Q. **Reference: Application, Capital Programs and Projects, Upgrade PLX Metering System (2026–2028) – Labrador East**

It is stated (page 2) *"Hydro's 2019 Conservation and Demand Management Potential Study found that Automated Metering Infrastructure ("AMI") would serve to increase system peak on the Labrador Interconnected System and therefore drive-by AMR system costs continue to meet Hydro's obligation for least cost, environmentally responsible, and reliable service to customers."*

a) Is 2019 the most recent study undertaken on AMI (smart meters) in the province? If not, please summarize the conclusions and recommendations, and file copies of the more recent studies undertaken on AMI.

b) How would AMI "*increase system peak on the Labrador Interconnected System*"? Did the 2019 study determine that AMI would increase system peak, or that dynamic rates would increase system peak? Why might Hydro, or any utility for that matter, design rates that increase system peaks?

c) Please identify all utilities in Canada and the United States that are currently changing out metering technology with AMR technology.

d) Please identify the unique characteristics of the NL power sector relative to other Canadian jurisdictions that make AMR metering technology more desirable than AMI technology.

e) Please explain how 8 of the other 9 Canadian provinces erred in choosing to implement AMI technology over AMR technology.

f) Please provide a table identifying all benefits of AMI relative to AMR and compare it to the benefits identified and quantified in the 2019 Conservation and Demand Management Potential Study.

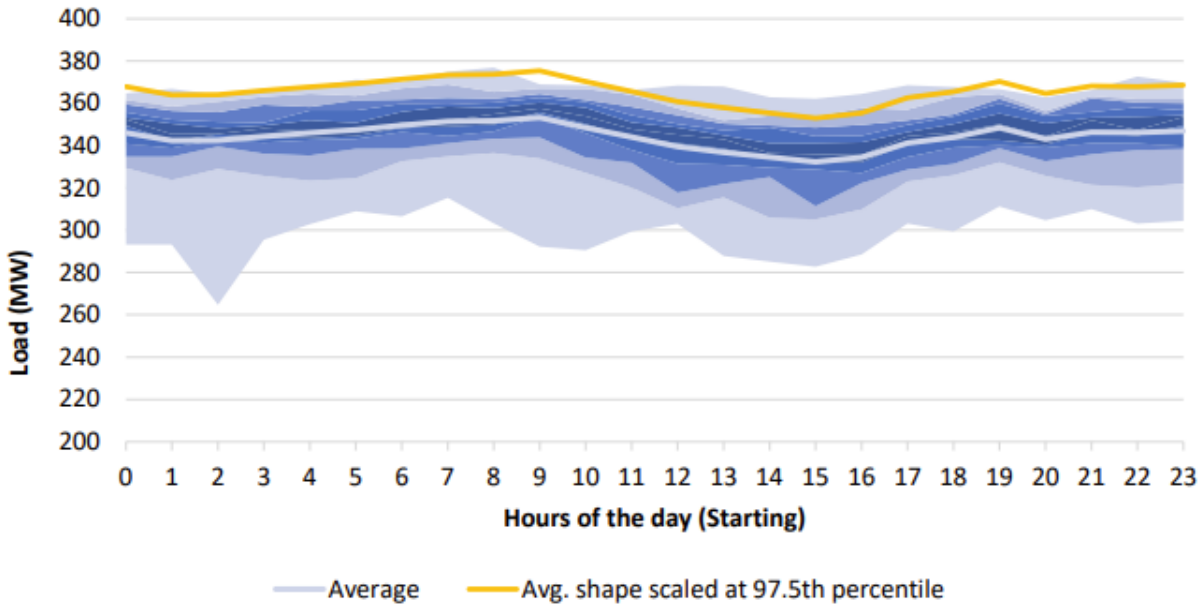
g) Did Hydro's consultant, Util-Assist, recommend AMR technology over AMI technology?

h) When does Hydro believe that AMR metering will become obsolete?

A. The referenced study is the most recent with respect to the Automated Metering Infrastructure's ("AMI") potential impact on the Labrador Interconnected System.

AMI would cost significantly more to implement when compared to Automated Meter Reading ("AMR"). In order to justify this additional investment from ratepayers, there would need to be a corresponding level of benefit for customers. The primary opportunity presented by AMI is dynamic rates, where customers are given a financial incentive to shift their electricity consumption (either Time of Use rates or Critical Peak Pricing). This creates system risks with respect to how customers respond to these price signals, also referred to as pre-charge (increased consumption before peak pricing) and bounce back (increased consumption after peak pricing) effects. These effects must be considered in the context of each system's load shape – simply following what another utility has done in another jurisdiction without considering local factors would, in Newfoundland Labrador Hydro's (Hydro") view, be imprudent.

For example, a higher rate during evening peak (5:00 p.m. to 8:00 p.m.) would give customers a price signal to shift some of that electricity consumption into the hours before and after this time window. The following graph of the Labrador Interconnected System's load shape was provided in the referenced study:



As noted by Dunsky:

> *The results show that LAB system nearly as a perfectly flat load shape. This would be expected to greatly limit measures with bounce-back or pre-charge effects as they risk creating new peaks by shifting load from one hour to another.*

Put simply, an investment in AMI for dynamic rates on the Labrador Interconnected System would be more costly than Hydro's proposal **and** risk creating a new system peak that is less efficient than the current "nearly perfectly flat" load shape.

Hydro has not completed an exhaustive review of the jurisdictions within Canada and the United States that have implemented or are implementing various metering technologies. Typically, when utilities adopt AMI and dynamic rates it is in the context of a less efficient load shape, where the peak shaving benefits associated with dynamic rates could be absorbed by 'valleys' before or after system peak. Hydro's conclusions and recommendations are based on the specifics of the Labrador Interconnected System. At this time, AMR represents the least-cost alternative for the Labrador Interconnected System.