

Natural Resources

Whither Hydro-Québec?

By Robert McCullough



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(March 31, 2022, 12:38 PM EDT) -- High above René Lévesque Boulevard in Montreal looms the redoubt of Hydro-Québec — long one of the most secretive utilities in North America. While resource plans at other utilities in Canada and the U.S. can run to thousands of pages — including detailed studies of markets, technologies, loads and transmission — Hydro-Québec's periodic Strategic Plans have slowly but surely shrunk to a minimalist report announcing their existence, their profound popularity and their contribution to the Quebec economy.

In March, the tiniest glimmer of information was released from *la forteresse d'Hydro-Québec*. Having spent almost 40 years watching Hydro-Québec for First Nations, industrials and other utilities, I am unsure how to interpret this tiny opening towards the outside world.

While Hydro-Québec has always held its own counsel, since the dawn of the new millennium, it has gradually closed its drawbridges and shuttered its windows. Older strategic plans actually discussed specific projects and costs. Today, the only place to find these discussions are in the files of the National Energy Board or its U.S. equivalent, the Federal Energy Regulatory Commission (FERC). Streamflows — a very common set of data throughout North America — have dried up since 2000 — the data, not the streams. Looking down at Canada from the orbital view of Hydatt — the national hydrological database — shows a blank for most of Quebec.

Hydro-Québec's energy transactions are highly classified north of the Maine border, but freely available from the U.S. regulators where almost all transactions are open to the public. (FERC publishes almost all U.S. electricity transactions in a database called the Electric Quarterly Report. Since much of the Canadian industry is integrated north to south, this includes many of Hydro-Québec's most secretive transactions.)

This has changed a bit in March. Current hydrological data for Quebec has suddenly reappeared. To be clear, not all the data is available and not all in the standard formats, but some, and for regions where streamflows had been secret for 20 years. And in a step that is even more dramatic, Hydro-Québec has announced publicly something everyone already knew from reports only available in the U.S. Hydro-Québec will run out of energy in 2027 and capacity in the winter of 2026/2027.

Even more momentous, the following page admits that Hydro-Québec's long-term cost of new energy and capacity is \$110 per megawatt hour. This makes Hydro-Québec's future costs for power one of the most expensive in North America. Most utilities are planning to add low-cost renewables with natural gas or battery backups at less than half the cost.

So, what is the *forteresse d'électricité* actually planning to do? Traditionally attempting to figure out their intentions from their published documents is a bit like working on a jigsaw puzzle with quite a few missing pieces. Let's peek over the battlements and see.

First of all, Hydro-Québec has experienced the same delays and budget overruns with La Romaine 4 as other utilities in Canada have with Site C (British Columbia), Keeyask (Manitoba), and Muskrat Falls (Newfoundland). This is not surprising. Hydroelectric development starts with "low hanging fruit" — projects that are easy to dam and pose few geophysical challenges. As time passes, the best projects are developed. The remaining projects are more challenging, take longer and are more

expensive. La Romaine 4 is going to cost more than the prices in the U.S. market. The next hydro project on Hydro-Québec's list — the highly secret Petit Mécatina — will be even more expensive.

Hydro-Québec's best resource options are roughly the same as everyone else's. First, they can repower older, less efficient, hydroelectric projects. This is a standard practice in the industry, but not one generally pursued in Quebec. Repowering is inexpensive and has little or no environmental issues. The repowering of units along the Columbia River in the U.S. and Canada has been taking place for years and has been highly successful. Hydro-Québec is estimating adding 2,000 megawatt hours with repowering.

Alternatively, Hydro-Québec can continue to pursue wind. Wind is not a popular option in many Canadian provinces. On the west coast, the international border between the U.S. and Canada also defines the point at which wind stops working — at least according to analysts north of the border. Quebec has a large wind sector and plans to expand wind by 3,000 megawatt hours in years to come.

What about exports and international expansion? These are downplayed in the new strategic plan which is not surprising given setbacks in both areas. Hydro-Québec's current exports are blocked in Maine by a voter referendum and may face substantial opposition in New York.

In sum, the most recent Strategic Plan, although sketchy by industry standards, appears to denote a glasnost moment for the forteresse d'électricité. Will Hydro-Québec join the rest of the continent? I think the evidence is that it just might do so.

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