

1 Q. **Re: RRAS (2018), Vol. I, Attachment 1 (Daymark), page 13 of 14 (91 pdf)**

2 Citation:

3 The Expansion Model

4 The expansion model is the deterministic model with similar topology, load, resource, and
5 transmission. The focus of the expansion model is to develop a long-term expansion plan to
6 minimize the net present value (NPV) of the capital and operation cost, taking consideration of
7 market opportunities, as well as the contract obligation to Nova Scotia, subject to reliability
8 requirements and operating reserve requirements.

9 Detailed cost information like heat rate, fuel cost, variable operation and maintenance cost are
10 implemented to the resources. Resource candidates included conventional hydro, CCGT, and CT.
11 Renewable resources like wind and solar resources are also made available.

12 2-hour battery energy system is implemented as resource candidate and could be made
13 available using a scenario.

14 The expansion plan model is set up to develop a least cost plan over 10 years with infinite end-
15 effect.

16 The MIP convergence criteria is set to very small 0.01% to ensure least cost solution.

17 The model also includes several load scenarios to access the robustness of the resource plan.
18 (underlining added)

19 a) Did any of the load scenarios used by Daymark include additional cryptocurrency loads in
20 Labrador? If not, why not?

21 b) Does the expansion model distinguish in any way between costs incurred to meet the needs
22 of the IIS vs. the LIS? If not, please explain how this approach is consistent with the decision
23 in P.U. 37(2019) that the Labrador Interconnected System and Island Interconnected System
24 shall continue to be treated as separate systems for Cost of Service purposes.

- 1 A. a) The source referred to in the citation at page 13 of 14 of Volume I, Attachment I refers to
2 external validation by WH Energy Solutions not Daymark Energy Advisors. WH Energy
3 Solutions was engaged to perform a comprehensive review and validation of Newfoundland
4 and Labrador Hydro's ("Hydro") implementation of the Plexos model. As such, this review
5 did not include qualitative analysis of the inputs to the load forecast.
- 6 b) The expansion model does not distinguish between costs incurred to meet the needs of the
7 Island Interconnected System or the Labrador Interconnected System, but rather optimizes
8 the Newfoundland and Labrador Interconnected System to result in the lowest overall total
9 system cost which satisfies the proposed planning criteria. Please refer to Hydro's response
10 to LAB-NLH-006 for additional information with respect to treatment for Cost of Services
11 purposes.