either the 2022–2023 winter peak season or the 2023 summer shrimp processing season. With only the three existing gensets, Hydro’s N-2 firm capacity would be 600 kW, which is below both the summer and winter peak loads.⁹

To achieve N-2 redundancy, Hydro intends to seek approval from the Board of Commissioners of Public Utilities (“Board”) to purchase a used 1,825 kW mobile genset from the Lower Churchill Project (“LCP”).¹⁰ Due to a voltage mismatch between the LCP unit and the electrical system in Charlottetown, the LCP unit will be used in L’Anse-au-Loup to replace a similarly sized unit and the L’Anse-au-Loup unit will be relocated to Charlottetown.

The addition of this 1,825 kW unit would increase the total installed capacity to 4,245 kW, as shown in Table 4, and the N-2 firm capacity to 1,510 kW.¹¹

⁷ N-2 redundancy refers to the ability to meet peak demand following the loss of the two largest generating units on the system.

⁸ “Long-Term Supply for Southern Labrador – Phase 1 – Response to Correspondence from the Board of Commissioners of Public Utilities Dated May 16, 2022 and May 19, 2022,” Newfoundland and Labrador Hydro, June 21, 2022.

⁹ Firm capacity would be reduced in the event of a derating of the 600 kW unit.

¹⁰ The purchase of the 1,825 kW genset will be included in the same supplemental capital application as the winterization of Unit 2102.

¹¹ Total installed capacity (4,245 kW) less the largest two generating units on the system (1,825 kW and 910 kW).

Table 4: Charlottetown Generating Units – With New Unit (kW)

	Peak kW
Unit 2088	910
Unit 2102	910
Unit 2044	600
New Unit	1,825
Total Capacity	4,245
Firm Capacity	2,420
N-2 Capacity	1,510
CHT Forecast Peak Load	1,568

This would achieve N-2 redundancy for the winter peak season but is insufficient to achieve a full N-2 redundancy during the summer peak season. To achieve N-2 redundancy during the summer season, Hydro is evaluating whether it would be appropriate to rent additional mobile generation for the shrimp processing season or to purchase an additional mobile genset that could provide additional year-round redundancy.

Should Hydro determine that purchasing additional mobile generation beyond the planned 1,825 kW genset is an appropriate step to take, Hydro will file a supplemental application setting out the full details and justification for the Board's consideration.¹²

Additional Correspondence

Hydro has received the attached correspondence from the towns of Charlottetown and Pinsent's Arm in light of the fire that occurred on July 2, 2022 and the additional delays that have occurred in the implementation of a long-term solution in the area. Hydro will continue consultations with these important stakeholders on maintaining safe reliable power to the area until a long-term solution can be implemented.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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

ecc:

¹² Rental of additional mobile generation on a temporary basis would be considered an operating expense.

Ms. C. Blundon
Public Utilities Board

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Town of Charlottetown

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July 6, 2022

Newfoundland and Labrador Hydro Head Office
Hydro Place, 500 Columbus Drive
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Re: Immediate Call for Construction of a Powerplant in Charlottetown

Newfoundland and Labrador Hydro Board of Directors,

The Town Council of Charlottetown is requesting a new power plant to be constructed in the town of Charlottetown immediately. Hydro's completion of required maintenance to reinforce the mobile generating units that act as the interim power solution for service in Charlottetown and Pinsents Arm has not been successful. On Saturday July 2nd 2022 another fire took place resulting in the loss of one of the temporary units. Though the town was once again very lucky, as the fuel source for the temporary units was just missed, if the fire had spread outside of the mobile unit the results could have been devastating to everyone who resides in the community.

As previously stated in correspondence issued on November 25th 2021, having lost our local Power Plant to a fire in November 2019 our town council waited patiently for resolution to the power issues in our community. Though no meeting took place until May 5th of 2021 between the Charlottetown Community Council and NL Hydro representatives, our council was satisfied with the resolution presented by the executives of NL Hydro. Though the solution did not include a immediate use of renewable resources, and there fore was not the ideal solution, council supported the project and assumed ground work would have been well underway. However, delays caused by neighboring communities and a reluctance by the PUB have managed to stall the project.

The Towns of Charlottetown and Pinsents Arm can no longer wait for development of the regional Power Plant. Though the Charlottetown Town Council is aware that immediate construction of a power plant in Charlottetown may reduce our regions chances of being connected to the Churchill Falls grid. We can no longer sit idle with a power solution that is sub par and dangerous for our residents. The NL Hydro Board of Directors must understand that our council request comes from our communities' immediate needs and that we can no longer be waiting for their solution.

Town of Charlottetown

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Please contact the town office at 709-949-0299 or by email at ctown@nf.aibn.com to set up a meeting with our Town Council. At this meeting we can put a plan in place to have sustainable power in Charlottetown by 2023.

Thank-you,

Rick Oram, Mayor
On Behalf of Charlottetown Town Council

Local Service District of Pinsent's Arm

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Phone: 709-951-2202
Email: localservicepa@yahoo.ca

July 20, 2022

Newfoundland and Labrador Hydro
Hydro Place, 500 Columbus Drive
St. John's, NL A1B 4K7

Dear Sir or Madam,

On behalf of the residents of Pinsent's Arm I'm writing this letter in support of the Town of Charlottetown in their request to have a new Power plant constructed in their Town.

The community of Pinsent's Arm receive power from the Plant at Charlottetown and have been having issues with Power outages since temporary units have been in operation after the Main Power plant was destroyed by fire in 2019.

Pinsent's Arm is a fishing community and the local fish plant is the main source of employment in our community and at present we only have **Single Phase power** so the fish plant has to operate freezing units with the use of a generator which has its own issues and breakdowns.

Along with a request for a new power plant at Charlottetown we are also **requesting 3 Phase power** for the community of Pinsent's Arm.

So, we're asking for your immediate attention to our request for new upgrades to our current power system at Charlottetown and Pinsent's Arm.

Thank you for your time in this matter.

Regards,



Mildred Clark
Secretary/treasurer LSDPA