AIMS Commentary
Atlantic Institute for Market Studies

The Muskrat Falls Hydro Project
Opportunities and Risks

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October 2012

THE RESOURCE

Labrador has significant potential for the production of hydroelectric power, ranking it among the top remaining, undeveloped resources in North America.

The proposed Muskrat Falls project at Lower Churchill Falls would be the second major development of Labrador's hydro resource.

The Upper Churchill generation facilities entered into service in 1971 and have a capacity of 5,428 MW. Power is transmitted to Hydro Quebec (HQ), which may then use or resell it. The Province of Newfoundland and Labrador (NL) receives a relatively small share of the power and revenues with most benefit attributed to HQ. The rights to Upper Churchill power will fully revert to NL in 2041, though there are no transmission facilities now available that would allow the use or export of Upper Churchill power by NL.

Lower Churchill consists of two locations: Muskrat Falls (824 MW) and Gull Island (2,250 MW). Generation from either of these sites would require new transmission interconnections to existing grids.

Hydropower is the leading renewable, non-carbon resource in the world. While no generating resource can be developed without environmental and social impacts, the remote location of the Churchill facilities makes them especially attractive for development. At the same time, their remoteness imposes unusually heavy transmission costs to bring the power to customers – the load.

Because there is no fuel cost, the capital costs of hydro generation and transmission allow planners to have a good idea of power supply costs over the long term.

THE PROPOSAL

Nalcor, the NL crown corporation responsible for the great majority of the power generation in the province, and Emera, a public corporation owning Nova Scotia Power, distribution utilities in Maine and other holdings, have signed agreements for the development of Muskrat Falls.

In addition to the development of generating facilities by Nalcor, the agreements provide for transmission links between Upper and Lower Churchill Falls, between Lower Churchill Falls and the Island of Newfoundland and between Newfoundland and Cape Breton, Nova Scotia. For the first time, these transmission lines would connect the two parts of NL to one another and Newfoundland with the North American grid.

The agreements foresee the use of 40 percent (330 MW) of the output by Nalcor to replace the Holyrood fossil-fuel generating plant and for load growth. Emera would use 20 percent (165 MW) of the power, allowing Nova Scotia Power to replace some coal-fired generation and to progress toward meeting federal and provincial air quality requirements.

The use of the remaining 40 percent is not committed. According to public statements made by the provincial governments and utilities, it is expected that much of this power would be used for export, mainly to New England (NE). The agreements provide to Nalcor a transmission path available for use for such exports. This power supply would also be available for new economic development in NL.

BACKGROUND

The proposal is set against an historical situation and power supply that have conditioned the discussions leading to the Muskrat Falls project.

In NL, strong feelings exist about the Upper Churchill project. HQ would not permit the use of its transmission system for exports from the facilities and insisted instead on taking title to the power. NL was dependent on HQ for funds that would support the development of the enormous project. Because of sentiments that HQ had unfairly and inequitably exploited a NL resource, NL understandably seeks to avoid a similar situation in the development of Lower Churchill.

In Newfoundland, Holyrood, an oil-fired 465.5 MW generating station about 40 years old, produces between 15 and 25 percent of the power consumed. While most power used in Newfoundland comes from hydro, Holyrood is one of the two largest resources on the system. The plant is vulnerable to world oil market costs and is reaching a stage when its replacement or refurbishment must be considered.

The province has explored its options for meeting future power needs including both retiring Holyrood and continuing its use. The government favors its replacement with supply from Muskrat Falls and other smaller resources.

In Nova Scotia (NS), of the 2,552 MW of generation, some 1,243 MW is coal-fired. Such generation presents air-quality challenges where it exists. The largest single station on the Nova Scotia Power system is Lingan, a 620 MW coal-fired station with four units.

Emera must move to reduce greenhouse gas (GHG) emissions, which means the replacement of some coal-fired supply with less polluting resources. Power from Muskrat Falls would contribute to this effort.

The relative cost of Muskrat Falls power compared with what it would replace in both provinces is not entirely clear. In both cases, its use and the stability and predictability of its costs could cushion the utilities against the risks of increasing costs resulting from fossil fuel prices and environmental improvement measures. This factor is a major consideration in the development of the project to this point.

THE AGREEMENTS

The Muskrat Falls project is embodied in 13 separate agreements with a total of about 1,500 pages. These agreements contain provisions with respect to financial and operational responsibility, direction and management, dispute resolution and other normal contractual matters. The detail is required, because the agreements deal with contingencies that could not be known at the time of signing relating to such matters as costs, in-service dates, final financial responsibilities and sanctions and other approvals, both by the participants and non-participants, including regulators.

There are several governing principles apparent in the agreements.

- Nalcor should have control and majority ownership of generation and transmission facilities within its territory.

- Emera should assist in financing project facilities, including new transmission in NL.

- Emera should have the principal responsibility and control with respect to the transmission interconnection between Newfoundland and Cape Breton.

- Nalcor should own and have the ability to dispose of power above the allocations to Emera and itself by using some of Emera's transmission rights in the Maritimes and with New England.

From the NL perspective, the agreements are intended to lead to the development of Lower Churchill without any of the downside associated with the Upper Churchill relationship with HQ. NL is meant to avoid both the loss of control over facilities in its own territory and the lost opportunity cost that might be derived as the value of Muskrat Falls output increases over time.

As with Upper Churchill, NL may lack sufficient financial resources or electricity market to support the development of Lower Churchill on its own. Emera would play the role similar to that HQ previously played, but, unlike its predecessor, it would allow for Nalcor to make its own sales using the Emera transmission system and rights on other systems.

While the essential element of the project is the construction and operation of the Muskrat Falls generation, to be handled by Nalcor, the Nalcor-Emera arrangement deals mainly with transmission of power from Muskrat Falls.
The transmission arrangements deal primarily with three transmission lines and the use of some existing lines.

1. Labrador Transmission Assets (LTA). These facilities would link Muskrat Falls, Gull Island, and Upper Churchill. By means of this transmission, NL would have a continuous link to both HQ and the Maritimes. Emera would gain similar access. To be owned by Nalcor.

2. Labrador-Island Link (LIL). This transmission would extend from Muskrat Falls to Soldiers Pond on the Avalon Peninsula. It would permit the use of Muskrat Falls Power for the principal Newfoundland load as well as its export to NS using existing Nalcor transmission. Nalcor would be the principal owner with investment also from Emera.

3. Maritime Link (ML). This new transmission would connect western Newfoundland with Cape Breton. It would permit the delivery of Emera's Muskrat Falls entitlement and Nalcor's

exports to the Maritimes and New England.

4. NS, NB, MEPCO. Emera would transfer to Nalcor transmission rights sufficient to transmit excess Muskrat Falls power to New England. In NS, such transmission would include the Nova Scotia power system and the interconnection with NB. In NB, Emera would transfer its rights for the transmission of power from its Bayside generating unit, equivalent rights, or compensation. In New England, Emera would allow Nalcor to use its rights on the MEPCO line, part of the New England grid.

The financial provisions of the agreements define the costs and compensation of the two principal participants – Nalcor and Emera. However, no definitive statement of the project costs or that of any element is contained in the agreements.

Emera would have 49 percent of the ownership of the entire transmission project with the LIL serving as the cost balancing account, which also takes into account considerable investment in the LTA and ML. In addition to this investment, Emera would provide Nalcor with transmission rights on three systems. Such rights have an economic cost to Emera, which could forego important export opportunities. It would be responsible for 20 percent of the transmission operating costs for 35 years. It would be allocated 20 percent of the Muskrat Falls output (25 percent in the first five years) – the Nova Scotia Block – for 35 years. Emera has the right of first refusal on short-term energy or capacity from Nalcor that would otherwise be purchased by a third party using the ML.

Nalcor would have 51 percent ownership of the transmission project and the generating plant. It would gain transmission access and would pay the standard rate for use of the transmission system to the owner or operator. It would deliver the Nova Scotia Block. It would be responsible for 80 percent of the operating costs of the transmission for 35 years and could assume full cost responsibility thereafter.

The governments of the two provinces agree that they would compensate Nalcor and Emera if certain provisions of their multiple agreements are undermined by government action. The interprovincial agreement assumes that all required sanctions and approvals will be obtained by the end of July 2015.

BENEFITS, COSTS AND RISKS

The essence of the proposed transactions is that each party contributes to and gains from the complex arrangement and that the gains are worth the costs. In other words, the Muskrat Falls project presents itself as a balanced business deal. Debt financed, it would take advantage of current interest rates, which are near historic lows.

Nova Scotia

Summary of Emera Benefits

- Muskrat Falls – 165 MW capacity and related energy; based on Emera's ML cost being 20% of total asset cost.
- Greenhouse Gas credits; Renewable Energy Supply.
- Rate base additions for new transmission.
- Supply access for current load obligations in NS, NE
- Interconnection with HQ via NL.
- Facilitates balancing output of wind, tidal resources.

Summary of Emera Costs and Risks

- Cost of transmission investment in NL and NS.
- Loss of transmission access for 260 MW Bayside unit and 300 MW in NE.
- Project cost unknown; estimated. Responsible for 49 percent of transmission investment.
- Lack of ultimate control.

Nova Scotia Analysis

For Nova Scotia, this is a relatively straightforward supply and transmission deal that would assist Emera in meeting both environmental and operational needs.

At its heart, the deal consist of two trade-offs. First, Emera covers 20 percent of the transmission costs – the ML -- in return for which it receives 20 percent of the Muskrat Falls output for no less than 35 years. Second, it gains partial ownership and return from the LIL in return for which it loses transmission access for the Bayside generator it owns in New Brunswick.

Nova Scotia cannot supply all of its electric power needs from within the province, especially in light of federal GHG requirements that will cause it to eliminate coal-fired generation. Emera can replace revenue-producing generating plant with revenue-producing transmission.

The cost of the Muskrat Falls project in Nova Scotia is claimed to be no greater than the cost of other alternatives to meet environmental requirements. End-user rate increases for replacing coal, principally by means of Muskrat Falls power, are projected to be in the range of 2-3 percent annually until 2020. The acknowledgement that moving from traditional sources to renewable supply may cost more is positive and avoids misleading customers, governments, or regulators.

Emera would gain significant improvement in its transmission situation. It would be interconnected with NL, giving it access not only to its Muskrat Falls allocation, but also to additional renewable power. It also would gain a new access route for transactions with HQ. In the future, the new transmission could permit transactions to flow into NL or HQ.

The current transmission link between NS and NB is limited and provides between 100 and 300 MW of transfer capacity. By virtue of the Muskrat Falls arrangements, the line would be able to carry as much as 500 MW of power with virtually no additional cost. This enhances Emera's ability to do business in either direction with NB and beyond.

By making concessions to Nalcor that would require allowing for transactions across its system and by use of its transmission rights outside of its territory, Emera would make some sacrifices. However, it can reasonably argue that the benefits outweigh the costs. And there is no reason to believe that the transmission system will remain as it is over the coming decades, so Emera may be able to overcome the long-term effect of concessions it would make.

With a federal guarantee of the debt needed to finance the Muskrat Falls project, Emera would benefit not only in terms of lower interest charges but also by knowing that the deal is backstopped at least to the degree allowed by the terms of the guarantee. The guarantee is said to be assured though its terms, undisclosed at the time of writing this report, are likely to be influenced by the total cost covered and conditions or limits it may impose. It would come at a time of already low interest rates, making the project's timing especially attractive.

Emera will have to obtain approval for most aspects of the deal from the NS regulator, the Utility and Review Board (UARB). Regulatory review is an important attribute of the arrangements. The regulator will be able to impose protection for Nova Scotia customers in the event of cost overruns or other departures from the plan. It will also be able to determine if the project is sound and, in regulatory terms, "prudent."

The amount of NS energy – the Nova Scotia Block – to which the costs would be attributed is only about eight percent of the total Nova Scotia Power supply. Thus, the rate impact – either up or down – could be small.

The Nalcor-Emera agreements provide for alternative course of action in the event that the UARB approval does not allow for what the proponents regard as sufficient cost recovery. At the extreme, a UARB decision that Emera found inadequate could result in its withdrawal from the project.

In general, the Muskrat Falls project could produce positive results for Nova Scotia and Emera. While much depends on the final cost of the undertaking, regulatory review provides an important element of protection. More than the power supply, Emera's improved transmission access to environmentally acceptable resources would be a highly valuable result of the project.

Newfoundland and Labrador

Nalcor Benefits

- Muskrat Falls 824 MW generating station to supply NL and for export. Wholly owned.

- Transmission link to Upper Churchill,

- Transmission link from Lower Churchill, resulting in Island connection with Upper Churchill and HQ. Wholly owned.

- Transmission link between Island and NS, resulting in NL connection with Maritime and New England grid. Owned by Emera.

- Transmission access on NS, NB (260 MW) and NE (300 MW) systems.

- Emera capital contribution to NL transmission costs and financing of ML.

- Nalcor with significant degree of project control.

Nalcor Costs and Risks

- Twenty percent of Muskrat Falls output (980,000 MWh) to Emera in return for transmission investment. Twenty-five percent in first five years; 35-year period.
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- Project cost unknown; estimated. Responsible for 51 percent of transmission investment.

- Power sales unknown.

Newfoundland and Labrador Analysis

While the NS end of the Muskrat Falls project can be considered a utility power supply and transmission arrangement, in NL it is seen as a business transaction of greater relative importance to the province than is the case in NS.

Nalcor is an energy company whose scope goes well beyond the traditional electric utility. It acts much like an investor-owned enterprise not subject to utility-type regulation. It has only one shareholder – the provincial government, and it

carries out its business in line with its owner's policies and with a clear profit motive.

Because its profits are mainly used for further business development, it is an engine of economic development for the province. In a sense, it is as if a private company were managing important segments of the economy, but the shareholder is not an investor but the government itself.

It is important to understand this difference from traditional utility operation is analyzing the character and operation of the Muskrat Falls project from the NL standpoint.

Nalcor wants to develop Muskrat Falls based on the premise that it can derive a significant return for NL by avoiding the drawbacks of the Upper Churchill deal with HQ while employing much of the same sales approach from which HQ has drawn what appears to be considerable profit. In short, Nalcor wants to use Muskrat Falls power to make sales to the energy market at its then current prices. It has made no firm decisions on how it would dispose of power in the market, though it shows a bias in favor of short-term sales in the spot market.

As for in-province use, NL must decide on its future power supply given the age and air quality effect of Holyrood, its largest station, which burns oil. Using hydro to replace it both on environmental and economic grounds can be attractive if the costs can be reasonable. Nalcor claims that over 50 years, NL customers would save at least $2.2 billion over alternative approaches to dealing with power supply. It correctly notes the far greater price stability from a hydro resource compared with a fossil fuel generation.

For meeting NL needs and for power sales, Muskrat Falls also benefits from a significant advantage in its large potential impoundment – the behind-the-dam storage offered in Labrador. A large amount of storage allows for dealing with low-water years and for playing the market at least to some degree.

Three areas of the proposal impose risks.

- First, what will the project cost?
- Second, how will electric customers and taxpayers be protected?
- Third, is it possible to operate what is essentially an electric utility project as if it were a pure business proposition? Related to this is the history of the Nalcor system isolated from the rest of North America, where there are opportunities, costs, and obstacles that have not previously been encountered.

Cost

Nalcor has the responsibility for determining the project's cost. The government decision to proceed with the project will be based on the costs that will be included in what is called Decision Gate 3 or DG3.

The DG3 costs will undoubtedly be higher than the $6.2 billion previously reported in DG2 and will include an allowance for cost overruns. But should the cost be higher than planned, it would have to be absorbed by using revenues from other Nalcor operations. Ultimately, the NL taxpayers, either through Nalcor or directly, or utility customers are responsible for revenue shortfalls.

The expected Canadian federal loan guarantee would be meant to protect against faulty economics. Nalcor and the NL government seem assured that the loan guarantee will cover the project costs whatever they may be. The

details of the guarantee and the conditions under which it would be available are of critical importance. To be sure, even if circumscribed, it should result in a reduced interest rate, a useful way to lower the project cost.

The government will decide on whether the projected cost is acceptable. It is considered to be a virtual certainty that it will decide favorably.

Control

Nalcor, both a generation and transmission utility, is not subject to utility regulation, because it is owned by the province.

To ensure that the project's feasibility and costs are reasonable, Nalcor uses outside, independent consultants. In effect, the consultants' opinions serve in lieu of regulatory review. In the traditional regulatory process, the expert opinions used to support an application are often confronted by the expert opinions of opponents, with the regulators deciding which are more convincing. In the Muskrat Falls review, there are only the proponent's consultants.

The regulatory process usually results in a determination of the allowable project cost with only that amount being able to be charged to customers. Here, Nalcor would charge customers rates derived from the project cost. The protection for customers would only be based on an estimate that the project's effect on rates would be less than they otherwise would have paid. If the estimate turns out to have been low, customers could see higher than projected rates.

In an attempt to obtain preliminary regulatory review and approval, the NL government referred to the Board of Commissioners of Public Utilities (NLPUB) a question about the economics of Muskrat Falls as compared with alternatives. The inquiry was limited to the project's in-province effect. The regulator could not look at the ML or off-system sales, because of a desire by the government to determine if Muskrat Falls produced benefit for provincial customers without taking any other possible benefits into account. In effect, such "outside" benefits would only make a good deal better and perhaps would help serve as a guarantor of the project's success.

The NLPUB conducted a full-scale investigation, including testimony from Nalcor, interveners and the public. The Board hired Manitoba Hydro International (MHI) to provide an expert review of the proposal.

The type of analysis that the Board was asked to make, comparing two alternative power supply arrangements, is sensitive to two forecasts: load growth and the cost of fuel to the extent that either alternative involves the use of carbon-based fuels. In addition, the regulator must have reasonable information about the capital and other costs of the generation and transmission involved.

In its report, MHI expressed significant reservations about elements of the Muskrat Falls proposal for meeting NL requirements. In its own analysis, the Board said: "Assuming no monetization of excess power, the potential supply associated with the Interconnected Option is much greater than the forecast load. The preference for the Interconnected Option would appear to be the result of forecasted fuel savings associated with the closing of the Holyrood Thermal Generating Station."

The Board was clearly troubled by the need to render a decision using an outdated load forecast and with a forecast period of 50 years containing assumptions with respect to load and fuel costs.

But the Board's concern went beyond the long-term financial projections. It paid attention to the technical concerns raised by MHI, most notably those relating to system reliability. In particular, the failure of Nalcor to propose

meeting North American industry design standards and reliability problems that could result from the loss of the LIL was cited as causes of concern that had not been satisfactorily addressed.

Within the context of the request made to the Board, the technical issues were of special importance. If NL remained isolated from the regional grid, as it would under either option, it would not run into problems with the North American Electric Reliability Corporation (NERC), which is responsible for reliability standards. But the Board was reluctant to accept a system with reliability below the industry norm.

The Board determined that it could not make a choice between the two alternatives, because the information provided by Nalcor was "not detailed, complete, or current enough."

The Board will not get another look at the Muskrat Falls project. It is likely that the project will continue to rely on extremely long-term forecasts, whose lack of reliability, in any context, is well understood. Thus, the Board's conclusion, even with updated cost information, would likely be the same; it would be unable to determine that the project was preferable for NL customers.

To remove this considerable risk to a decision to proceed with Muskrat Falls, two measures might be considered.

First, the project analysis should not be limited to in-province considerations alone. The deal with Emera is an integral part of the project and its positive effects should be taken into account. Nalcor places great emphasis on the potential for off-system sales of the excess power produced. Some review of the potential revenues from such sales should be made, and it should go beyond the expectation of revenues from spot market sales many years later.

Second, the project should be subject to review either by a regulator or by the government meeting the same standards as would a regulator. The purposes of this review would be to impose normal regulatory standards to the project analysis, because at its core this is a utility arrangement. To be sure, generators and marketers in other jurisdictions are not regulated, but they are exposed to competition. In NL, Nalcor, as generator and marketer, would not face competition for serving the provincial market, so the regulator would serve as the traditional "surrogate for competition."

The regulatory review could determine if, as compared with alternatives within a reasonable period, the project could be seen to produce benefits for customers. It could also limit the amount of project spending that could be recovered from customers. Of course, customers and taxpayers have considerable overlap so that NL people would not be totally protected from high project costs, but it is appropriate to provide more certainty to utility customers.

Export sales would provide needed contributions to the cost of both the generating plant and the additions to transmission. Lacking such contributions from the sale of exports, costs are likely to fall on NL customers. Because the amount of excess energy is equal to the expected use of the plant's output in NL, the effect could be to double the price of power from Muskrat Falls. The plant's capacity would be more than 20 percent of the Nalcor total, so its impact in rates would be appreciable. Even if Muskrat Falls is projected to produce in-province savings, export sales should be used in part to lower rates. As currently planned, it appears they would flow solely to Nalcor potentially for other uses.

In NS, the UARB has jurisdiction to review most of the provisions relating to Emera and Nova Scotia Power. Its decision could determine what is to be included in rate base on which a return may be earned, and the costs allowed to be

recovered in rates. These decisions are relevant to NL, but they should not be the only regulatory review; NL should act in the same manner.

Utility vs. business approach. Nalcor approaches the Muskrat Falls project as a business development, possibly akin to its oil projects. It is not regulated as are public utilities engaged in similar operations. This situation raises some issues about the Muskrat Falls project.

Nalcor sees generation and transmission as a bundled product. Transmission is by its nature a monopoly and is usually subject to regulation. Generation may be unregulated where the supplier is subject to competition, both because the transmission system is available to other users and the presence of other suppliers.

In the Muskrat Falls project, Nalcor would receive what amounts to an assured transmission reservation on its own system, the ML, the NS system, the NB system, and MEPCO. Some of this access is inherent in the project costs, and some is subject to specific transmission rates either in tariffs or by contract.

If Nalcor makes sales into the U.S. market or into any Canadian system with an Open Access Transmission Tariff (OATT), it would have to unbundle its transmission charges from its generation charges. If its system could be used by others (for example, for a transaction between HQ and Emera), it would have to have a transmission rate for its own system. The rates for the Nalcor transmission system should be subject to the NLPUB.

Nalcor looks forward to sales in New England, where its spot market approach might work well. But there is a major obstacle to such sales. Muskrat Falls power must pass through four transmission systems, each with its own charges, before accessing end-use customers in the NE market, while internal market customers pay only one charge. The systems are NL, NS, NB, and ISO-NE. The rate on each system must be added to the cost of the power supply. This is the process known as "pancaking". The added cost for each system can be as high as 10 percent.

Power supply in NE has come to be based principally on natural gas. Thanks to the development of shale gas as far north as New York, the price of natural gas is relatively low and is likely to remain so. That will encourage the use of NE regional resources. The transmission price differential and the relatively low regional fuel cost could combine to inhibit purchases from distant resources or reduce their margins .

None of these considerations is necessary in a completely "islanded" system, as Nalcor has been. But Muskrat Falls makes a major change through the interconnections with NS and HQ. The first physical link between NL and the North American continent has been called historic. Such an event has broad implications.

As MHI noted, the Nalcor system does not meet continental reliability standards. It would seem essential that the system should meet the same standards as the remainder of the system to which it would be interconnected. That would pose an additional cost on the project.

Because of the desire to achieve profits as HQ has done at Upper Churchill, Nalcor appears to give high priority to the spot market. Admittedly, the project is probably about six years away from service. But Nalcor can, even at this stage, give higher priority to longer-term arrangements with profitable pricing that also would contribute to reducing the risk of the project. It seems likely that Emera would be a likely customer for additional power from the project, if Nalcor made it available.

Finally, as virtually the monopoly generation and transmission utility in the province, Nalcor should be sensitive to the contribution of end-use customers. To the degree that customers would contribute to the cost of the project through their rates, they should receive some protection. At the same time, if the system for which they are the core customers produces substantial income from off-system sales, they ought to be allowed to share in the benefits through revenue offsets to rates.

Regional Analysis

The Muskrat Falls project could offer benefits not only to NL and NS but also to all of Atlantic Canada. If some of the regional benefits can be realized, some of the risks for NL inherent in the arrangement as it is currently structured could be significantly alleviated.

Muskrat Falls would result in the creation of an Atlantic Canada grid linked at both ends to neighboring grids – ISO-NE and HQ. The Atlantic Canada grid would allow for substantially greater exchanges within the region, opening the possibility of more economic use of generating resources, reduced GHG, and a more efficient use of transmission.

Atlantic Canada has long considered ways of having the four provinces work more closely on energy matters. Muskrat Falls would be a major step in that direction. But a formula would have to be found for exploiting the opportunity of an interconnected regional grid.

An Atlantic Power Pool could meet region's needs without disrupting historical provincial utility operations and markets. Over the years, negotiations have shown that the four provinces do not support giving authority over their systems to a regional entity or creating a single regional market.

As matters now stand, power flowing from the Lower Churchill project could be subject, explicitly or implicitly, to four separate transmission charges before it could be delivered to a NE customer.

An Atlantic Power Pool would have three elements.

First, there would be an agreement that, to the extent allowed by existing transmission, electric power would be dispatched to load in a way to ensure the greatest reliability at the least cost in the region.

Second, the physical dispatch of power from generating resources would be handled by an independent manager under the joint control of the provinces. The manager would not operate a market, but would carry out power transfers under rules agreed by the provinces. Having an independent manager carry out this function would ensure that no utility operator could use the grid to the disadvantage of others.

Third, there should evolve a single transmission tariff for the region similar to what has been achieved in New England. By combining the rates through a gradual process that would take several years, the cost of using the system for inter-provincial and export-import transactions could be substantially reduced. Pancaking could be eliminated. The result would be a "postage stamp" rate under which users pay the same charge no matter the distance between supplier and customer.

For NS and PEI, as importing provinces, the benefits are obvious. For NB, which seeks to keep much of its generation in service, it would be possible to achieve economies and leave open decisions about future power supply.

For NL, the benefits of an Atlantic Power Pool could be substantial. When not otherwise committed, power from Muskrat Falls, not

having a fuel cost, would be readily dispatched. Hydro is the most valuable of resources for generation on the grid, because it can be varied in amount to meet demand as it changes and because, especially in the case of Churchill, it can be stored for use when needed. The pool could provide Nalcor a steady revenue stream. Although the proposed Muskrat Falls transmission lines would be financially supported under the Nalcor-Emera agreements, future transmission expansion could be supported by the region.

A pool would allow for the sharing of reserves, reducing the need for each utility to maintain its own separate reserves. This should reduce costs.

There is regional precedent for such a pool. All of these measures were applied by the New England Power Pool (NEPOOL) before the creation of a single market. Atlantic Canada need not move to a regional market, but could achieve significant benefit from the availability of a major hydro resource on an integrated regional grid.

In short, an Atlantic Power Pool could provide customers with greater reliability at a reasonable cost. And it could provide substantial revenue security to the Muskrat Falls project.

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