

At page 807, lines 6-9, Mr. Godsoe took an undertaking from Commissioner Milbourne where he stated:

MR. GODSOE: Understood. I just -- we do have a long portfolio modeling exercise, and I want to check that again, to see if that addresses what you're asking.

Previously at page 804 lines 4 to 13 and at page 806 lines 8 to 9, Commissioner Milbourne had made the following comments that assist in framing the question:

COMMISSIONER MILBOURNE: ... But given, to me, that there is a defined set of conditions as to what self-sufficiency is in terms of average water and so on and so forth, we've heard some discussion here that if you put all these things in place that are necessary to meet that criteria, it will result in the opportunity under most conditions for exports of electricity, of energy. There will be some indications that there might be an economic penalty associated with those exports vis-à-vis the cost of supply.

COMMISSIONER MILBOURNE: Under -- from 2016 to when you -- and also when you've got the 3,000 GW --.

Response:

The portfolio analysis in the 2008 LTAP starts from the assumption that self sufficiency as set out in SD10 is a legal requirement. All portfolios have been developed based on meeting certain minimum requirements, including self sufficiency. All present value results of the portfolios set out in the 2008 LTAP will reflect the net system costs that would be required to meet the minimum requirements.

As a result there is no comparison of the portfolios that meets self sufficiency (as set out in Chapter 5) with portfolios that do not meet self sufficiency.

Once BC Hydro is self sufficient (in or before 2016), there are two decisions that BC Hydro faces: (1) what to do with any energy that is surplus to its domestic energy needs; and (2) when to exceed by 3,000 GWh BC Hydro's energy supply requirements.

With respect to the former, there is analysis in section 5.9.4 of the 2008 LTAP titled "Long Portfolio Impacts / Exposure to External Markets"; and with respect to the latter, analysis is provided in a response to an information request. Each of these types of analysis is set out in the 2008 LTAP exhibits.

#### 1. Long Portfolio Impacts / Exposure to External Markets

A long portfolio impact analysis is set out in Section 5.9.4 of the Application (Exhibit B1). A portion of the analysis is updated in Exhibit B3, the response to BCUC IR 1.113.2; and the analysis is referenced in the responses to BCUC IR 1.113.1, 1.114.1, 1.114.2, BCSEA 1.24.1, and Plutonic Power Corp 1.6.1).

BC Hydro will have electricity surplus to its domestic needs once it is self sufficient. The long portfolio impact analysis incorporated the impacts in the period 2016 through 2027 of being self sufficient and having non-firm energy that needs to be sold into the market. Being surplus can be as a result of being “long” in firm supply (positive planning load/resource gap) or from operational impacts of non-firm energy supply variability.

The long portfolio analysis builds from the Base 11 Portfolio analysis. The attributes of the Base 11 Portfolios, including the PV of the portfolios, were originally presented in section 5.3.6, and are updated in the response to BCUC IR 1.94.1. The long portfolio analysis sets out:

- The range in annual net export under average hydrologic conditions for each portfolio/scenario combination;
- The market prices and underlying market heat rate for each scenario;
- An estimate of the energy surpluses that would exist across the range of Heritage hydrological conditions (BC Hydro secondary energy and IPP non-firm energy);
- The correlation of market prices to the relative amount of secondary energy in BC Hydro’s system; and
- The impact of transmission constraints.

The analytical result is Figure 5-20 that identifies the expected cost and revenue from non-firm energy across the range of market prices analyzed and amounts of non-firm energy that BC Hydro could expect to have when its system is Self-Sufficient.

## 2. 3,000 GWh/year insurance

There are a range of actions and outcomes that could result in BC Hydro having a surplus of 3,000 GWh/year starting in 2020. To provide an indication of potential costs, BC Hydro took the Base Resource Plan (BRP) portfolio as shown in Tables 6-14 and 6-15 of Exhibit B-1, where the 3,000 GWh/year insurance was shown to be achieved by F2026, and advanced the underlying assumed resources to F2020. BC Hydro estimated the incremental rate impacts that may occur based upon this change overlaid on the assumptions made in the LTRIF. This analysis was provided in the response to BCUC IR 2.175.2 (Exhibit B-4).

The 3,000 GWh/year insurance was discussed in the responses to BCUC IR 1.143.1 (Exhibit B3), BCUC IR 2.187.2 (Exhibit B4), and NaiKun 3.1.0 (e) and (h).