

**Canada-U.S. Electricity Trade
and the Free Trade Agreement:
Perspectives from Appalachia**

F. J. Calzonetti
Department of Geology and Geography
West Virginia University
Morgantown, WV 26506

The implications for the electricity trade of the Canada-U.S. Free Trade Agreement (FTA) were hotly debated throughout the 1980s in the eastern part of North America. The debate centred on how abundant Canadian power might serve the U.S. Northeast and on the effect this power might have on domestic U.S. power production.

Although one U.S. region (New England) wanted Canadian power to avoid serious capacity shortfalls, another region (Appalachia) was concerned that it would be hurt by the declining use of coal-fired power plants. Thus, the FTA was a contentious topic among Appalachian policy makers concerned that the agreement would clear the way for Canadian electricity to outcompete domestic power plants. Yet because Appalachia had been selling large quantities of coal to Canada, opposition to any mechanism that would promote future U.S.-Canada trade was viewed as unwise. Nonetheless, Appalachian coal interests presented four arguments in opposition to Canadian power imports. First, because the United States should be as energy self-sufficient as possible, dependence on Canadian electricity would be unwise. Second, the pricing of Canadian power would extract deep economic rents. Third, Canadian power imports would restrict Appalachia's power trade with the Northeast because of the inadvertent flow problem described below. Finally, there was concern that Canada had used the

Support for this project was provided by the National Research Center for Coal and Energy at West Virginia University. The author gives special thanks to Maureen Farrow of Coopers & Lybrand, Toronto, Ontario, for providing support materials.

acid rain issue to attack coal so that it could gain more support for Canadian electricity imports (Friedman and McMahon 1984).

Although power has been traded between Canada and the United States since the beginning of the century, only recently have there been substantial imports of Canadian power. This trade accounts for about 2 percent of the U.S. electricity sales and about 10 percent of the total electricity generation in Canada (U.S. Department of Energy 1987: 2). Approximately two-thirds of Canadian power imports are sold to New England and New York. In 1988, New England purchased a net 11,156,332 megawatt-hours valued at US\$338 million, and New York purchased a net 12,193,575 megawatt-hours valued at US\$275 million. Recent drought conditions have greatly reduced Quebec's capacity to sell power, however.

The trade of electricity between the United States and Canada is influenced by the configuration of high-voltage transmission lines, the nature of electricity flows, and the prospects for the construction of new lines to move power between the two countries. Electricity flows to load areas from generation sources along all available paths according to the laws of physics, regardless of who owns the transmission lines. Because electricity cannot be directed in the interconnected AC system, problems of "looping flow" or "inadvertent flow" arise, whereby power passes through systems not involved in the transaction or benefiting from wheeling charges.¹ The problem of looping flow was first identified in the early 1980s, when large quantities of midwestern and Appalachian power were being purchased by eastern United States utilities and Canadian power imports began interfering with the west-to-east power trade across Pennsylvania. A utility study showed that a contract between Ontario Hydro and the New York Power Pool for the sale of 1,000 megawatts of power to New York would result in about half of the electricity circulating through Michigan and across West Virginia and Pennsylvania (ECAR/MAAC Coordinating Group 1985: 6).

Electricity and the FTA

The General Agreement on Tariffs and Trade (GATT), negotiated in 1947, is a general instrument of multilateral trade establishing general rules for fair trading. The pact lowered tariffs and set out rules prohibiting the nations that signed the agreement from establishing limitations on imports. During the 1950s and continuing throughout the 1960s, 1970s, and early 1980s, both the United States and Canada moved away from the spirit of GATT by using trade policy to protect

1. Wheeling involves using the transmission facilities of one system to transmit power produced by another supplier for sale to a third buyer.

domestic energy interests. In the 1950s, as oil production from inexpensive overseas fields increased, there was pressure to protect both the domestic U.S. and Canadian oil industries. Oil import quotas were established in the United States to maintain domestic production, and Canada, acting on the recommendations of the Borden Royal Commission on Energy, established a national oil policy that limited oil imports into eastern Canada. Although inconsistent with GATT policy, these actions were justified under a loose interpretation of "national security". As oil prices rose during the 1970s, both countries enacted price controls to fight inflation. But during the 1980s—a decade of energy surplus—the United States, followed by Canada, moved toward a free market approach by taking steps to deregulate prices and eliminate trade barriers in the belief that "market forces" would best allocate resources. The Reagan administration decontrolled oil and natural gas prices and dismantled most of the Carter administration's energy policy controls. In Canada, the Trudeau government had maintained control over energy and the energy trade by establishing the National Energy Programme, which controlled domestic oil and natural gas prices and taxed and restricted energy exports. But by 1984, Canada was following the U.S. free market lead, and the new Progressive Conservative government began dismantling the National Energy Programme. The time was ripe for a reconsideration of trading agreements, and the FTA, which reaffirmed the general trade rules established under GATT, was quickly negotiated.

Essentially, the FTA opened up the large U.S. market to Canada, but Canada had to make certain concessions—one of the most important of which was related to energy policy. The energy trade, which could not be separated out from other trading considerations without imperiling the entire bilateral trade agreement, had to follow the same GATT trade rules that governed trade in other commodities. When the FTA opened the door for Canadian imports of electricity to the United States, Canadian developers, on the one hand, needed guarantees about long-term access to the large U.S. market before constructing large energy projects, and U.S. electric utilities, on the other hand, needed assurance of long-term access to Canadian power before abandoning the idea of constructing new generating facilities (projects that might take a decade or more to complete) in favour of relying on imported electricity.

Articles 901-908 of the FTA contain the essential energy provisions. Article 901 may be the greatest victory for Canada in the energy area because it establishes electricity as a product subject to inclusion in the agreement, whereas GATT treats electricity as an intangible (Carmichael 1988: 8). The FTA restates GATT rights and obligations and prohibits restrictions on energy trade, except for those

related to supply disruptions, the conservation of exhaustible resources, and national security, among other things. The GATT provision of "national treatment" is reaffirmed in Article 902, which provides that each country's domestic laws and regulations should not discriminate between domestic and foreign goods. But the FTA goes further in Article 902 by applying "national treatment" at the state and provincial levels, thereby calling for state and provincial treatment of imports that is "no less favorable" than the most favourable treatment that the state or province provides to any domestic sources (Battram and Lock 1988: 353). Thus, Canadian power imported into New England should be treated no less favourably than electricity produced in the Appalachian states. Article 903 states that both countries will not impose any export tax or duty unless the same tax is imposed on energy consumed domestically. As there is no provision in GATT prohibiting export taxes, this provision of the FTA is aimed specifically at the Canadian tax on oil exports to the United States (Battram and Lock 1988: 357) and constitutes another energy concession made by Canada to win access to the large U.S. market.

The issue of "proportional access" is addressed in Article 904. The FTA goes beyond GATT in restricting the exceptions that can be used to limit energy exports. Article 904 specifies that any restriction in exports may not (1) reduce the proportion of the good exported relative to the total supply of the exporting party (a reduction in supply must be shared proportionally between the domestic and export market), (2) impose a higher price for the exported good than the price of the good sold domestically, and (3) require the disruption of normal channels of supply (Battram and Lock 1988: 358). This means that both countries can restrict exports in the case of a shortage but cannot reduce the share of the total quantity of the energy good that is exported (Carmichael 1988: 8). Thus, if drought conditions reduce Canada's electricity output, U.S. customers might face the same proportion of supply reduction as Canadian customers. Canada cannot halt exports to the United States so that Canadian demand can be given priority and served first. Furthermore, Article 908 notes that the International Energy Agency oil-sharing agreement supersedes the FTA when energy must be shared under conditions of scarcity (this will not affect electricity). The International Energy Agency was formed by oil-consuming countries following the OPEC oil embargo as a means of coordinating energy planning and, more specifically, oil shortages.²

2. Just to complete the picture, Article 905 provides both the United States and Canada with the right to formal consultation over any regulatory change that distorts energy trade, and Article 906 addresses the importance of fiscal incentives for maintaining oil and gas reserve levels.

As noted earlier, in the 1950s the national security issue was cited by Canada to restrict energy imports and by the United States to avoid becoming too dependent on Canadian electricity. Both GATT and the FTA provide for exceptions related to security, and the GATT exceptions have been used to limit oil imports in both countries. The FTA, however, greatly restricts the use of national security exceptions: Article 907 states that imports can be restricted only in the event of a national emergency involving the armed forces. Thus, the FTA destroys the "national security" argument and excludes enactment of any U.S. federal policy that discriminates against Canadian energy imports on the grounds of national security.

This "national security" argument, which was being used by certain Appalachian interests as a reason for U.S. utilities avoiding becoming dependent on Canadian power imports, was no longer valid under the FTA. New England utilities, however, continued throughout the late 1980s to entertain proposals from Appalachia for "coal by wire". The pricing of Canadian electricity imports may have led New England interests to seriously consider Appalachian power purchases. The FTA enabled Canada to strike the "least cost alternative" pricing test requirement for a licence to export electricity. This test stated that the "export price would not result in prices in the country to which the power is exported being marginally less than the least cost alternative for power and energy at the same locations within that country" (Battram and Lock 1988). In the past, New England has had few options for increasing the availability of power. Beyond conserving electricity, it could increase supply through new local power plants (if sites could be found), or it could purchase power from Appalachia (over new lines). Thus, "coal by wire" was a reasonable least-cost alternative for New England utilities.

Conclusion

The Canada-U.S. Free Trade Agreement has made Canadian electricity imports as reliable legally as domestic electricity and has eliminated other problems, such as pricing mechanisms, that in the recent past discouraged reliance on Canadian power. Canadian power is now capable of competing with other local alternatives and against power supplied from other U.S. regions to win contracts. But has the FTA resulted in fundamental changes in the way Canadian power is viewed, thereby enabling Canadian power to flood into the United States and outcompete Appalachian power? Probably not, although the agreement has eliminated some of the concerns relating to power trade across the border. The elimination of export taxes, the inclusion of provisions for the national treatment of exports, the clarification of

restrictions stemming from national security, and the pricing agreements all represent important concessions that open the door of the vast U.S. market to Canadian electricity imports.

But the FTA does not alter two other important electricity trade factors. First, the agreement has not affected the need to construct new transmission facilities in the United States in order to transmit power beyond the northern tier of states, nor has it altered the situation of transmission access (this is, however, a topic of intense debate in the United States; see Calzonetti et al. 1989). Although there have been discussions between Canadian hydro representatives and utility managers as far south as Maryland, contracts cannot be negotiated until new lines are built or access to transmission becomes possible. The impact of existing connections between Canada and the United States on systems not party to the contracts has been large. Any new lines, if they can be built, must be carefully engineered for system reliability. Second, utilities in the United States have only begun to consider using purchased power to help with their capacity problems. As recently as 1986, 72 percent of Canadian power sales to the United States were interruptible economy transactions, but there is a move toward firm power contracts. In the past, U.S. utilities tried to be as self-sufficient as possible in order to guarantee a reliable supply of power. Although some utilities are beginning to look to neighbouring utilities and to non-utility generators for capacity, they have little interest in looking across several utility jurisdictions for power, even when the cost of that power is attractive. Canadian power must cross several jurisdictions, and wheeling charges will increase its price, but it is the uncertainty relating to looping flow that will ultimately hinder the sale of Canadian power deep into the United States.

All this being said, as U.S. utilities gain experience with Canadian power imports and as Hydro-Québec begins meeting U.S. transmission criteria, Canadian resources will be given serious consideration as a supply alternative. Moreover, if the global environmental impacts of coal combustion lead to U.S. regulations restricting the use of coal in power plants, Canadian hydroelectric power will become a prime target for development. From the perspective of Appalachia, however, as utility companies in the Northeast gain confidence in Canadian power and begin to rely on it, the opportunity for Appalachia to supply this region with a large volume of coal-fire-produced electricity may be lost.

This discussion would not be complete, however, without noting that in the recent past Canadian energy projects, which are supported by the government, were easier to complete than U.S. energy projects. But growing opposition to the dedication of large areas of Canadian wilderness to producing power for the United States may make it as

difficult to expand capacity in Canada as it has been in the United States.

References

- Batram, Shelly P., and Reinier H. Lock. 1988. "The Canada/United States Free-Trade Agreement and Trade in Energy", *Energy Law Journal*, 9:327-387.
- Calzonetti, F. J., et al. 1989. *Power from the Appalachians*. Westport, Conn.: Greenwood Press.
- Carmichael, Edward A. 1988. "Energy and the Canada-U.S. Free Trade Agreement", *Trade Monitor*. C. D. Howe Institute, Toronto.
- ECAR/MAAC Coordinating Group. 1985. *ECAR/MAAC Interregional Power Transfer Analysis*. Allegheny Power System, Greensburg, Pennsylvania.
- Friedman, J. M., and M. S. McMahon. 1984. *The Silent Alliance: Canadian Support for Acid Rain Controls in the United States and the Campaign for Additional Electricity Exports*. Chicago: Regnery Gateway.
- U.S. Department of Energy. 1987. *Northern Lights: The Economic and Practical Potential of Importing Power from Canada*. Washington, D.C.: U.S. Department of Energy.