

(VIDEO #2-B):
How Do Churchill Falls and the Proposed Projects Fit Into Meeting Quebec's Electricity Needs

Doug May

Where does the existing CF plant fit in?

- It has a smaller rated capacity than RB (Robert Bourassa): 5,428 MWh vs 5,616 MWh, but likely generates more electricity over the year, especially now with the drought around James Bay. In 2024, it generated about **30** TWh of electricity.
- If we assume that 90% (**31** TWh) of CF's electricity goes to Quebec, then CF would be the most productive source of electricity for HQ.
- CF is older, and more of the capital costs may have been written off. The Average Accounting Costs for 2024 in the Chart on Slide 14 are calculated to be $2.95 per MWh or .295¢ per kWh. Some sources suggest that the AAC of RB electricity could be 5-7¢ per kWh, which seems high.

- HQ owns 34.2% of CFLC0 and probably considers it part of its Quebec operations.
- The Labrador boundary dispute of 1927 figures into the role played by the Churchill River basin in official Quebec's perceptions.
- CF is an integral part of Quebec's hydro-generated electricity and therefore helps to explain why HQ's household prices are the lowest in Canada and the G7.
- The low prices are also an integral part of Quebec's industrial strategy.
- Climate change has brought a drought to the eastern areas of Quebec in the James Bay river basin, resulting in lower electricity output. The result is the increasing importance of the Churchill River projects to provide low-cost electricity to Quebec.

Summary: How Does CF Explain Why the Residential Electricity Prices to Households in Montreal are so Low?

- The CF generating station is the **most productive** generating station in the HQ system, as Quebec would see it.
  - Most power..about **17%** of the total electricity available to Quebec
  - And at the **lowest cost** available by far.
- Even if the price that HQ pays CFLCo for electricity increases, the **effective price** only increases by 65.8% (NHL's share) because HQ is paying itself.
- The **relative importance** of CF electricity to Quebec is **growing** and will continue to grow as the drought continues and the demand for electricity in Quebec increases.

The Proposed Additional Generating Capacity in the MOU

- A new generating station will be built at Gull Island with an installed capacity of 2,250 MWh.
- A new powerhouse at CF will add 1,100 MWh of electricity.
- An upgrade replacement of the existing turbines, adding 550MWh.
- There will be new transmission lines to connect to the grid.
- We have not been provided with information on the **expected power generation** amount or the **associated prices** for electricity for each project.
- The prices provided for existing power are fixed annual prices. However, HQ is promoting the use of **dynamic pricing**, which varies depending on the time of year the power is generated.
- We have not been given estimates of the annual costs associated with these projects. Capital budgeting or cost-benefit analysis cannot be applied.
- From the Quebec perspective, these projects would provide much-needed cheap power to HQ and, therefore, to its domestic customers.

Economic Analysis

- There is a need for much more microeconomic analysis to model the production and associated cost functions of individual generating stations.
- Proposed infrastructure projects would use such information to carry out capital budgeting and cost-benefit analyses.

The Storyline

- The **previous video** showed that Quebec's ability to generate electricity was declining. The decline was due to climate change, in which drought reduced water levels, affecting the ability of hydraulic turbines to produce electricity. These turbines produce over 90% of the utility production in Quebec.
- To meet the present and increasing demands for electricity, HQ has to import power primarily from other provinces and specifically from Newfoundland and Labrador. In the past couple of years, importing electricity from the USA has markedly increased.

The Story Continues

- In **this video**, we learn that electricity prices to households are the cheapest in Canada and amongst the G7 nations. We also learned that a household in St. John's would pay around 80% more for electricity monthly than a typical Montreal household using the same amount of power.
- Hydro-Quebec is a cost minimizer which passes its cost savings onto households in Quebec. HQ acknowledges that lower prices are possible due to its heavy reliance on low-cost hydro power.
- The Churchill Falls generating station provides a significant amount of the electricity available to Quebec. For historical reasons, this hydro power is available at a very low cost from CFLCo, whose shares are held in common ownership with NLH.

- We argue that access to additional large amounts of waterpower in Quebec does not exist. Potentially, the cheapest source of clean, sustainable and low-cost water power to Quebec is viewed by HQ as coming from new infrastructure projects on the Churchill River. A brief description of these proposed shared-ownership projects is outlined in the MOU.



NEXT VIDEO: Hydro Quebec’s Export/Import Prices