

1 **Q. (Reference NLH-NP-020 and NLH-NP-021) Please confirm the scenario in which the**  
 2 **Sandy Brook plant is treated as "fully dispatchable" does not correspond to the way**  
 3 **the plant has normally operated. Please confirm that the "run of river" scenario**  
 4 **corresponds to the normal pattern of production from the Sandy Brook plant.**  
 5

6 A. A fully dispatchable hydro plant has sufficient storage to allow it to produce at its full  
 7 rated capacity for all potential periods of need. A run of river plant has very little storage  
 8 and provides minimum flexibility to schedule production for periods of greatest value.  
 9 The value of capacity from a fully dispatchable plant is normally higher than the value of  
 10 capacity from a run of river plant.  
 11

12 The Sandy Brook Plant (the "Plant") is considered a dispatchable plant, but is not  
 13 considered a fully dispatchable plant. This is because it cannot provide full-rated  
 14 capacity for all hours of need. However, the Plant can be dispatched for many hours of  
 15 need.<sup>1</sup> As a result, the way the Plant is operated is similar to the way it would operate if  
 16 it were a fully dispatchable plant.  
 17

18 The operation of the Plant reflects the following:  
 19

- 20 (i) Use of a water management control system that maximizes the production  
 21 efficiency of the Plant during periods of operation. The control system  
 22 automatically shuts down the Plant when forebay water levels are insufficient to  
 23 maintain efficient operation and restarts the Plant when forebay water levels  
 24 recover, allowing for production at the most efficient levels.<sup>2</sup>  
 25
- 26 (ii) When required, remote operator intervention will maximize the Plant's output for  
 27 increased production at Newfoundland and Labrador Hydro's ("Hydro") request,  
 28 or shut down the Plant to build up storage for potential future requests.<sup>3</sup>  
 29
- 30 (iii) The level of rainfall and the amount of storage can limit the time the Plant can  
 31 maintain maximum production. See response to Request for Information  
 32 NLH-NP-014.<sup>4</sup>  
 33

34 The Plant's normal production is not reflective of a run of river hydro plant. This is  
 35 because the Plant has sufficient storage to respond during many hours of need.<sup>5</sup>

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<sup>1</sup> See response to Request for Information NLH-NP-014 for the performance of the plant during system peak hours from 2011 to 2020.

<sup>2</sup> A hydro plant's efficiency varies depending on the amount of the water flow through the turbine. Setting production levels at the most efficient operating levels maximizes the energy production for the available water.

<sup>3</sup> Hydro routinely requests maximizing production for managing reserve levels, which includes the need to address a potential supply shortfall as discussed in response to Request for Information PUB-NP-003.

<sup>4</sup> The Plant has a total available storage of 2.6 GWh. This level of storage represents about 17 days of production at a production rate of 6.31 MW.

<sup>5</sup> The production pattern of a run of river plant in which there is little to no storage reflects the flow of the river. As a result, the production during times of need would only reflect the water flow available at that time.

1           The economic evaluation completed by Newfoundland Power recognizes that the Plant's  
2           capacity value is not equivalent to a fully dispatchable plant nor is it a run of river plant.  
3           The Plant's capacity value is somewhere between that of a fully dispatchable hydro plant  
4           and a run of river hydro plant.  
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6           Newfoundland Power's approach to evaluating the Plant's capacity value considers 2  
7           scenarios: one treats the Plant as a fully dispatchable plant and the other treats it as a run  
8           of river plant. While neither scenario reflects the Plant's actual status as a dispatchable  
9           plant with storage limitations, using these two scenarios provides a reasonable range of  
10          values for the Plant's capacity. This economic evaluation shows that the Plant's  
11          continued operation is beneficial to customers when operating as a run of river plant as  
12          well as when it operates as dispatchable.<sup>6</sup>

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<sup>6</sup> See Newfoundland Power's 2022 *Capital Budget Application, Report 1.2 Sandy Brook Plant Penstock Replacement, Appendix A – Sandy Brook Plant Economic Evaluation, Section 4.0 Economic Evaluation Results.*