Q. Hydro submitted a report "Generation Planning Issues 2009 Mid Year" dated July 2009-in its 2010 Capital Budget submitted to the Board which had two load forecasts, one for the Isolated Island option and one for the Muskrat Falls-HVdc Link Project. The load growth profiles are sufficiently different that it is possible there will be distinctly different rate forecasts. Please explain the causes of these variations between the two load forecasts, for each stage where the Muskrat Falls-Labrador-Island Link Project forecast line changes direction relative to the Isolated Island option. Since the load forecast is for only 10 years, please describe the expected pattern of each forecast curve in absolute terms and relative to each other for the remainder of the 50 year CPW period.

A. The 2009 Load Forecast[1] is presented below:

Figure 5-1
Island Interconnected System Capability vs. Load Forecast

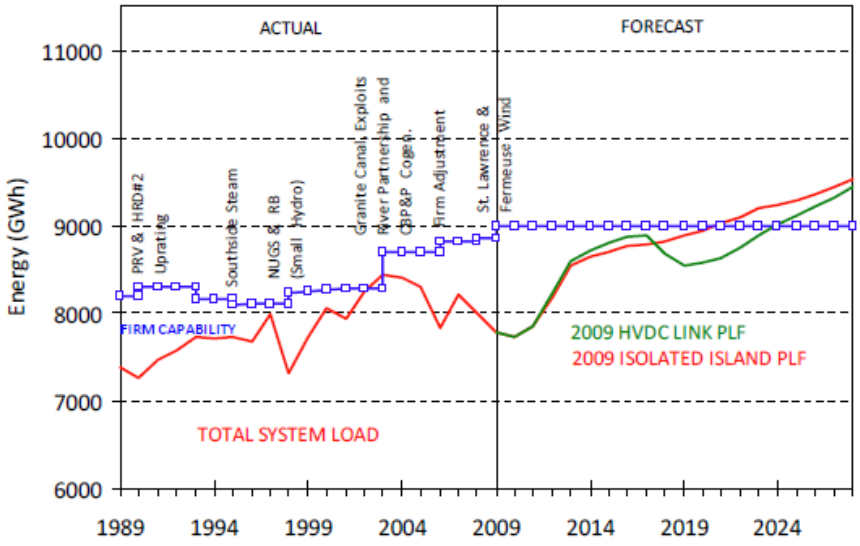

Figure 1 - 2009 Planning Load Forecast

[1] NLH 2010 Capital Budget Application, Volume 2, page 529
http://www.pub.nl.ca/applications/NLH2010Capital/files/application/NLH2010ApplicationComplete-VolumeII.pdf

Two differences in the forecasts presented in Figure 1 are apparent:

1) After 2017, the HVDC Link Case forecasted energy requirement is lower than that of the Isolated Island Case. Table 1 below presents the forecasted energy from the 2009 forecast.[2]

Year	HVDC Link Case	Isolated Island Case
	Firm Energy (GWh)	Firm Energy (GWh)
2015	8798	8691
2016	8871	8772
2017	8881	8784
2018	8682	8824
2019	8534	8887
2020	8579	8936
2021	8636	9027
2022	8757	9100
2023	8883	9199
2024	9005	9233
2025	9113	9290
2026	9211	9362
2027	9326	9444
2028	9445	9525

Table 1 - 2009 PLF Energy Forecast

[2] Table A-1, NLH 2010 Capital Budget Application, Volume 2, page 529
http://www.pub.nl.ca/applications/NLH2010Capital/files/application/NLH2010ApplicationComplete-VolumeII.pdf

The average difference across the period from 2018 to 2028 between the HVdc Link Case and the Isolated Island Case is 241 GWh. This forecasted difference is the result of the differing cost of energy in the two cases. Although the HVDC Link Case had a lower CPW than the Isolated Island Case, in the short term, the rates for the HVDC Link Case were initially higher than those under the Isolated Island Case. This rate differential resulted in a period of lower energy requirement.

2) After 2021, however, the year over year increases in energy requirements in the HVDC Link Case are greater than those in the Isolated Island Case:

Year	HVDC Link Case	Isolated Island Case
	Y/Y Increase (GWh)	Y/Y Increase (GWh)
2022	121	73
2023	126	99
2024	122	34
2025	108	57
2026	98	72
2027	115	82
2028	119	81

Table 2 - Year over Year Increase in Energy Requirements

By the end of 2028, forecasted loads for both cases are within 1 percent of each other. At this point, the short term reduction in energy requirements in the HVDC Link Case will have been almost offset by increased consumption resulting from lower medium term rates.

In the medium to long term, the following differences in interconnected and isolated forecasts would be expected:

a) The interconnected forecast would be expected to initially trend higher than the isolated forecast depending on the rate at which conversions to electric space heating occur relative to the provision already included in the isolated forecast. With rates in an interconnected scenario forecasted to be lower than those under an isolated scenario, conversions to electric heat would be expected to occur earlier than would be projected under an isolated scenario.

The target saturation for electric heat is expected to be 80% - consistent with results seen in the Quebec market[3]. In the longer term, an interconnected load forecast is not expected to be materially different than an isolated load forecast with respect to the impact of conversions since an isolated load forecast would also reflect market saturation for electric heat in the long run.

b) In the longer term, lower electricity rates in an interconnected scenario would encourage an increase in consumption that would not occur in the higher rate regime in an isolated scenario.

The long term effects described in a) and b) are uncertain in the sense that they could be offset by factors such as conservation, which would reduce demand. This issue will be revisited as part of the DG3 analysis.

[3] As per the market share for electric heat in the Province of Quebec where electricity has been the primary choice for space heating for many decades and where natural gas plays an insignificant role in residential heating markets with a 3.6% market share in 2009. Source: Statistics Canada - Survey of Household Spending 2009.