

FACT SHEET: ELECTRICITY SELF SUFFICIENCY

With one minor exception, BC Hydro has planned its electrical system on the basis of self sufficiency since its inception. The reason is simple – almost all of its generating facilities are hydroelectric and subject to weather-related variations in reservoir inflows. BC Hydro cannot depend on cost-competitive imports and purchases on the spot market, but must have firm sources of supply that it either owns, controls or has long term contracts for.

“By way of example, BC Hydro experienced a significant short term energy shortfall, of about 2,300 GWh, during the period January through April 2008, driven by ice constraints on the Peace generation, an Arrow flood control limit restricting Mica and Revelstoke generation, and unplanned unit outages. At the same time, spot market prices increased throughout the period, driven by a colder than normal winter, a run-up in oil and gas prices, and a very late onset of the freshet At the same time, IPP purchases were being delivered to BC Hydro at prices well below the spot market prices.” – Exhibit B-68, BC Hydro F09/F10 Revenue Requirements Application.

The importance of energy self sufficiency was more graphically illustrated in 2000-2001 when a combination of increased demand, higher natural gas prices, colder and drier weather conditions and market manipulations created the California energy crisis. California was forced to purchase electricity on the spot market at astronomical prices – an average of (Cdn) \$539.10 per megawatt hour (MWh) over the one year period starting May 1, 2001 with the price spiking to (Cdn) \$985.29/MWh in August of that year.

BC Hydro acknowledged the cost implications in its 2006 Integrated Electricity Plan and also noted other important considerations in stating: “. . . any comparison of highly volatile spot market prices and stable long term contract prices must take into consideration the fact that the corresponding energy products are different. Market energy is non-firm, from sources that include coal-fired, nuclear, gas-fired, hydro and wind, and is from external sources, whereas long term contract purchases are for firm physical delivery within province from gas-fired or clean and renewable sources only”

Historically, BC Hydro has produced an Energy Demand-Supply Outlook as part of its Integrated Energy Plan. It has stated the importance of being able to determine the capability of its system to provide firm energy during critical water conditions, using stream flow conditions from October 1940 to April 1946 as the standard for “critical.” Then, in a

2000 update to the IEP, Hydro for the first time made provision for “Secondary Market Purchases” but with no certainty about the source, availability of transmission interconnection or the price to be paid. This policy had been discarded by the time the 2006 IEP stated: *“It is our goal that B.C. is energy self-sufficient so that we have enough power right here in the province to meet our own needs, with enough insurance to respond to changes in opportunities.”*

Reaching the self-sufficiency goal – mandated by B.C.’s new Clean Energy Act to be achieved by 2016 – will not be an easy task. Nor will the Act’s requirement for 3,000 gigawatt hours (GWh) of “insurance” electricity by 2020. While BC Hydro has initiated a suite of conservation programs such as Power Smart, electrical energy use would have to be reduced by an amount equal to about 70% of projected new energy load in order to reach self sufficiency. Meantime, electrical demand from B.C.’s mining industry and oil and gas industry is expected to increase dramatically, especially if liquid natural gas facilities are built here.

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