

1 Q. **Reference: CA-NLH-012.**

2 The response (part i) states *“Through the development of its 2022 Capital Budget Application*  
3 *“Replace Metering System” (“Metering Application”), Hydro commissioned a study on various*  
4 *metering technology alternatives which was prepared by a third party, Util-Assist. The results of*  
5 *this study are consistent with Hydro’s Metering Application, that drive-by AMR was the least-*  
6 *cost alternative to address its metering requirements, particularly in the context of the*  
7 *Conservation Potential Study’s findings on dynamic rates. A copy of this study is provided as CA-*  
8 *NLH-012, Attachment 1.”* Attachment 1 is a June 15, 2020 report by Util-Assist Inc. entitled  
9 *“Business Case Report for Next Generation Metering (NGM) - Newfoundland and Labrador*  
10 *Hydro”*. Following are excerpts from the report.

11 Attachment 1, page 8 of 24 indicates that the study considered 4 options, including: full-scale  
12 AMR (Option 1), AMR-lite (Option 3), full-scale AMI (Option 2) and AMI-lite (Option 4).

13 Attachment 1, page 8 of 24 defines the AMI-lite option as *“representing the full deployment of*  
14 *AMI meters and network infrastructure, paired with NLHs current head end software solution,*  
15 *Command Center without the data management software and integration that typically*  
16 *accompanies AMI deployments.”*

17 Attachment 1, page 8 of 64 states *“The case for Option 1 (Appendix B) – Full-scale PLC AMR (L+G*  
18 *PLX), returned a positive \$10.2M NPV over a 21-year system lifecycle with all meters being*  
19 *deployed in year one. From a technical perspective, there were several concerns with*  
20 *recommending this option to NLH including a higher cost, technology limitations and a potential*  
21 *issue with the viability of the solution through the system lifecycle over which the finances were*  
22 *based.”*

23 Attachment 1, page 8 of 64 states *“The third case, Option 3 (Appendix D) – Full-scale Drive-by*  
24 *AMR “lite” with NL Power’s Itron Drive-by solution over a 21- year system lifecycle was reviewed*  
25 *next. While a viable solution financially (\$17.6M NPV), like that with Option 1, the technological*  
26 *limitations to a drive-by solution are too great. As noted in Section 2: Technology and Trends, the*  
27 *trend amongst utilities in Canada and really across North America is toward the deployment of*  
28 *AMI. Drive-by AMR meter reading is something that electric utilities are moving away from and*  
29 *not towards. As the utility industry is searching for ways in which to improve Customer*

1        *Experience, drive-by metering does the opposite in that it improves the utility's experience while*  
2        *preventing any meaningful impact to the customer. Regardless of technology solution selected,*  
3        *the most significant cost by far to the utility is the replacement of meters, at upwards of 75% of*  
4        *the capital cost. With this in mind, understanding that money is going to have to be spent, NLH*  
5        *must consider what the best investment is for their customers and their utility. Drive-by metering*  
6        *is enticing due to relative cost in comparison to AMI, but when viewed in the current climate of*  
7        *where the industry is with more advanced AMI solutions and the fact that this will be a 20-year*  
8        *investment, the risk to move forward with Drive-by metering is too great and is not*  
9        *recommended."*

10       Attachment 1, page 20 of 64, Table 6 quantifies three AMI-Lite benefits including: avoided costs  
11       of meter replacements (\$13.7 million), reduced manual meter reading (\$84 million) and avoided  
12       cost of meter reading vehicles (\$1.0 million). It does not quantify other benefits of AMI  
13       identified in CA-NLH-012d including: real-time information concerning usage, remote  
14       disconnect/reconnect or power limiting, an improved knowledge of the distribution system  
15       bettering responses to outages, and the ability to implement dynamic rate structures such as  
16       time-of-use rates or critical peak pricing. Neither does it quantify other benefits of AMI such as:  
17       monitoring power quality, enablement of distributed energy generation, the ability to provide  
18       customers personalized energy-saving tips and recommendations and the ability to provide  
19       outage and power restoration notifications to customers.

20       Attachment 1, page 20 of 64, Figure 2 shows benefits of the AMI-lite strategy exceeding \$30  
21       million by 2043. Table 5 summarizes the results of the analysis, and shows with respect to the  
22       AMI lite strategy: Net present value benefits (benefits less costs) of \$13.4 million, an IRR  
23       (internal rate of return) of 21%, a benefit to cost ratio of 2.39 and breakeven in 6 years.

24       Attachment 1, page 26 of 64 states *"Pursuing a Drive-by AMR "lite" or PLX-based solution*  
25       *creates significant risk for NLH and could very well put the utility in the same position as they are*  
26       *currently, with an obsolete metering system that is not capable of meeting future requirements*  
27       *due to its limited function and expected roadmap as of today. Understandably, the chosen*  
28       *strategy must protect the utility from being back in this same position of an obsolete system*  
29       *within the 20-year system life cycle."*

1 Attachment 1, page 26 of 64 states *“Understanding that the business case for full AMI does not*  
2 *pan out, and that proceeding with the currently deployed L+G PLX solution carries too many*  
3 *risks, it is recommended that NLH adopt an AMI “lite” strategy, utilizing the L+G RF mesh AMI*  
4 *solution that has a positive payback but limited in scope, i.e., meters, collectors, and installation,*  
5 *in order to achieve a positive business case. This approach takes advantage of the Command*  
6 *Center software already in place at the utility.”*

7 Attachment 1, page 26 of 64 states *“This is a strategy of migration that enables NLH to*  
8 *confidently move forward into the future with a solution that resolves the current system*  
9 *obsolescence challenges while simultaneously protecting their investment by providing the utility*  
10 *with an out of the box solution that provides significantly more value in terms of function and*  
11 *future-proofing, e.g., future AMI use cases, than currently deployed systems.”*

12 Attachment 1, page 26 of 64 states *“The recommendation is based on it being the better*  
13 *investment, proven out both technically and financially, in both the near and long-terms and it*  
14 *represents the best path forward for Newfoundland and Labrador Hydro.”*

15 **a)** Please confirm that Hydro chose the drive-by AMR strategy contrary to the  
16 recommendation in the report even though: 1) the assessment did not quantify all of  
17 the benefits of AMI identified above, 2) it is a technology that utilities are moving away  
18 from and not towards, 3) it prevents any meaningful positive impact on customers, 4)  
19 regardless of technology solution selected, the most significant cost by far to the utility  
20 is the replacement of meters, at upwards of 75% of the capital cost, so money is going  
21 to have to be spent regardless of the option chosen, 5) when viewed in the current  
22 climate of where the industry is with more advanced AMI solutions and the fact that this  
23 will be a 20-year investment, the risk to move forward with drive-by metering is too  
24 great, and 6) it continues the current system obsolescence challenges without  
25 protecting the investment.

26 **b)** Was Util-Assist Inc. chosen to undertake this study via a competitive bidding and  
27 request for proposals process? Was Util-Assist Inc. chosen to undertake the study by  
28 Hydro owing to its superior proposal based on its independence, qualifications and  
29 price?

1           c) CA-NLH-012i states “Hydro’s most recent Conservation Potential Study assessed the  
2           forecast cost and benefits associated with dynamic rates (i.e., smart meters). This  
3           analysis indicated that broad deployment of smart meters would not be cost effective  
4           until the mid-2030s.” Did this study assess smart meters from the perspective of load  
5           shifting/dynamic rates only, or did it quantify all benefits of smart meters including  
6           those outlined in the Util-Assist Inc. report and CA-NLH-012d?

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8  
9    A.    a) Newfoundland and Labrador Hydro (“Hydro”) proceeded with drive-by automatic meter  
10       reading (“AMR”) on the basis that it was the least-cost alternative, consistent with Hydro’s  
11       statutory mandate. While Hydro considered the findings of the Util-Assist Inc. report, this  
12       report is only one piece of information on which Hydro based its decision. For example, the  
13       report did not consider Hydro’s statutory obligation for least-cost service as required under  
14       section 3(b)(iii) of the *Electrical Power Control Act, 1994*.<sup>1</sup>

15       This decision to proceed with drive-by AMR was supported by both Hydro’s own alternative  
16       analysis presented in its 2022 Capital Budget Application and the findings of the referenced  
17       report, both of which determined this was the least-cost alternative for customers.

18       b) Util-Assist Inc. was selected following evaluation of proposals received through a request for  
19       proposal (“RFP”) process, in accordance with the *Public Procurement Act*.<sup>2</sup> Hydro received  
20       submissions from five firms which were evaluated for how they met certain criteria  
21       including compliance with the RFP, experience in similar work, experience of the project  
22       team, and the proposed costs associated with their service. Util-Assist Inc. was chosen based  
23       on the outcome of that evaluation.

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<sup>1</sup> *Electrical Power Control Act, 1994*, SNL 1994 c E-5.1, s 3(b)(iii).

<sup>2</sup> *Public Procurement Act*, SNL 2016, c P-41.001.

- 1           c) The most recent Conservation Potential Study<sup>3</sup> examined the cost effectiveness of smart  
2           metering for demand management benefits only.

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<sup>3</sup> "Application for Approvals Required to Execute Programming Identified in the Electrification, Conservation and Demand Management Plan 2021–2025," Newfoundland and Labrador Hydro, rev. July 8, 2021 (originally filed June 16, 2021), sch. 3, sch. C.