

1 **Q. Reference: Christensen study, Schedule 1 Attachment 2**

2 At Table 1 (page 6), Christensen lists 5 surplus energy programs offered by utilities in Canada.
3 For each option listed, please confirm if the program is available solely or primarily to customers
4 who otherwise take firm power from the utility, or if the program is available to customers who
5 solely or primarily take non-firm power from the utility. Please provide references or
6 explanations for the answer.

7 If there are other surplus energy programs Hydro has investigated, please provide similar
8 information for those programs.

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11 A. Based on the Christensen Associates Energy Consulting, LLC (“CA Energy Consulting”) review,
12 Surplus Energy Program’s (“SEP”) are typically available to customers that take firm power from
13 the utility. As explained in Newfoundland and Labrador Hydro’s response to PUB-NLH-003 of
14 this proceeding, BC Hydro¹ has non-firm rates available to marine vessels docked and to
15 independent power producers who require energy for black-start requirements.

16 The utilities in Canada that offer SEP, as referenced in the CA Energy Consulting Study,² are
17 provided in Table 1, along with an explanation for whether or not these programs are primarily
18 available to customers that solely take non-firm power.

¹ The British Columbia Hydro and Power Authority (“BC Hydro”).

² “Application for a Non-Firm Rate for Labrador,” Newfoundland and Labrador Hydro, September 15, 2022, sch. 1, att. 2, p. 8 of 19, table 1.

Table 1: Non-Firm Incremental Energy Designs at Canadian Utilities

Rate	Available To
BC Hydro – Freshet Energy – RS 1892 ³	Eligible customers may receive electricity during the “freshet” period, which is the period of high water in the spring when hydroelectric generation is at its highest. The rate for the electricity is based on a formula that includes the customer's highest and lowest historical usage during the freshet period, as well as the customer's reference demand. Customers that avail of this rate would otherwise take firm power from the utility, as it is offered to existing transmission consumers.
BC Hydro – Incremental – RS 1893 ⁴	This energy is provided to customers already on other established transmission rate programs and the rate structure is similar to RS 1892 Freshet energy rate referenced above. The difference between 1893 and 1892 is that the incremental rate program is a pilot program that is applicable to customers for the full year, whenever non-firm energy is available. Because this program is offered to existing transmission customers, the customer would otherwise use available firm energy if the program was not offered.
Manitoba – Surplus Energy ⁵	<p>This energy is provided in excess of firm energy commitments, only when it is available. The customers that avail of these rates would also be provided firm energy up to a certain level. According to the SEP report filed in Manitoba Hydro’s 2023/24 & 2024/25 General Rate Application. This energy is provided to three types of customers:</p> <p>Industrial Load - Option 1 – This option is available to industrial loads whose Total Demand is 1,000 kVA or greater. Total Demand is defined as the Reference Level of Demand plus the level of demand associated with SEP. Under this option customers may only designate 25% of their total load as SEP load, with the remaining 75% being their Reference Demand, unless adequate alternate backup source of energy is provided per the Terms and Conditions of the program.</p> <p>Heating Load - Option 2 – This option is available to electrical loads of 200 kW or greater. The electricity is to be used for space and/or water heating only and must be separately metered from the customer’s firm load. Customers must have an alternate backup energy source capable of heating the entire load in the event of an interruption.</p> <p>Self-Generation Displacement - Option 3 – This option is available to industrial intermittent loads with total demand between 200 kW to 50,000 kW. Load would not be considered intermittent if the average monthly load factor exceeds 25%. The load must be separately metered from the customer’s firm load and must be fully backed up by generating equipment which is leased or owned by the customer and is located on the premises of the SEP load.</p>

³ Canada, (2017–2022), *Electric Tariff*, British Columbia Hydro and Power Authority, p. 5-29.

<<https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-filings/electric-tariff/bchydro-electric-tariff.pdf>>

⁴ Canada, (2017–2022), *Electric Tariff*, British Columbia Hydro and Power Authority, p. 5-38.

<<https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/tariff-filings/electric-tariff/bchydro-electric-tariff.pdf>>

⁵ “2023/24 & 2024/25 General Rate Application,” The Manitoba Hydro-Electric Board, December 21, 2022, app. 8.18.

<https://www.hydro.mb.ca/docs/regulatory_affairs/pdf/electric/gra_2023_2025/08-18_surplus_energy_annual_reports.pdf>

Rate	Available To
Hydro-Québec for Large Customers	<p>There are several surplus energy rates and curtailment options available to Hydro-Québec's Large Customers.</p> <p>For example, large "Rate L" customers, with a contract power over 5,000 kW, have options to avail of credits in exchange for curtailing their electricity consumption. For the most part, these customers would be using firm power.⁶</p> <p>In addition to the curtailment credits, Hydro-Québec offers a non-firm "Rate LD" to customers whose usual power source has temporarily failed. The non-firm "Rate LD" is a rate offered by Hydro-Québec for the delivery of backup power to customers whose normal source of power has failed temporarily, provided that the customer's normal independent production and minimum billing demand meet certain requirements.⁷</p> <p>The customers that use non-firm "Rate LD" would not otherwise use firm power as they would generate it themselves. However, these customers also have the option to enter into a contract with Hydro-Québec to obtain a <i>firm</i> "Rate LD" amount, at a higher cost.</p> <p>Hydro-Québec also offers an "Additional Power" option for large and medium customers. This option allows these customers to consume more electricity than usual during off-peak hours to meet short-term or exceptional needs.</p> <p>The price of the additional electricity, which includes both demand and energy, is determined monthly and reflects Hydro-Québec Distribution's marginal supply cost. It cannot be lower than 4.787 cents per kilowatt-hour for large customers or 5.810 cents per kilowatt-hour for medium customers.</p> <p>The energy consumed as additional electricity is calculated and billed in 15-minute blocks. The reference power and any remaining energy is billed at the normal large and medium rate prices and conditions.</p> <p>Hydro-Québec may prohibit the use of additional electricity on two hours' notice based on load management and system availability.</p> <p>Large and Medium Customers must apply to Hydro-Québec at least five business days before the start of the consumption period and must agree to adhere to the Additional Electricity Option for the entire consumption period.</p>

⁶ Hydro-Québec, "Interruptible Electricity Options for Rate L customers," <<https://www.hydroquebec.com/business/customer-space/rates/interruptible-electricity-options-large-power-customers.html>>.

⁷ "2022 Electricity Rates Effective April 1, 2022," Hydro-Québec, sec. 5, p. 98. <<https://www.hydroquebec.com/data/documents-donnees/pdf/electricity-rates.pdf>>

Rate	Available To
NB Power ⁸	<p>This energy is provided in excess of firm energy commitments, only when it is available. The customers that avail of these rates would also be provided firm energy up to a certain level.</p> <p>NB Power states that “NB Power will supply interruptible energy in excess of the demand reserved for the Customer up to the amount of the Customer's unused generation capability, if such energy is available at the Delivery Point, and can be provided with available resources over and above the requirement of other firm commitments. The rate will be based on NB Power's incremental cost of providing such energy.”</p> <p>“Surplus Energy is closed to new, long-term load requests received since January 1, 2021”⁹</p> <p>Surplus Energy is supplied only if it can be provided with available resources over and above the requirement of other firm commitments.</p>

⁸ New Brunswick Power Corporation (“NB Power”).

⁹ Énergie NB Power, “N. Rate Schedules and Rate Application Guidelines,”

<<https://www.nbpower.com/en/accounts-billing/understanding-your-bill/rate-schedules-and-policies/n-rate-schedules-and-rate-application-guidelines/#:~:text=Interruptible%20and%20Surplus%20Energy%20prices%20are%3A%20On%20peak,incremental%20cost%20during%20off%20peak%20hours%20%2B%200.3%C2%A2%2FkWh>>.