

1 Q. Page 7 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule  
2 3] notes that *“the results of the Study show there is limited potential for electrification of space  
3 and water heating in homes and buildings. The limited potential is due to unfavorable customer  
4 economics.”*

5 How is the forecast in the 2021 Plan comparable to the forecasts/estimates during the Muskrat  
6 Falls rate mitigation review. For example, Synapse Energy Economics, Inc. Phase 1 report  
7 [Findings on Muskrat Falls Project Rate Mitigation] noted the following:

- 8 • The low scenario assumes that 0.4 percent of oil-heated homes convert to heat pumps  
9 per year, reaching 5 percent of homes by 2030; the high scenario assumes that 2  
10 percent of oil-heated homes convert to heat pumps per year, reaching 24 percent by  
11 2030 [page 27].
- 12 • Low scenario assumes that 0.4 percent of oil-heated commercial buildings convert to  
13 heat pumps each year, reaching 18 percent of those buildings by 2030; the high scenario  
14 assumes that 4 percent of oil-heated commercial buildings convert to heat pumps each  
15 year, reaching 60 percent by 2030 [page 28].
- 16 • Figures 9 and 10 of the Synapse report estimated that the added sales from heating  
17 electrification would be between 121 GW.h and approximately 300 GW.h for the  
18 commercial class; and between 13 GW.h and 58 GW.h for the residential class.

19 Please explain the difference in conclusion and whether this arises primarily as a result of a  
20 difference in assumptions, of input data, or of modelling approaches. If due to difference in  
21 assumptions or data, please provide a comparison table showing the key input data and  
22 assumptions.

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1 A. As Synapse Energy Economics Inc. (“Synapse”) was retained by the Board of Commissioners of  
2 Public Utilities (“Board”),<sup>1</sup> Hydro does not have access to any information with respect to  
3 Synapse’s work beyond that filed under the Board’s Reference on Rate Mitigation Options and  
4 Impacts. Newfoundland and Labrador Hydro (“Hydro”) has completed a cursory review of the  
5 underlying assumptions noted in the Synapse Phase 1 report.

6 In comparing the Synapse Phase 1 report to the Dunsky Energy Consulting (“Dunsky”)  
7 Conservation Potential Study 2020-2034, it appears to Hydro that there is a difference in the  
8 modelling approach for each study which would materially impact the forecast energy and  
9 demand implications in modelled scenarios.

10 The most fundamental difference is that the Synapse report assumes a more substantial amount  
11 of residential and commercial customers currently using oil heat will convert to electric heating,  
12 in the form of ductless mini-split heat pumps; the Dunsky study assumes little to no oil to  
13 electric conversions of heating in both residential and commercial sectors in its low scenario due  
14 to poor economics for the customer. The Dunsky study assumes the majority of ductless mini-  
15 split heat pump installations will occur with customers that currently heat with electric  
16 resistance heating, naturally reducing electricity sales over the period modelled; this compares  
17 to Synapse’s modelling which predicts a substantially higher number of customers will convert  
18 from oil to electric heating, increasing electricity sales.

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<sup>1</sup> “Engagement Agreement: Rate Mitigation Options and Impacts Reference - Retention of Synapse Energy Economics, Inc. as an Expert Consultant,” Newfoundland and Labrador Board of Commissioners of Public Utilities, September 27, 2018, <[http://pub.nf.ca/2018ratemitigation/general/From%20Synapse%20Energy%20Economics,%20Inc%20-%20Signed%20Engagement%20Agreement%20-%202018-10-04%20\(Redacted\).pdf](http://pub.nf.ca/2018ratemitigation/general/From%20Synapse%20Energy%20Economics,%20Inc%20-%20Signed%20Engagement%20Agreement%20-%202018-10-04%20(Redacted).pdf)>.