

1 Q. **2017 General Rate Application - Operations**

2 Page 3.20, lines 5-9 – Explain the changes to the model used to estimate average
3 annual hydraulic energy production for 2018 TY and 2019 TY from the model used
4 for the 2015 TY.

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7 A. In the last year, Hydro has revised its Vista model to represent the changing
8 Newfoundland and Labrador electricity system. The revised model of the Island
9 Interconnected System was used to estimate the usage of various energy sources to
10 meet the island system load. The main changes to the model were:

- 11 • Improving the representation of the transmission system (on the Island and
12 in Labrador) and using dynamic equations on the transmission lines to
13 estimate losses as a function of the flow of energy;
- 14 • Adding both the Labrador-Island Link (LIL) and the Maritime Link (ML) to the
15 model. The capacity of the LIL is adjusted periodically through the
16 simulation period in accordance with its transfer capacity; and
- 17 • Adding a simplified representation of the energy available from Labrador
18 once the interconnections are commissioned. The full Churchill River
19 system was not modelled, but energy sources were defined to represent the
20 available Recapture Energy from Churchill Falls and pre-commissioning
21 energy from Muskrat Falls once those units come online. Modelling of the
22 Recapture Energy required modelling the load in Labrador to determine the
23 excess Recapture Energy available to the Island, and modelling potential
24 imports and exports through Québec. For this simulation, no imports or
25 exports were modelled over the Maritime Link.

- 1 Hatch is continually improving the Vista software and the newest available version
- 2 was used for the 2017 GRA analysis.