Undertaking # 3 at Page 149, line 8-16

Referring to consolidated IR responses, pdf page 197, to advise whether the projected GHG Emission Value of 606,736 tons was assuming only a subset of generation sources, or was it limited in any way to certain facilities at the Whitehorse facility or did it look at all of the sources available on the grid.

Yukon Energy Response:

The Golder report (YUB-YEC-1-22(b) Attachment 1) GHG projections took into account all generation sources on the Yukon Integrated System (YIS), and were not limited to certain facilities at the Whitehorse facility.

As quoted on page 8 of 23, the Golder report methodology used was as follows:

> "The YEC Power Generation Forecast, which was used for both the Baseline and Project cases, reflect the results of YEC modelling annual generation forecasts that utilizes the use of hydro, wind, LNG and diesel in that order of priority without and with the BESS respectively."

YEC's power generation forecast used in the Golder report considered all generation sources on the YIS, and included a new wind farm assumed to be commissioned in mid-2023.

Similar to the BESS analysis in the Hatch report and the Application, the earlier Golder methodology did not look at specific charging sources but annual displacement of thermal for calculating GHG emissions with and without BESS. Similarly, the GHG emissions would vary depending on the actual thermal displaced in any given year, depending on water availability, system constraints, etc. The sources the battery is charged with can change the net thermal displacement.

The Golder report estimates GHG emissions reduction of 20,123 tonnes due the BESS over its 20 year life and the Project construction (assumed 2019 to mid-2023).

It is noted that the Golder report assumes only 1.6 GWh of annual thermal reduction with an 8 MW battery of which 4 MW is used for peak shifting and 4 MW used to reduce spinning reserve. The Golder report used a very conservative estimate on the thermal savings and therefore has a conservative GHG savings estimate. The report was done in 2019 before YEC studied the BESS thermal benefits.

The Hatch Report assumed a larger annual operating reserve use thermal benefit from BESS of 1.8 GWh of diesel, and 17 GWh of LNG for a total of 18.8 GWh. The Application assumes 1/3 of this, resulting in a thermal reduction due to BESS operating reserve use of 6.3 GWh per year.

Given the updated thermal offset calculated in the Hatch report it is currently expected the GHG savings of the Project will exceed that shown in the Golder report.