

1 **Q. (Reference Application, 1.2 Feeder Additions for Load Growth)**  
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- 3 **a) For these projects, were dynamic rates such as time-of-day rates**  
 4 **considered as an alternative?**  
 5 **b) What impact are conversions from baseboard heating to heat pumps**  
 6 **expected to have on demand served by these feeders?**  
 7 **c) What impact is EV charging expected to have on demand served by these**  
 8 **feeders?**  
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- 10 A. a) The *Feeder Additions for Load Growth* project includes two items to upgrade  
 11 existing overloaded single-phase lines to three-phase. Distribution feeder  
 12 PUL-01 requires an upgrade to address an overload on a single-phase line that  
 13 exceeds the maximum rating of 85 amps by 36%. Distribution feeder PUL-04  
 14 requires an upgrade to address an overload on a single-phase line that exceeds  
 15 the maximum rating of 85 amps by 118%.

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 17 Dynamic rates, such as time-of day rates, are not currently cost effective for  
 18 Newfoundland Power's customers.<sup>1</sup> As a result, dynamic rates were not  
 19 considered as a viable alternative for addressing existing overload conditions  
 20 under the *Feeder Additions for Load Growth* project.  
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- 22 b) Newfoundland Power's customers have been installing heat pumps to offset  
 23 electric baseboard heating for several years.<sup>2</sup> While heat pumps have been  
 24 reducing customer load overall, heat pump adoption has not offset load growth  
 25 or resulting overload conditions on some of the Company's fastest growing  
 26 feeders, such as those included in the *Feeder Additions for Load Growth* project.  
 27 Newfoundland Power does not anticipate continued adoption of heat pumps  
 28 would eliminate overload conditions on these high growth feeders in the future.  
 29 For more information regarding the impact of heat pump adoption on system  
 30 load, see the response to Request for Information CA-NP-084.  
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- 32 c) While the Company does not have specific data regarding potential impacts of EV  
 33 charging on the demand served by the feeders included in the *Feeder Additions*  
 34 *for Load Growth* project, any future load growth associated with EV charging  
 35 would further justify the requirement to complete this project to address the  
 36 existing overload conditions. For more information regarding the Company's  
 37 approach to managing EV load, see the response to the Request for Information  
 38 PUB-NP-011.

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<sup>1</sup> The cost-effectiveness of dynamic rates, which require interval metering, was evaluated by Dunsky Energy Consulting ("Dunsky") as part of the market potential study included in the *Electrification, Conservation and Demand Management Plan: 2021-2025*. Dunsky determined that the benefit-to-cost ratio of dynamic rates is approximately 0.5 using the Program Administrator Cost test, meaning the customer benefits are approximately half the cost. Dynamic rates are currently expected to become cost effective for customers in the 2030 to 2034 timeframe. For more information, see the response to Request for Information CA-NP-053 filed as part of Newfoundland Power's *2021 Electrification, Conservation and Demand Management Application*.

<sup>2</sup> For example, the penetration of heat pumps among Newfoundland Power's Domestic customers increased from approximately 4% in 2014 to approximately 18% in 2020. This represents an increase from approximately 9,000 customers in 2014 to approximately 43,000 customers in 2020.