Q. What are Hydro's best estimates of the impacts of Covid-19, rate mitigation and government intervention (i.e., heat pump incentives) on the load forecast? Has Hydro altered its load forecast uncertainty curve to incorporate these events and if so, how has the load forecast uncertainty curve been altered?

A. Please refer to Newfoundland and Labrador Hydro's ("Hydro") response to PUB-NLH-127 with respect to the impacts of COVID-19 on the load forecast.

The 2018 Reliability and Resource Adequacy ("RRA") Study presented four load forecasts scenarios for the Island Interconnected System with three different rate possibilities. Please refer to Hydro's response to PUB-NLH-123[1] to view the variation in forecast resultant from use of differing electricity rate.

Government interventions (i.e. heat pump incentives, electric vehicle charging network and building electrification) will have varying degrees of impact on the load forecast. Hydro's current long-term planning model construct for projecting energy efficiency savings (i.e. heat pumps) relies on linear regression model estimated efficiency gains measured within the historical load data which is then extrapolated to the forecast period. The amount of efficiency savings projected in future periods is adjusted based on the load forecaster's judgement. Hydro has made allowances for the conservation impacts from increased heat pump installations to reflect lower peak demand savings than energy savings. Hydro will reassess these allowances when results from an ongoing heat pump study by Newfoundland Power are available.

Hydro incorporated the loads associated with building electrification plans[2] by government and a modest uptake of electric vehicles into the long term planning forecast.[3] These forecast

[1] Cases I, II, and III in the 2018 RRA Study are all representative of a single baseline provincial economic forecast with varying electricity price forecasts.
[2] Excludes any potential peak demand impact associated with the potential conversion of boiler loads at Memorial University.
[3] Hydro's long term planning forecast reflects electric vehicle load based on studies of potential adoption curves for other Canadian jurisdictions and pre-dates the release of the Dunsky CDM Potential Study. Subsequent iterations of the long term planning forecast reflect electric vehicle sales based on the Dunsky CDM Potential Study.

impacts resulted in an approximate 0.5% increase to the customer demand forecast, over the study period. Hydro continues to assess electric vehicle adoption in the province and the potential impacts they could have on system requirements in the context of investments in supporting infrastructure and Conservation and Demand Management program offerings. While some of the factors noted in the question may necessitate modifications to the load forecast uncertainty parameter, the supporting analysis would require availability of actual demand data. Given the recent nature of the potential impacts in question (i.e. heat pumps) there is not currently sufficient information to determine if a change to the load forecast uncertainty parameter is required.[4] The requirements for such changes in future would be assessed as part of Hydro's comprehensive analysis, proposed to occur every three years.

Further, given that the demand requirements used in Hydro's analysis result from the multiplication of the load forecast in an hour with the load forecast uncertainty parameter, any changes in the load forecast will materialize in the load values used in Hydro's analysis without having to modify the load forecast uncertainty parameter. As such, to the degree the impacts of events like COVID-19 or changes in forecast system requirements due to heat pump adoption result in differences in Hydro's base or sensitivity load forecasts, the implications of such events and technologies will be considered in Hydro's analysis.

[4]The load forecast uncertainty parameter incorporates probabilistic modelling of weather variability into the reliability model. The resultant variance in the load forecast, which occurs from using a load forecast uncertainty parameter, results from the multiplication of the load forecast in an hour with that uncertainty parameter. As such, changes in the load forecast will materialize in the load values used in analysis without having to modify the load forecast uncertainty parameter.