

# Free Trade and Electricity

*Canada has an export opportunity if it can economically displace existing oil- or gas-fired units.*

In the last ten years, electricity trade between the United States and Canada has gone from a roughly balanced seasonal interchange to Canada's present position as a major net exporter of power. This change elicited some political reaction in the United States, primarily in the form of a coalition opposed to the further expansion of such trade, claiming both that it posed a potential threat to US economic security and that Canadian electricity producers had various unfair advantages by reason of their public ownership<sup>1</sup>.

In light of this challenge, when looking at the future of electricity trade, analysts differentiated between the prospects for two types of traded electricity.<sup>2</sup>

Short-term exports from Canada seemed likely to continue. They depend only on the relative levels of demand and short-term marginal generation costs in the two countries. This trade dispatches the cheapest generation sources to be used first. Whenever the marginal generation capacity in one country uses a cheaper fuel than the marginal generation in an interconnected utility, electricity will be traded and the cheaper fuel will displace the dearer. In such trade, hydraulic sources will displace any fuel; nuclear sources will displace any fossil fuel; and coal will displace oil. Because many utilities in the states bordering Canada, especially in the Northeast, will frequently have oil-fired generation capacity operating at the margin, and because neighbouring Canadian utilities will have either hydraulic, nuclear, or coal at the margin at least some of the time, short-term electricity trade will continue to be profitable. Because it is priced in a way that renders the protectionist arguments invalid, the Free Trade Agreement (FTA) is unlikely to affect it either way.

For longer-term trade the story is quite different. There are numerous risks inherent in long-term power contracts. These contracts would have to cover the construction and operating costs of new generation facilities. With the long lead time in construction, and the long lives of the facilities, both US buyers and Canadian sellers can be expected to want a clear statement of how the risks are to be shared before they would sign contracts. So development of long-term sales could be slow in the absence of a mechanism for

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## *The impact, positive or negative?*

*By providing a more stable trade climate generally, by removing some irritants and impediments and by preventing the imposition of others, the FTA will have a positive effect on the amount of long-term firm power and energy sales to the United States that will benefit both countries, as international trade should.*

## *Le bilan: positif ou négatif?*

*Grâce à l'accord sur le libre-échange, la mise sur pied d'un climat commercial stable, l'élimination "d'irritants" et de barrières traditionnelles et le freinage de la création de nouveaux obstacles devraient augmenter les ventes fermes de puissance et d'énergie à long terme, bénéficiant aux deux pays.*

these issues. Further, the protectionist arguments are aimed directly at such sales.

Even so, new long-term sales have developed rapidly. The government of Quebec has made the construction of a second phase of hydraulic generation facilities on its northern rivers flowing into James Bay a major priority. Accordingly, it has negotiated and announced some major increases in long-term export sales contracts, and the start-up of the James Bay II project.

Given all this activity, how will the FTA affect these electricity trade prospects?

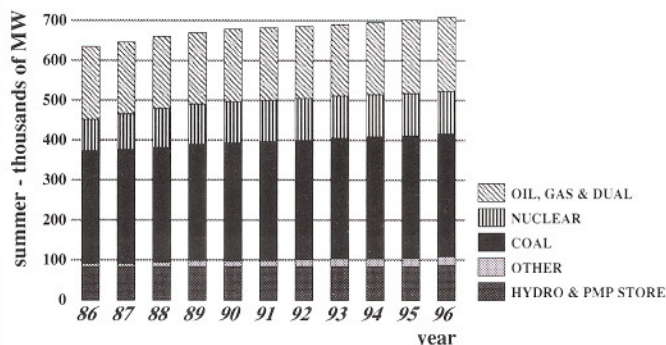
Of course, it is not possible to be certain of the effects of the FTA. Its language is to be translated into implementing legislation, which will then be subject to litigation on both sides of the border. So, although the position of the principal negotiators on both sides, at least with respect to energy, is clear, the ultimate resolution of the effect of the FTA will have to await experience of it in operation. Therefore, although they are reasonably well informed through reading and personal contact, the opinions on the effect of the FTA expressed here must be considered to be those of the author.

## FTA Provisions and Electricity Trade

Before starting on the impacts, it would be useful to lay out some background information. First, we will briefly examine the provisions of the FTA that relate to electricity, and indicate how, if at all, they change the current position. Second, we will consider in more detail the underlying economics of the electricity trade. Finally, these two put together will suggest conclusions about the impact of the FTA on this trade.

Electricity is included in the FTA by being defined as an energy good. This follows North American practice, and clarifies the status of electricity but does not follow the practice of the General Agreement on Tariffs and Trade (GATT). Also, some specific statements in the Agreement relate to electricity trade.

CHART 1  
*Actual and Projected Installed  
Generating Capacity by Fuel  
(1987-1996 forecast)*

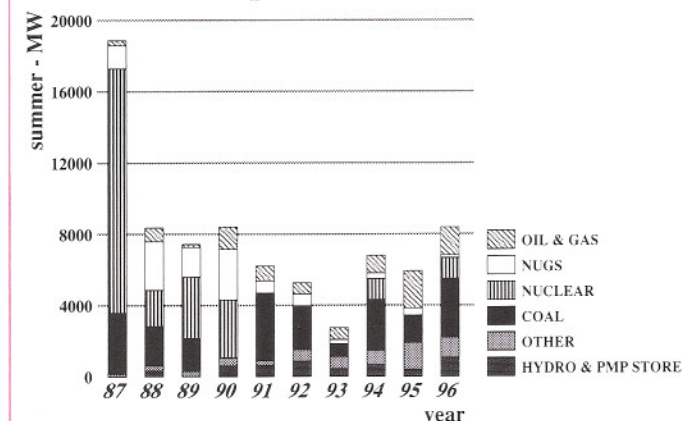




The general intent of the FTA in the area of energy, as in other areas, is to reduce all tariffs to zero and to reduce the ability of the respective governments to impose or maintain new tariff or Non-Tariff Barriers (NTB's). In energy trade, the barriers to be prohibited include restrictions on exports as well as restrictions on imports.

As it is for other goods, the FTA's treatment of energy is generally modelled on the GATT. Conditions added to GATT treatment relate to the possible imposition of export taxes, export price floors, and quantitative export restrictions. The FTA provides for consultation in the event that a regulatory action taken by one country is felt to discriminate against the energy goods of the other. (This would preclude unilateral actions like Federal Energy Regulatory Commission Ruling 256, for example). The FTA also

CHART 2  
*Generating Capacity  
Expected Additions*



limits the national security argument for import restrictions to the actual energy needs of the military establishment.

Two measures relate specifically to electricity trade. The US agrees to have the Bonneville Power Administration give British Columbia Hydro access to its interties on the same terms as other utilities from outside the Pacific Northwest. Canada agrees to drop its third price test for power exports, which stated that the export price had to be close to that of the price of replacement energy. The surplus test, which Canada's National Energy Board had administered for electricity and gas exports, is left intact but subject to other provisions of the Agreement.

However, the Agreement will have other impacts on electricity trade. That their direction is not completely clear is seen from the fact that two major electricity-exporting provinces, Quebec and Manitoba, have taken opposite positions on the FTA, with Quebec a strong supporter. This partly reflects their overall political philosophies, as well as their economic self-interest, but is indicative of the different readings given to the FTA.

## Underlying Conditions of Trade

It would be informative here to review the conditions underlying electricity trade between the two countries. In the recent past, US electrical utilities have planned very few new generation facilities. This was due to several factors: a period of chronic excess capacity; the surge of non-utility generation spurred by the US Public Utilities Regulatory Policy Act (PURPA) legislation; the general economic climate; and the reactions of regulators to companies that did build. Utility executives learned that to build a new plant was to bet the company, because regulators would disallow its costs if they decided that the plant was not needed at the time it was finished.

For most of the 1970's and early 1980's, this approach was fine. The existing generation facilities could more than meet the demand, even if they did have to use some expensive fuel to do it. Legislatures helped, federally with the PURPA legislation and locally with various state regulations requiring utilities to pursue conservation.

However, since the recession of 1981-82, the North American economy has gone through one of its longest unbroken postwar expansion periods, producing a corresponding increase in demand for electricity. It now begins to look as if the United States will collectively begin to run short of electric power by the mid-1990's. That time is within the planning horizon of electric utilities, so they must begin thinking about it. Right now there is more than enough generation capacity to meet peak demand with an adequate reserve margin. But demand is forecast to grow by about 2% per year, about twice the 1.1% growth rate of capacity, so that reserves will be on the border of inadequacy by 1996.<sup>3</sup>

Chart 1 shows the existing and planned generation mix in the United States. Chart 2 shows how that additional capacity will be fueled. The chart includes both Seabrook and Shoreham, because the reporting utilities expected to bring them into service at the time the survey was taken. As usual, a lot of new nuclear capacity is expected to come into service in the first forecast year. Many utilities have plants that they always plan to have operating next year.

Whenever that overhang is absorbed, coal will fuel most new capacity in the United States. However, there is also a significant number of oil- or gas-fired generation additions. Further, much of the non-utility generation, or NUG, is planned to be gas-fired.

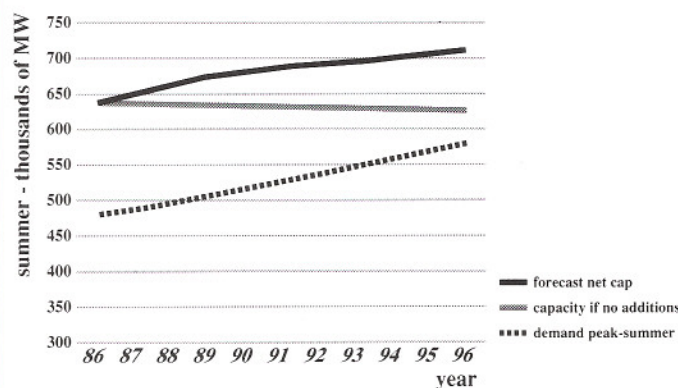
Chart 3 shows the results in terms of the balance between demand and supply at peak. In the first years, there is no problem: existing capacity can easily meet the load, with an adequate reserve. However, in the later years, the reserve margins become disturbingly thin. Further, Chart 4 shows that about one-eighth of total electricity in the United States will still be generated by high-cost fossil sources, oil or gas.

In summary, demand growth in the United States clearly requires some additional capacity to maintain an adequate reserve margin. The North American Electric Reliability Council (NERC) has warned that several events could reduce the margins of reliability below acceptable levels: failure of the non-utility generators to produce as much electricity as they now plan; imposition of tougher emission standard for fossil plants; failure to get operating licenses for new nuclear stations; removal of licenses for existing nuclear stations; or stronger than expected load growth.<sup>4</sup>

So, at least some new generation is needed. The question on electricity trade therefore comes down to who has the cheaper sources of new generation potential. And even if no net additions are needed, Canada has an export opportunity if it can economically displace existing oil- or gas-fired units.

Canada clearly has that potential. A recent study by the US Department of Energy, using Canadian models, showed that new Canadian hydraulic generation would be cheaper than new US generation, even if the alleged subsidies received by Canadian utilities were removed.<sup>5</sup> This study compared costs for US coal-fired generation in New England, Minnesota and California under medium and high oil price cases. The costs for Canadian

CHART 3  
*U.S. Demand & Capacity  
at Summer Peak*





export power included estimated transmission costs. The study concluded that 80 to 90 per cent of potential Canadian hydropower would be cheaper than power from US coal-fired plants.

So there is a ready market in the United States for untapped Canadian hydro-electric generation potential. How will the treatment of electricity under the FTA affect the development of that potential?

## Effects of FTA on Barriers to Trade

To start with, the effect of the FTA on tariffs is nil, and on NTB's almost nil, because there are no tariff and few non-tariff barriers to remove. So its effect on long-term electricity trade might also be expected to be very small. However, it will be just as important to have the rules firmly set as it would be to remove barriers. As noted earlier, one of the major barriers to increased long-term contracts is the presence of high risk. Some of this is regulatory risk, on both sides of the border. By reducing this risk, the effect of the FTA could be a significant boost to electricity trade.

The specific mentions of electricity are all intended to improve trade. Access to the Pacific Northwest Intertie has long been an issue for British Columbia. Last year's large drop in electricity exports from BC to the United States was mostly due to problems of intertie access. The provision in the FTA helps that specific problem. More importantly, perhaps, it shows that the negotiators took the opportunity to remove a trade irritant that was within the direct power of the contracting parties. Most observers think that this was also meant to lead the way in removing trade barriers that discriminate by national origin.

Another specific mention of electricity was to Canada's third export price test. The National Energy Board (NEB) of Canada administers three price tests for the export of electricity. The first test ensures that the price recovers all costs, including environmental costs, incurred in Canada; the second tests that the price is not below that available to other Canadians, and the last tests whether the price is materially below that of alternative fuels available in the export market. In the FTA, Canada agreed to drop the last test, which by implication leaves the other two intact.

The effect of dropping the third price test will be minimal at most. The test was hard to administer, and Ontario Hydro had asked that it be abandoned. It does not appear to have affected decisions in actual contracts.

There have been suggestions that the FTA will affect the other price tests, along with the surplus test. In effect, the NEB has administered the second price test and the surplus test with a first-offer mechanism. To get an export license, a Canadian utility must first offer the same electricity on the same terms to other Canadian utilities. The NEB recently denied Hydro Quebec an export license because it had not made that offer. Ontario Hydro has supported the use of the first offer test, because it is a net purchaser of power from Quebec.

But under the FTA, if the NEB were to deny an export license on the grounds that the power is not surplus to Canadian needs, based solely on the existence of a shortage or possible shortage in Canada, that could involve the consultation, inquiry and sanction provisions. So it does appear possible that the operation of the FTA will upset the operation of the first two price tests. However, the best information the author has is that the negotiators intended to leave these tests intact.

One thing the FTA is unlikely to do is remove barriers caused by inter-provincial disputes. One of Canada's best undeveloped hydroelectric sites is in Labrador, part of the province of Newfoundland. However, electricity produced from this site for export would have to travel through the province of Quebec, which has its own northern resources to develop. So

development of this site will await interprovincial agreements, which could take some time.

## Effect of FTA on Regulatory Actions

Given that government policy impediments to electricity trade are likely to be regulatory, the question of the impact of the FTA turns on how it affects regulation. Does it reduce the regulatory freedom of the state governments and regulators? Does it limit the ability to introduce new regulations? Does it create a more secure environment for long-term contracts? Last year, this author suggested that an international treaty might be necessary to ensure that the terms of a long-term contract would not be changed by governments on either side.<sup>6</sup> The FTA is an international agreement; can it help guarantee contracts? Will it reduce uncertainty, or will it, at least in the short run, create additional uncertainty?

The answer is that the Free Trade Agreement does reduce uncertainty for both the buyer and the seller. It does this by reducing the likelihood that governments will interfere in the negotiation or operation of contracts between electrical utilities and their export customers.

By reducing one of the major barriers to long-term sales, it should increase their number.

Since electricity is under provincial jurisdiction, and only the federal governments are parties to the Agreement, how does it cover government action at all levels? The answer is that actionable steps by a junior government must ultimately be compensated for by the signatory governments. The mechanism is the consultation provisions, which can be invoked when one party thinks that the regulatory actions of the other

would "directly result in discrimination against its energy goods or its persons inconsistent with the principles of this Agreement",<sup>7</sup> in the language of the Agreement itself. These consultations would involve all the governments concerned. If the consultations fail, the matter would be referred to the Canada-United States Trade Commission. The Commission will arbitrate the dispute and determine compensation or remedial action. If the offending Party fails to take that action, then the other Party is entitled to "suspend application of equivalent benefits of this Agreement".<sup>8</sup>

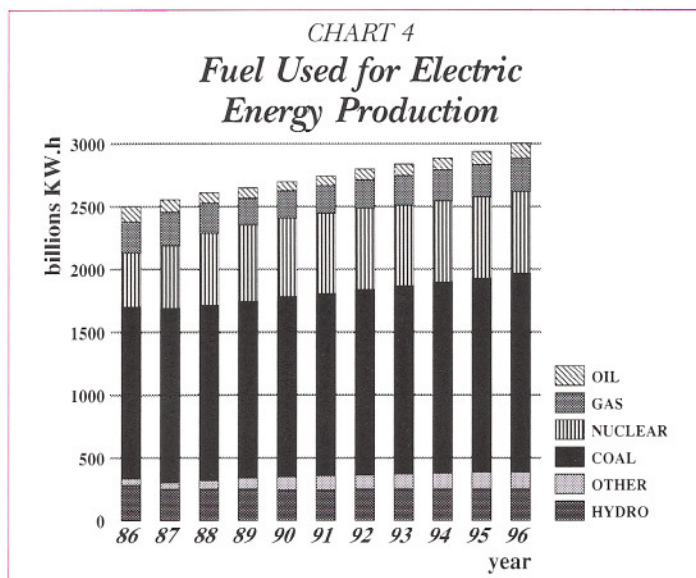
The Commission can set remedies for the actions of governments; it cannot force policy changes. Even if the offender is a lower-level government, it is the federal governments as parties to the Agreement who agree that they

could be subject to the "equivalent" retaliation. Of course, we could expect the federal governments will likely try to induce lower-level governments to comply with the Agreement, to avoid such consequences.

## Electricity and the Sharing Provisions

Some people have suggested that the treatment of electricity as an energy commodity brings new uncertainties about the operation of the provisions dealing with the declaration of a shortage. One country may (under certain provisions of the GATT) declare a shortage and impose restrictions on the export of a good. But when it does so, it must also restrict domestic use, and it must guarantee to its trading partner at least its historical share of the available supply of that good.

This provision would apply to electricity through the mechanism just described. That is, if there were an established export relationship, and exports were cut off because a government had indicated a shortage and wanted to retain the electricity for domestic use, the consultation provisions would be triggered. The intention is that national governments would





have to compensate for any discriminatory cutoff of exports.

These provisions would not apply if the cutoff occurred for technical reasons during an emergency, or if it resulted from the application of the contract terms. They would only apply if the electrical utilities cut off export customers, but not domestic customers, who were being served under similar contracts.

For a firm power exporting province like Quebec, Manitoba, or New Brunswick, this sharing arrangement reinforces their contractual commitments. Firm electricity export agreements imply that the export customer must get treatment similar to the domestic system in times of shortage.

It has been suggested that the power sharing provisions would make exporters more reluctant to sell firm power, because it limits their ability to protect their domestic system from shortages. However, for customers to treat imported power as part of the capacity of their systems, the sellers must commit themselves to deliver it. To make its sale, the exporting utility must be able to convince its firm-power customers that it will give them equal priority, if that is written into the contract. The sharing provisions of the FTA do not go that far, but they do help increase the credibility of the assurances that the selling utility must make in any case. Therefore, their effect on the likelihood of concluding these contracts is likely to be small, but positive.

### Other Effects on Trade

In addition to the sharing provisions, the FTA intends to provide more certainty and stability in electricity as in other trade areas. It is harder to make certain kinds of protectionist arguments under the FTA. The consultation and notice provisions make any restrictive trade move against Canada less likely, because they ensure that the entire political process of competing interest groups will take place. Special interests on either side cannot quietly obtain legislation or regulatory decisions that satisfy only themselves. Finally, if the negotiations on subsidy definition are ultimately successful, the FTA will help increase certainty in long-term contract situations.

Similarly, the FTA assures US buyers that Canada will not impose an arbitrary and discriminatory export tax on electricity. Canada can still impose taxes on electricity, but they can be placed on exports only to the same extent as they are on domestic consumption.

In summary, then, the FTA has enhanced the prospects for electricity exports from Canada to the United States. There is plenty of potential demand for Canadian electricity from south of the border. By removing some irritants and impediments, preventing the imposition of others, and generally providing a more stable trade climate, the Agreement will have a positive effect on the amount of long-term firm power and energy sales. That will benefit both countries, as international trade should.

### Footnotes

1. Ad Hoc Coalition on International Electric Power Trade, "Imports of Canadian Electrical Power - A Growing Concern," Cleveland, Ohio, March, 1981.
2. Mitchell Rothman, "Exporting Blue Gold: Long-Term Electricity Sales in North America," presented at the International Research Center for Energy and Economic Development, Boulder, Colorado, April 21, 1987.
3. North American Electric Reliability Council, "1987 Reliability Assessment," September, 1987, pg. 26.
4. *Ibid.*, Pg. 27.
5. Jeffrey Skeer, "The Public and Private Costs of Canadian Power in World Energy Markets: Coping with Instability", Proceedings of Ninth International Conference of the International Association of Energy Economists, Calgary, Alberta, July, 1987.
6. M. Rothman, *op. cit.*
7. *Canada-US Free Trade Agreement*, Article 905.
8. *Ibid.*, Article 1806.