

1 Q. **Reference: Application**

2 Please provide details of Hydro’s approach to assessing the relative cost of non-wires  
3 alternatives (NWAs) and distributed energy resources (DERs) to the capital investment in  
4 traditional assets that are included in Hydro’s capital plan, including any reports or analyses that  
5 show the comparative analysis for the projects included in the 2024 Capital Budget Application.  
6 If NWAs have not been considered, please explain why they have been excluded as options  
7 without a comparison of alternatives.

8

9

10 A. Newfoundland and Labrador Hydro (“Hydro”) considers a broad range of available options as  
11 part of its strategic and capital planning processes to ensure it continues providing customers  
12 with reliable service at the least possible cost. This includes consideration of non-wire  
13 alternatives (“NWA”). Hydro’s long-term approach to planning for the interconnected system  
14 was presented to the Board of Commissioners of Public Utilities (“Board”) in its 2018 “Reliability  
15 and Resource Adequacy Study.”<sup>1,2</sup> As part of the study, alternative resources including wind,  
16 solar, battery installations, rate design, customer demand management, and capacity  
17 assistance, as well as traditional resources (e.g., hydraulic units, combustion turbines) were  
18 considered as potential sources of supply to meet changing requirements on the Newfoundland  
19 and Labrador Interconnected System. The following provides some specific examples of Hydro’s  
20 implementation and approach considering NWA in both its interconnected and isolated  
21 systems.

22 **Energy Efficiency**

23 Energy efficiency is considered during the development of Hydro systems load forecasts that are  
24 then used in the development of a number of projects, either as part of the primary justification  
25 or when determining equipment size. These forecasts are based on historical energy and

---

<sup>1</sup> “Reliability and Resource Adequacy Study,” Newfoundland and Labrador Hydro, rev. September 6, 2019 (originally filed November 16, 2018).

<sup>2</sup> Updates to the 2018 Reliability and Resource Adequacy Study were filed on November 15, 2019 and October 3, 2022; another update is proposed for filing in the spring of 2024.

1 demand trends from each area under consideration and inherently include the impact of  
2 ongoing conservation and demand management programs that have been present in Hydro's  
3 systems over the past number of years. The savings associated with delaying the requirement  
4 for infrastructure additions or downsizing infrastructure due to reduced energy and demand are  
5 realized by planning infrastructure additions based on this load forecast. In isolated systems,  
6 Hydro believes that it has captured a significant portion of the most cost-effective energy-  
7 efficiency opportunities that existed in the residential sector over the years. New residential  
8 programming will focus on space heating and working with community partners to leverage  
9 funding to serve all homes. Hydro has recently placed a stronger focus on energy audits for  
10 commercial customers, with the intention they will identify energy-efficiency opportunities that  
11 may be more complex and require different strategies to successfully execute.

## 12 **Distributed Energy Resources**

13 In 2017, Hydro introduced the net metering service option for customers who generate  
14 electricity from small-scale renewable sources to offset their own usage.<sup>3</sup>

15 Distributed energy resources in isolated communities are considered in a similar fashion to  
16 renewable energy in general. Hydro considers the integration of wind, solar, and run-of-river  
17 hydro generation to be viable alternatives for energy displacement only, as these technologies  
18 provide minimal or no firm capacity. As an example of the integration of these technologies in  
19 Hydro's isolated systems, Hydro has supported the interconnection of solar panel rooftop  
20 installations at five of its most northern regulated communities between 2019 and 2022. The  
21 integration of these systems has reduced diesel fuel consumption resulting in lower billings for  
22 the customer. However, given the intermittent nature of renewable energy sources such as  
23 wind and solar, these resources are not considered to provide firm capacity to its isolated  
24 systems. Hydro has further investigated the role of renewable energy in its isolated systems as  
25 part of its application for approval of its long-term supply plan for southern Labrador.<sup>4</sup>

---

<sup>3</sup> As approved in *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 17(2017), Board of Commissioners of Public Utilities, May 18, 2017, to qualify for the net metering service option, a customer's generation must: (i) be designed not to exceed the customer's annual energy requirements; (ii) be 100 kW or less; and (iii) produce electricity from a renewable resource.

<sup>4</sup> "Long-Term Supply for Southern Labrador – Revision 1," Newfoundland and Labrador Hydro, rev. May 31, 2023 (originally filed July 16, 2021).

1           **Demand Response and Capacity Assistance**

2           On the Island Interconnected System, both demand response and capacity assistance programs  
3           have been used to help manage peak demand. In terms of demand response, Hydro supports  
4           the continued use of Newfoundland Power Inc.'s ("Newfoundland Power") curtailable load  
5           program, which provides the system with up to 12 MW of curtailable load during the winter  
6           operating season.

7           With respect to capacity assistance programs on the Island Interconnected System, Hydro has  
8           arrangements with some of its Industrial customers to provide generation directly to the Island  
9           Interconnected System upon request.

10          Hydro has been investigating incorporating demand response into its operations in its isolated  
11          systems by undertaking two pilot programs in recent years—the Postville Load Control and  
12          L'Anse-au-Loup Smart Thermostat Pilot Programs. The results of these pilot programs indicate  
13          that direct load control in isolated systems can reduce the impact on system peak; however, the  
14          corresponding "bounce back" peaks can be higher than the original avoided peak. Further  
15          development and experience are required with these strategies to improve their reliability  
16          before they can be considered firm demand response capacity, along with better managing of  
17          "bounce back" demand peaks, which can be higher than the original avoided peak. Hydro will  
18          continue to explore opportunities for demand response strategies.

19          Widespread demand response programs, such as offering interruptible supply agreements, are  
20          not normally considered alternatives to projects on Hydro's distribution and isolated generation  
21          system, given the remote nature of their location and the required infrastructure and process to  
22          enable smart technologies.

23           **Rate Design**

24          Hydro seeks to offer customer rates that promote efficient usage while maintaining compliance  
25          with provincial legislation and government policy. The impacts of efficient rate design are  
26          reflected in Hydro's load forecasts and therefore the 2024 Capital Budget Application.

27          On the Island Interconnected System, Hydro's retail rates mirror those offered by Newfoundland  
28          Power and are consistent with government policy. General Service rates on the Island

1 Interconnected System include demand charges that are higher during peak months of the year,  
2 which provides a financial incentive for customers to minimize their winter peak. On its isolated  
3 systems, Hydro’s domestic diesel customers have an inclining block rate, which charges higher  
4 energy rates for increased levels of consumption each month

5 **Industry Groups**

6 Hydro is involved in several industry groups and committees to stay informed of advancements  
7 in technology and their role in the regulated utility business. This includes advancements in  
8 NWA solutions. Some of these industry groups and committees include:

- 9 ● Electricity Canada;<sup>5</sup>
- 10 ● The Center of Energy Advancement through Technical Innovation (“CEATI”)  
11 International;<sup>6</sup>
- 12 ● Atlantic Power Utilities Distribution Conference (“APUDC”);<sup>7</sup>
- 13 ● Off-Grid Utility Association (“OGUA”);<sup>8</sup> and
- 14 ● Efficiency Canada.<sup>9</sup>

---

<sup>5</sup> Electricity Canada includes 40 member utilities from across Canada. Hydro is a member utility.

<sup>6</sup> CEATI International includes 130 member utilities globally. Hydro is a member utility. This membership provides access to various reports on traditional poles and wires asset management, along with emerging technologies such as NWA.

<sup>7</sup> The APUDC is an annual conference of the Atlantic Canadian utilities including Newfoundland Power, Hydro, Nova Scotia Power, Maritime Electric, Saint John Energy, and New Brunswick Power. These conferences include presentations and discussion by the utilities on various utility initiatives, research, and projects including NWA.

<sup>8</sup> The OGUA is a group of all major Canadian utilities that operate isolated diesel-powered electrical system for remote communities across Canada.

<sup>9</sup> Efficiency Canada is a research and policy group that focuses on maximizing the benefits of energy efficiency resulting in a sustainable environment and a productive economy. This includes access to a policy database that includes NWAs.