

- 1 **Q. Reference: “2022 Capital Budget Application,” Newfoundland Power, May 18,**  
 2 **2021, Volume 1, Section 1.2, Sandy Brook Plant Penstock Replacement,**  
 3 **Appendix A, Attachment C**  
 4
- 5 **a) Newfoundland Power notes that beyond 2030, 2030–2042 marginal cost**  
 6 **projections were escalated based on the Conference Board of Canada GDP**  
 7 **deflator, long-term projection dated December 5, 2019. Please explain**  
 8 **Newfoundland Power’s rationale as to why Gross Domestic Product (“GDP”) is**  
 9 **an appropriate escalation for marginal cost given that the marginal cost is based**  
 10 **on market energy pricing?**  
 11
- 12 **b) Please provide a cost-benefit analysis for this project removing the effects of**  
 13 **GDP escalation on marginal cost.**  
 14
- 15 **A. a) The economic analysis used in support of Newfoundland Power’s *Sandy Brook Plant***  
 16 ***Penstock Replacement* project uses a forecast of marginal costs provided by**  
 17 **Newfoundland and Labrador Hydro (“Hydro”).<sup>1</sup> The marginal cost forecast provided**  
 18 **by Hydro includes estimates of marginal costs up to 2029.**  
 19
- 20 The economic analysis of the *Sandy Brook Plant Penstock Replacement* project  
 21 includes a study period of 50 years, the expected service life of the new penstock.  
 22 Newfoundland Power completes its net present value analysis based on nominal  
 23 dollar cash flows. The analysis requires cost projections to include the effects of  
 24 inflation over time. In the absence of long-term marginal cost projections, the Gross  
 25 Domestic Product (“GDP”) deflator, a general inflationary index, is used for the  
 26 escalation of marginal costs beyond 2029.  
 27
- 28 As a measure of the reasonableness of using the GDP deflator for escalating marginal  
 29 costs beyond 2029, the average annual marginal cost increase for 2022 to 2029, as  
 30 provided by Hydro, can be compared to inflationary cost increases indicated by the  
 31 GDP deflator index for the same period. The annual average change in the  
 32 components that comprise Hydro’s marginal costs vary from an average increase of  
 33 0.8% to 4.7% per year.<sup>2</sup> This compares to the GDP deflator index for the same period  
 34 which indicates an annual average inflationary cost increase of 1.7% per year.

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<sup>1</sup> The forecast of marginal costs is based on Hydro’s 2020 marginal cost update as provided to Newfoundland Power on April 9, 2020.

<sup>2</sup> The average marginal cost increase from 2022 to 2029 by component are: 0.8% for energy in the Winter on-peak period, 1.6% for energy in the Winter off-peak period, 4.7% for energy in the Non-Winter period, and 2.3% for capacity.

- 1 b) Table 1 summarizes the results of the economic analysis with inflationary increases in  
2 marginal costs removed.

**Table 1**  
**Economic Evaluation Results**

	<b>50 Year Levelized Value</b>	<b>Net benefit</b>
Cost of Plant Production	<b>3.22 ¢/kWh</b>	
Benefits of Production (Run of River)		
Value of Energy	4.71 ¢/kWh	
Value of Capacity	<u>3.83 ¢/kWh</u>	
<b>Total</b>	<b>8.54 ¢/kWh</b>	<b>5.32 ¢/kWh</b>
Benefits of Production (Fully Dispatchable)		
Value of Energy	4.71 ¢/kWh	
Value of Capacity	<u>6.48 ¢/kWh</u>	
<b>Total</b>	<b>11.19 ¢/kWh</b>	<b>7.97 ¢/kWh</b>