

Nova Scotia: Interlocking systems

In the article [Newfoundland and Labrador energy](#) it was observed that the proposed 500 MW power link to Nova Scotia could be supported even before making the connection to the Muskrat Falls power source in Labrador (and to the follow-on Gull Island source). For many years Nova Scotia has depended on coal for its power generation and furnace oil for space heating (there are no major natural gas networks). The power link from Newfoundland would deliver 15.8 PJ of electricity to Nova Scotia which is approximately what is needed to provide the 15.0 PJ residential part of the power demand. Once the first link is established it becomes much easier to replicate such links so there will be ample capacity available to provide for future growth.

However, the energy demand for space heating and water heating at 29.4 PJ is almost twice as great as the demand for electricity. Furnace oil is expensive and it produces a lot of GHG and pollution. If exergy storage replaces the furnace oil the cost of heating homes in Nova Scotia will drop dramatically, the GHG emissions will trend to zero and the exergy storage capacity would make it possible to level the electricity loads. Instead of just providing a peak capacity of 500 MW the Newfoundland link could continuously provide that amount of power, making the link much more cost effective. Both the consumers and the energy suppliers thus benefit from such a strategy, and the elimination of GHG emissions will benefit everyone.

Once the link is made to Nova Scotia and the supply begins to grow some of the power could be shared with New Brunswick. New Brunswick has considerable power resources of its own. Given a stable power baseload and the capacity to store electricity that is provided by exergy systems New Brunswick would be in a position to accept large amounts of intermittent power from PEI, going beyond the net zero approach described in the [article on PEI](#).

Storage also makes it possible for Quebec to increase its electricity generation by utilizing its considerable wind potential, and by switching to the use of exergy storage systems for heating Quebec homes (68% of which are heated electrically) that province could both export more power and enjoy cheaper space heating. That leaves New Brunswick surrounded by new sources of power. An abundance of power leads to reasonable prices so the Maritimes, Newfoundland and Quebec could all have clean, inexpensive energy for decades to come.

As noted in the article [Prairie Power](#), Alberta and Saskatchewan could also utilize exergy storage to provide most of the energy they need. The remaining provinces, Ontario, Manitoba and British Columbia already generate the power they need from Hydro or nuclear stations. That potentially leaves all of Canada in a very competitive economic position thanks to having cheap, clean energy, a nearby mass market, and ample materials resources, providing our politicians do not succumb to the temptation to sell most of the power to the US for a fast buck. The politicians also need to learn to work together because energy, like most worthwhile activities requires an interlocking, coordinated approach.