Upper Churchill:

Can we wait until 2041?

Department of Natural Resources

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Newfoundland Labrador

Key Factors

In the debate surrounding the development of Muskrat Falls, it has been suggested that Newfoundland and Labrador has the option of refurbishing the Holyrood Thermal Generating Station and/or taking other stop gap measures until 2041 when the Upper Churchill power contract expires and energy from the Upper Churchill become available for domestic and export use. This option is not realistic for a variety of reasons:

- CFLCo is owned by Newfoundland and Labrador Hydro (NLH) and Hydro-Quebec (HQ) jointly, with NLH owning 65.8% of the common shares and HQ 34.2% of the common shares. In 2041, NLH will not have absolute authority over the corporate actions of CFLCo.
- It is not appropriate to simply assume that Newfoundland and Labrador will receive cheap or free power when the HQ Power Contract expires in 2041. It is entirely possible that the province will be required to purchase power from CFLCo at prevailing applicable market rates.
- It is doubtful that life extension efforts at Holyrood could continue to provide reliable power for an additional 30 plus years. At that time the first two units would be 70 years old.[1]
- Deferring Muskrat Falls will mean increased reliance on oil and volatile prices for electricity as rates will be tied to fuel prices. (Note: See accompanying paper on electricity rates for a description of oil forecasts and other issues pertaining to fuel pricing).
- Deferring Muskrat Falls prevents the province from capitalizing on opportunities through export sales and/or industrial expansion in Labrador.

For these reasons and others described below, it is not feasible to defer Muskrat Falls under the assumption that the province will have plenty of cheap or free power in 2041.

Historical Context

1927 Privy Council Decision

In 1825, the southern boundary between Quebec and Newfoundland was established by an Act of the UK Parliament.[2]

By the 1890s and early 1900s North American industrialists became eager to exploit the resources of the Labrador peninsula. In 1902, one such company, the Grand River Pulp and Lumber Co. of Nova Scotia, was granted a timber concession from the Newfoundland government for both sides of the Hamilton (now the Churchill) River. The Quebec government promptly claimed that part of the concession was in its own territory, and when the Grand River Company replied that it was not trespassing on Quebec but rather operating in Newfoundland lands, Quebec appealed to the Government of Canada to intervene on its behalf.

Canada and Newfoundland eventually agreed to submit their dispute to the highest court in the Commonwealth, the Judicial Committee of the Imperial Privy Council in the UK. The case was heard in 1927 and the court upheld Newfoundland's arguments.[3] The border was established as it is seen today, with the Hamilton (now the Churchill) Falls and River falling within Labrador territory. Significantly, though Quebec bitterly lamented the loss, it did not challenge the decision in 1947 when Canada's draft Terms of Union affirmed the boundary. Furthermore, Quebec did not try to convince the Parliament of Canada to repudiate the boundary in the BNA Act 1949 during the debate of that Act in the Canadian Parliament, nor did Quebec protest to the Westminster Parliament when it passed the final BNA Act 1949, containing the Terms of Union and their reference to the Labrador Boundary.

Finally, Quebec did not formally protest or challenge the boundaries of the province reaffirmed by the 1982 patriated Constitution of Canada (which re-affirmed the Terms of Union and the interprovincial boundary). Thus, when in the 1960s Newfoundland sought a power corridor through Quebec, Quebec's ongoing nationalist sentiment spurred that province's politicians and journalists to describe the situation as the "revenge of geography" and to act accordingly. This, coupled with the refusal of successive federal governments to intervene, not only undermined CFLCo's bargaining position during the original Upper Churchill negotiations, but has also left Newfoundland and Labrador's great hydro resources at Muskrat Falls and Gull Island undeveloped.[4]

Upper Churchill Development

In 1953, the British Newfoundland Company (Brinco) was formed to develop projects including the Upper Churchill hydroelectric development, at that time the largest hydroelectric project. A consortium of international financiers and industrial interests, Brinco issued shares which were traded publicly and the Smallwood administration gave it exclusive rights to develop hydroelectric potential along the Hamilton River. Brinco established a subsidiary called Hamilton Falls Power Corporation, 80% of its shares were held by Brinco, and 20% were held by the Montreal-based Shawinigan Engineering Company. The mandate of the subsidiary was to develop the Upper Churchill. In 1962, the Quebec government of Jean Lesage and his minister of natural resources Rene Levesque launched a nationalization of that province's private hydro companies, including the Shawinigan Engineering Company, which fought the move. Thus the Brinco shares were captured by the Government of Quebec. Lesage called a provincial election that fall, with the nationalist slogan "Maitres Chez Nous" (Masters of our own house) and he was re-elected. The new entity, Hydro Quebec (HQ) was established to manage the assets, including those of Shawinigan Engineering, and HQ became a shareholder of HFPCo and its representatives sat on the board of directors of the subsidiary. In 1965 Smallwood changed the name of the river and falls from Hamilton to Churchill, and the subsidiary became CFLCo. Throughout the 1960s, CFLCo held negotiations with Hydro Quebec, and Premier Lesage attempted to tie a commercial agreement on the Upper Churchill development to a political agreement to change the boundary between Quebec and Labrador. This significantly disrupted and delayed negotiations.

In the fall of 1966 a letter of intent was finalized between CFLCo and HQ. It gave HQ an extremely favourable electricity price for about 90% of Upper Churchill Power over 44 years coupled with price reductions over the term of the contract and additional price reductions if capital costs were lower than expected. Critically, there was no escalator clause or mechanism in the contract to raise prices if market conditions changed.

Upon signing the letter of intent, CFLCo began construction of the Upper Churchill development in order that first power would be available on schedule. Negotiations on a contract to implement the letter of intent proceeded slowly, and with bank loans and other funding nearly exhausted, both CFLCo and Brinco were in financial difficulty. Hydro Quebec was quite aware of this by virtue of its representation on the CFLCo board of directors. It was in this context that a renewal clause of the contract was agreed to. The original agreement expires in 2016, but the renewal clause continued the contract for an additional 25 years and fixed the price of electricity at $2 per megawatt hour.

The Upper Churchill Contract was signed in May 1969 by CFLCo and Hydro Quebec. At the time of signing, Brinco owned 56.9% of CFLCo; HQ owned 34.2%, and the Newfoundland and Labrador Power Commission owned 8.9%. In 1972 a new Newfoundland and Labrador government under Premier Frank Moores was elected and threatened to expropriate Brinco if it did not sell its water rights to the Lower Churchill River as well as its shares in CFLCo. This expropriation went ahead in 1972 with the provincial government paying $160 million and gaining control of 65.8% of CFLCo.

First power from the Upper Churchill was delivered ahead of schedule in 1971, and the project was completed in 1974. The total cost for the project was $950 million and financing has been fully repaid.

Legacy of the Upper Churchill Contract

To illustrate how low the contract price is, in its 2010 annual report, HQ reported receiving $1.034 billion for 12.6 Terrawatt hours (TWh) of electricity exports in that year - approximately $82 per megawatt hour (MWh).[5] By contrast, HQ currently pays only $2.50 per MWh for Upper Churchill power and in 2010 NLH received just $76 million in energy sales from its entire Upper Churchill business segment.[6] As highlighted in Newfoundland and Labrador's 2007 Energy Plan, the Upper Churchill project has generated more than $20 billion dollars in net revenue, but the vast majority of this, over $19 billion, has gone to Quebec with Newfoundland and Labrador receiving approximately $1 billion.[7]

Twin Falls Power Corporation (TwinCo)

A 225 MW power station at Twin Falls on the Unknown River, a tributary of the Churchill River, was also developed by Brinco in partnership with Wabush Mines Limited and the Iron Ore Company of Canada (IOC). TwinCo supplied power during the construction phase of the Upper Churchill development, but in July 1974 the Twin Falls plant was closed and the water was diverted into the Smallwood Reservoir. The Upper Churchill has been able to produce approximately three times more electricity than would have been possible at the Twin Falls plant from the diverted water. A 225 MW "TwinCo block" of power continues to be supplied to TwinCo although this requirement expires on December 31, 2014. Under the current arrangements, the companies pay primarily fixed costs (with some minimal variable costs) regardless of the amount of power taken, and as a result the cost of power to Wabush Mines and IOC averages less than $5 per MWh.

Summary of Principal Legal Documents

A number of principal legal documents (see Annex A for a more comprehensive description) are key to CFLCo's operations:

- **Water Lease between the Government of Newfoundland and CFLCo –** Gives CFLCo the right to waters of the upper Churchill River for 99 years (renewable for a second 99 year term). CFLCo pays the province an annual rental and royalty for the water rights. The Lease confers tax exemptions on CFLCo which expire on August 31, 2016.

- **Power Contract between CFLCo and HQ** – CFLCo is required to make available to HQ approximately 4,100 MWs in the winter and 3,860 MWs in the summer subject to limitations of the 225 MW TwinCo block and 300 MW (Recall Block) which may be withheld by CFLCo. Current price is $2.5/MWh. This price is valid until 2016 when an automatic renewal at $2.0/MWh takes effect.

- **Power Contract between CFLCo and NLH** – All power under the Recall Block is sold to NLH on the same pricing terms as applicable to HQ Power Contract.

- **Guaranteed Winter Availability Contract (GWAC) between CFLCo and HQ –** Intended to provide for maximum availability of all generating units at Churchill Falls during winter months. Provides financial compensation to CFLCo for ensuring that 682 MW of additional capacity is available during the winter. Ends upon termination of HQ Power Contract.

- **Shareholders' Agreement between NLH, HQ, and CFLCo** – An agreement on governance, operating, and financial provisions for the affairs of CFLCo. Includes restrictions on the transfer of shares, composition of the Board of Directors, provisions related to TwinCo, etc. Expires when one of the shareholders no longer holds shares in CFLCo or August 31, 2041.

- **Water Management Agreement between CFLCo and Nalcor Energy –** Provides for the coordination of the use of the waters of the Churchill River in the production of power and energy by CFLCo on the Upper Churchill River and by Nalcor Energy (Nalcor) on the Lower Churchill. This coordination must not adversely impact CFLCo's obligations under the HQ Power Contract, the NLH Power Contract, the GWAC, and TwinCo requirements.

Pre-August 31, 2041

Several of CFLCo's major contracts that expire on August 31, 2041 will largely set the course for the Corporation over the next 30 years. The Power Contract with HQ provides for the sale to HQ of the vast majority of energy produced at the Upper Churchill plant at a price which has declined through the life of the contract thus far and which will be a firm price after 2016. Similarly, the recall energy which CFLCo recalls under the HQ Power Contract will be sold to NLH pursuant to a separate power contract between CFLCo and NLH, which expires August 31, 2041. There is no additional power available prior to the expiry of these contracts in 2041.

The GWAC obligates CFLCo to provide any additional capacity available in the winter months to Hydro-Quebec. In addition, the Shareholders' Agreement limits certain aspects of the CFLCo's operations and provides HQ with certain powers through requirements for its approval, both in its capacity as shareholder and through its nominees on the CFLCo Board.

Notwithstanding the August 31, 2041 expiry of several major contracts, there is a near-term change in the status quo that will likely result in increased revenues for CFLCo. Its obligation to provide 225 MW to Twin Falls Power Corporation Limited expires at the end of 2014. The Shareholders' Agreement stipulates that this power is to then be sold by CFLCo to NLH at a "commercially reasonable" price. If this price is higher than the price at which the TwinCo block of power is presently sold to TwinCo, revenues to CFLCo from the sale of this power will increase.

CFLCo continues to have responsibility for the operation and maintenance of the plant prior to September 1, 2041. It will operate and maintain the plant and pay for the work associated with these activities. The approval of annual budgets requires approval of the CFLCo Board of Directors, who are required to act in the best interests of CFLCo.

Post-August 31, 2041

The expiry of the HQ Power Contract on August 31, 2041 will represent a significant change in the structure of the electricity industry in the Province – as of that date, CFLCo will be in the position to negotiate new contracts for the sale of power from the Upper Churchill. However, on that date neither CFLCo, nor the Upper Churchill facility, nor the power generated by it will "revert" or "return" to the province. Instead, the Upper Churchill will continue to be owned and controlled by CFLCo, a corporation owed 65.8% by NLH and 34.2% by HQ, until such time as the 1961 Water Lease expires. As a result, CFLCo will continue to be responsible for the terms and conditions of the sale of Upper Churchill power.

As a result, post-2041 the Upper Churchill cannot automatically be treated as an asset solely available to satisfy power demands within the province, as if it was going to become part of the power generation inventory owned by NLH. Instead HQ's minority shareholder position (assuming they maintain this position at the time), and the legal rights that it confers, will have to be considered. This will have various consequences, one of which is that CFLCo may not be subject to being operated at the instruction of NLH. Instead, there will be legal, financial and corporate obligations upon CFLCo, including those directors of CFLCo that may be appointed by NLH, as a result of HQ continuing economic interests. These obligations may or may not align with the province's public interest or policy goals at any given time. There is every reason to expect that some Upper Churchill power will be delivered within the province. However, almost 30 years from today, it is impossible to predict what CFLCo's sale arrangements and power price will be for Upper Churchill when the Power Contract expires.

There is little doubt the people of the province will realize significant benefits from the Upper Churchill arrangements post-2041. Whether those benefits will be as ultimate beneficial majority shareholders of CFLCo, or as the customers of relatively inexpensive power, or a combination of both, will be determined by future generations. In 2012, we require certainty that our short, medium and long term power obligations will be met. We do not have that level of certainty with respect to the Upper Churchill in 2041.

Churchill Falls as an alternative to Muskrat Falls

To meet the province's future energy needs, Nalcor considered the option of waiting until 2041, when the power contract between CFLCo and HQ expires, and then accessing Upper Churchill power. This would require maintaining the isolated Island system until that time, followed by the construction of a transmission link with Labrador.

This approach has strategic and financial concerns:

Security of supply and reliability

- Guaranteeing the availability of supply from the Upper Churchill in 2041 is uncertain because it is difficult to determine the legal, environmental and policy frameworks that will be in place 30 years from now;
- NLH is not the sole shareholder of Upper Churchill and therefore may not be able to unilaterally decide how to distribute Upper Churchill power;

- It may not be possible to maintain reliable power supply through continued life extension measures for the Holyrood generating station through to 2041. At that time, the first two units at Holyrood will be 70 years old and well beyond their life expectancy.

Cost to ratepayers

- Deferral of Muskrat Falls will result in significantly higher rates for Island consumers between now and 2041 and will not provide rate stability to Island consumers. As a result of continued dependence on Holyrood, rates would be tied to highly volatile fossil fuel prices. In addition, there will be escalating maintenance costs for Holyrood and an increasing likelihood that the plant will require replacement prior to 2041, contributing to increased rates.

Environmental compliance

- Island customers would remain dependent on fossil fuel generation until 2041, resulting in continued and increasing GHG emissions.

- Given the Government of Canada's decision to introduce GHG emissions regulation for coal fired generating stations, Nalcor's ability to refurbish Holyrood without conforming to GHG emissions regulation is doubtful, and replacement of the plant may be required between now and 2041.

Risk and uncertainty

- Each of the screening criteria above – security of supply and reliability, cost to ratepayers, and environmental compliance – carries significant risk and uncertainty that are not present in either the Isolated Island or Muskrat Falls scenarios.

Conclusion

The power contract between Newfoundland and Labrador and HQ has been the source of great resentment for the people of our province for many decades. This contract has resulted in tremendous profits for HQ, while providing minimal profits to Newfoundland and Labrador.

The power contract expires in 2041, at which time the province will obtain much more control over Upper Churchill power than currently exists, and certainly benefit from the economic returns of that resource. However, Upper Churchill power is not exclusively owned by the province and Newfoundland and Labrador may consequently not have unfettered control over the resource. There will be no free power available to the province and there will be limited rights to recall power after the power contract expires.

Waiting until 2041 is not a viable alternative for several reasons. Maintaining the isolated Island system until that time, followed by the construction of a transmission link with Labrador, is more expensive than developing Muskrat Falls. There is also considerable risk and uncertainty regarding security of supply and reliability, the cost to ratepayers, and environmental compliance. Deferring the project also means deferring the province’s ability to fully capitalize on the value of its tremendous energy resources.

Clearly, the province cannot afford to take only stop-gap measures and wait until 2041 when the Power Contract expires. This date does not necessarily represent an enormous windfall of cheap or free power for the province and, in any case, the needs of customers must be met in the interim. Deferring the Muskrat Falls development represents a more costly approach to supplying power and adds a layer of cost and uncertainty as power for domestic customers will be tied to fossil fuel prices as well as the ability to extend the life of the Holyrood Generating Station to provide reliable power within potential future GHG regulatory guidelines. Waiting for available Upper Churchill power in 2041 is not a practical, economical, or sensible alternative to Muskrat Falls.

ANNEX A - Principal Legal Documents

The following is a listing and summary of the principle documents that facilitate the supply of power from Upper Churchill to Hydro Quebec.

Water Lease between the Government of Newfoundland and CFLCo - May 16, 1961 ("Water Lease")

- This lease gives CFLCo the right to the waters of the catchment area of the Upper Churchill River and the exclusive right to harness the river to produce hydroelectricity. CFLCo is also given the right to do what is necessary in the development, transmission and supply of hydroelectric power produced on the Upper Churchill River, which would include the right to construct dams and acquire Crown Land.
- The term of the Water Lease is 99 years renewable (at CFLCo's option) for another 99 years.
- CFLCo is required to pay to the Province an annual rental and royalty which amounts to approximately $4 million on an annual basis.
- The Water Lease provides CFLCo, as a corporate entity, with an exemption relating to provincially imposed taxes, charges and fees. With respect to the development, transmission and supply of hydroelectric power, CFLCo is exempt from any increase in taxes existing as of July 14, 1966, and is also exempt from any liability with respect to any new or additional taxes and any new or additional charges, dues, fees, rents, etc. imposed by the Provincial Government after July 14, 1966. This exemption expires on August 31, 2016.
- The Water Lease is a statutory lease and therefore has the force and effect of statutory law.

Power Contract between CFLCo and Hydro-Quebec - May 12, 1969 ("Hydro-Quebec Power Contract")

The principal terms of this Power Contract are as follows:

- The original term of the Hydro-Quebec Power Contract expires on August 31, 2016. It will then automatically be renewed for a further term of 25 years until August 31, 2041 ("Renewal Period").

- The price of electricity during the first 40 years of this Contract was set on a downward sliding scale. It provided for five price changes during this period. The present rate ($2.5426 per MWh) will remain in effect until August 31, 2016. During the Renewal Period the rate shall remain constant at a lower rate ($2.00 per MWh).

- CFLCo is to make available to Hydro-Quebec Firm Capacity of approximately 4,100 MW in the winter and 3,860 MW in the summer, as well as whatever additional capacity can, in CFLCo's opinion, be made available when requested by Hydro-Quebec. In addition, CFLCo shall make available such energy from the plant as Hydro-Quebec may request.

- These obligations are subject to two limitations: first, CFLCo's requirement to supply power and energy to Twin Falls Power Corporation Limited (225 megawatts until December 31, 2014 and second, the Power Contract permits CFLCo to withhold up to 300 MWs of power per year from the power and energy agreed to be sold to Hydro-Quebec. This is to be sold by CFLCo only for consumption outside the Province of Quebec. CFLCo presently recaptures the full 300 MW.

- During the Renewal Period (post – 2016) the amount of power and energy that CFLCo will be required to sell to Hydro-Quebec under the Contract will be a set amount of energy per month ("Continuous Energy"). Currently, Hydro-Quebec has a right to all of the energy produced at the plant other than the Twinco block and the Recapture. The amount of the Continuous Energy is set at the end of the original term of the Power Contract and is based on the amount of energy delivered to Hydro – Quebec prior to the expiry of the original term.

- CFLCo is required to maintain in good repair and in accordance with sound utility practice, all required facilities at the Upper Churchill Falls plant.

- If CFLCo should at any time, when it is not prevented by an event of force majeure, be unwilling to operate the Upper Churchill Falls plant, then Hydro-Quebec, if it is not in default under the terms of the Contract, has the right to operate the plant for the account of CFLCo in accordance with sound utility practice, until such time as CFLCo itself resumes such operation.

Power Contract between CFLCo and Newfoundland and Labrador Hydro - March 9, 1998 ("NLH Power Contract")

- As noted above, CFLCo now recaptures 300 MW under the Hydro-Quebec Power Contract. All of this power is sold to NLH under this Power Contract on the same pricing terms as is applicable to the Hydro-Quebec Power Contract and for the same duration, i.e. August 31, 2041.

Guaranteed Winter Availability Contract between CFLCo and Hydro-Quebec - November 1, 1998 ("GWAC")

- The purpose of the GWAC is to provide for maximum availability of all eleven generating units at the Churchill Falls plant during the winter months, as this is the peak demand period for Hydro-Quebec.

- Hydro-Quebec makes payments to CFLCo based upon the availability of these units during the winter months. As noted earlier, the terms of the Hydro - Quebec Power Contract require CFLCo to make available to Hydro-Quebec on request, any additional capacity that in CFLCo's opinion can be made available. In essence, GWAC provides financial compensation to CFLCo for ensuring that additional capacity, in the amount of 682 MW, is available during the winter.

- The GWAC terminates upon the termination of the Hydro-Quebec Power Contract.

Shareholders' Agreement between Newfoundland and Labrador Hydro, Hydro-Quebec and CFLCo - June 18, 1999 ("Shareholders' Agreement")

- Under this Agreement, NLH and Hydro-Quebec, as the shareholders of CFLCo, agree on certain corporate governance, operating and financial provisions related to the business and affairs of CFLCo. These include such things as restrictions on the transfer of shares, composition of the Board of Directors, decisions requiring the approval of both shareholders and others requiring a "special majority" of the Board of Directors, provisions relating to Twinco Power upon the expiration of the Twinco Sublease, creation of a Reserve Fund and an agreement as to a dividend policy. CFLCo is a party to the Agreement "to take cognizance of and to agree to comply with its terms and conditions."

- The Shareholders' Agreement expires on the earlier of date upon which either of the present shareholders (or an affiliate) no longer holds shares in CFLCo or August 31, 2041.

Water Management Agreement between CFLCo and Nalcor Energy – March 9, 2010 ("WMA")

- The Electrical Power Control Act requires that two or more persons who have been granted rights by the Province to the same body of water as a source for the production of power and who utilize, or propose to utilize, or to develop and utilize the body of water as a source for the production of power, shall enter into an agreement for the purpose of achieving the most efficient production, transmission and distribution of power.

- The WMA provides for the coordination of the use of the waters of the Churchill River in the production of power and energy by CFLCo on the Upper Churchill River and by Nalcor on the Lower Churchill River. The purpose of this Agreement is to make for the most efficient use of the waters of the Churchill River in the production of power and energy on the river, but pursuant to the Act, it can in no way adversely affect any of the existing contractual obligations which CFLCo has to provide power and energy i.e. Hydro-Quebec Power Contract, NLH Power Contract, GWAC and Twinco obligations.

- The WMA shall be in effect until such time as one of the parties permanently ceases to operate a production facility on the Churchill River, or the parties agree to terminate it. In the latter case, the parties must agree on a new agreement to replace the WMA.

Footnotes

1 MHI reply to PUB Information Request 3. Available online at http://www.pub.nf.ca/applications/MuskratFalls2011/files/rfi/MHI-Nalcor-3.pdf.

2 James Hiller, "The Labrador Boundary," at www.heritage.nf.ca/law/boundary.html.

3 Re Labrador Boundary [1927], 2 DLR 401 (J.C.P.C).

4 Jason Churchill, "Pragmatic Federalism: The Politics behind the 1969 Churchill Falls Contract,"

5 Hydro-Quebec 2010 Annual Report, p.9.

6 Newfoundland and Labrador Hydro 2010 Consolidated Financial Statements, Note 18 – Segment Information, 2010.

7 Our Energy, Government of Newfoundland and Labrador, 2007, at p. 33.

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