



1 Further, IRENA offers the following as typical small hydro designations in various  
2 countries:

Country / Region	Small Hydropower Definition (MW)
Brazil	≤ 30
Canada	< 50
China	≤ 50
European Union	≤ 20
India	≤ 25
Norway	≤ 10
Sweden	≤ 1.5
United States	5-100

3 Small hydropower plants are more likely to be run-of-river facilities than are  
4 large hydropower plants, but reservoir (storage) and run-of-river hydropower  
5 plants of all sizes utilise the same basic components and technologies.

6

7 Hydro considers the small plants at Venam's Bight, Snook's Arm, and  
8 Roddickton Plant as small hydro.<sup>2</sup> These plants are the only hydro facilities  
9 owned by Hydro not directly included in capacity assessments for operational as  
10 well as long term system planning purposes.

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12 As the primary utility responsible for bulk electrical supply in the province,  
13 Hydro is required to plan for appropriate capacity and energy to serve its

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<sup>2</sup> According to IRENA definitions these would be considered as "mini" hydro.

1 customers. Appropriate planning in this regard includes decision making control  
2 for various aspects of any hydro facility that is of a material contribution to the  
3 Island Interconnected System:

- 4 i. If a unit is unplanned out of service, Hydro must decide if an immediate  
5 response is required to return the unit to service, or if the unit can  
6 remain out of service, as it relates to other system capabilities, such as  
7 operating reserves;
- 8 ii. For planned out of service timing such as for annual maintenance or for  
9 capital works, Hydro would consider when a unit can be taken out of  
10 service in consideration of other planned or unplanned unit  
11 requirements;
- 12 iii. For capacity contribution to the overall system, Hydro will monitor the  
13 availability of a unit and determine the appropriate level of availability as  
14 the system requires and make determinations about adequacy of the  
15 availability. This determination is factored into required long term  
16 decisions, such as improving or not improving on the availability of  
17 generating units, as may or may not be cost justified.
- 18 iv. For the long term decision making of a unit, Hydro will monitor the unit  
19 and its contribution, and decide on the cost justified long term  
20 investments and eventual retirements, as is dictated by the system  
21 planning requirements.

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23 For the small hydro units noted, Hydro does not regard these three small units  
24 in its daily, annual or long term needs from a capacity contribution perspective.

1           b. Part a of Nalcor’s response to PUB-NALCOR-238 describes how the generating  
2           units of material size with respect to contribution to the Island Interconnected  
3           System are considered in Hydro’s daily, annual and long term decision making.

4           Hydro does not consider the Exploits facilities as small hydro. Exploits’ capacity  
5           output is a material contribution to the Island Interconnected System. While  
6           they contain multiple units, the Exploits facilities in Grand Falls and Bishops Falls  
7           as a whole are considered in Hydro’s long term planning to jointly provide a firm  
8           contribution of 63 MW. The Exploits facilities have an installed capacity of over  
9           90 MW. These assets are managed and planned long term as to provide this  
10          firm contribution. Further, a substantial portion of the flows that drive the  
11          Exploits facilities are controlled and originate from the large Red Indian Lake  
12          reservoir, a characteristic not usually inherent to small hydro which are typically  
13          run-of-river facilities and highly subject to seasonal variations in river flows.<sup>3</sup>

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15          Similarly, Hydro does not regard the 40 MW Granite Canal facility as small  
16          hydro. The output of the Granite Canal facility is a material contribution to the  
17          overall island system capacity. It is also supported by a larger multi-day  
18          reservoir and is not a run-of-river facility. Hydro plans and dispatches this plant  
19          on a daily, annual and long term basis, consistent with its dispatch of larger  
20          units.

21  
22          Hydro also owns and operates the smaller eight MW Paradise River facility on  
23          the Burin Peninsula. This facility operates under run-of-river philosophy which,  
24          combined with its size, would fit the IRENA typical designation for small hydro

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<sup>3</sup> Approximately 50% of the water utilized by the Exploits facilities originates from controlled sources.

1            (i.e., *1 MW to 20 MW usually feeding the grid*). However, Hydro includes the  
2            eight MW capacity for this plant in its short term (operational) and long term  
3            (planning) capacity assessments as this output can be managed to be made  
4            available during peak conditions.