



## **Bilateral issues related to energy – Competing Electricity Options**

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### **Background/Introduction**

The electricity sector gained a higher profile with the recent California electricity debacle, the Enron scandal, the August 2003 Northeast blackout and the market reforms implemented in many American states and Canadian provinces. The situation of the last years contrasts with the previous decades of ambitious government-led programs, particularly in hydro and nuclear power. At that time, the general public was less involved and the private sector could not take as much initiative.

Although electricity sector crises in California and Ontario lessened the momentum of the liberalization trend, competitive pressures in the electricity business remain strong. There are at least four main sources of pressures:

- (1) New technologies not only allow electricity to be generated from more various fuel sources and in a wider range of production scales, but progress made in information systems enables exchanges to take place between more market participants and on shorter notice. The traditional vertically integrated utility appears as a dinosaur in this context.
- (2) Regional price diversity, inherited from isolated systems based on different technologies, are more difficult to justify to consumers. When they feel they are overcharged for electricity, consumers –industrial ones in particular– exert political pressure that lead in some cases to their relocation.
- (3) Important international forums and institutions, such as the OECD, the World Trade Organization, the World Bank and the International Monetary Fund, question and redefine the government's role in all sectors, including electricity. Some national think tanks also promote free market concepts. In this context, it becomes increasingly harder for governments to avoid reassessing the regulation of their electricity sector; they are often led to substitute market principles to centralized planning.
- (4) Finally, environmental issues call for new policies compatible with the economic imperatives of the society. In many industrial settings, the best way to integrate environmental action is to design policy tools in a market framework, where available economic incentives lead to pollution reduction. In electricity, a market

where environmental constraints are well integrated would give a competitive advantage to green technologies.

However, the context of U.S. and Canadian governments' choices is made more complex by some additional factors. First, electricity does not fall within federal jurisdiction (though inter-state and inter-provincial transmission does), and the many state and provincial stakeholders are not willing to lose power over the sector. Second, energy independence and investment adequacy issues have put nuclear power back in the debate. This cannot be done without government's involvement. Indeed, under the Bush administration, new fiscal incentives for nuclear production have been put in place, as well as new funds for research in this field. In Canada, the Ontario government is considering new nuclear developments, following the March 2004 report on the future of Ontario Power Generation. Third, and finally, citizens are not wildly enthusiastic, to say the least, about market reforms bringing fluctuations in electricity prices and possible privatization. Much uncertainty remains concerning the benefits of liberalization in the electricity sector and the distribution of those benefits, especially in the hydro-rich provinces of Québec, British Columbia and Manitoba.

### **Key Issues**

In this context characterized by intense pressure for change but important inertia factors (division of political power, need for government intervention, uncertainty of liberalized market), the U.S. and Canadian electricity sectors face four critical issues.

- **Commercial integration.** If electricity exchanges among different jurisdictions have always taken place, it was through long-run "firm" energy sales and limited hourly sales. Engineers fixed the price of these exchanges more than brokers. The opening of active electricity trading places across the U.S. and Canada changed that and allowed a clearer public market price of electricity to be available. However, these trading places do not cover North America uniformly, and market manipulations always threaten to disrupt prices in some jurisdictions. Commercial exchange of electricity in these market places is still in its infancy, and different market designs (rules of the electricity trading game) coexist.

The various commercial systems have to be integrated if a harmonious sector is to emerge, where adequate price signals are available to investors. The current stage of commercial hesitancy is not optimal for new investment in production capacity.

- **Physical integration.** Part of the problem of commercial integration is the lack of trading possibilities, due to insufficient transmission capacities. The transmission system developed in North America was not meant to support a high volume of exchanges, but rather to allow each jurisdiction to count on some limited support from neighbors, mostly for reliability purposes. With the increasingly limited mandate of vertically integrated utilities, investment in transmission infrastructure became sparse, leading to a physical system that does not keep up with the commercial reality.

The challenge of physical integration is threefold. First, the appropriate financial mechanisms to allow investment to be done are still to be found. Second, upgrades of the transmission network require long corridors of lands, extremely

difficult to obtain, with numerous “NIMBY” syndromes to fight. Third, leadership in this field is hard to establish, because of the large number of stakeholders involved.

- **Regulatory integration.** Although electricity sector liberalization is often presented as “deregulation”, new regulatory institutions and powers always appear in the reform process. In order to level the playing field (needed for commercial integration) and to overview the development and operation of the transmission system, a unified regulatory system for the electricity market has to appear.

Canada has no equivalent of the U.S. Federal Regulatory Energy Commission (FERC), which tries to progressively create a uniform electricity market across the U.S. by favoring market access and common rules. However, much resistance is met in various states, where the influence of the federal regulator is not always welcome. Integrating Canada and U.S. regulations, when no two states and provinces are similar, is a requirement for a well functioning market, but the political challenge it represents is great.

- **Environmental policy integration.** Electricity production has a huge impact on the environment: CO<sub>2</sub> emissions from coal power plants, nuclear waste and risks from nuclear power plants, flooding from hydropower dams. No mainstream technology is harmless. Furthermore, whereas electricity systems can be clearly located geographically, environmental impacts are global. Any optimal development in the electricity sector will need to rely on harmonized environmental policies, otherwise artificial incentives for certain types of technologies will be present in different jurisdictions. This creates two problems. First, benefits of one environmental policy can be destroyed if another jurisdiction follows a different policy (e.g. greenhouse gases need to be reduced collectively). Second, once the electricity is produced, it can travel to other jurisdictions through the transmission network irrespective of the environmental constraints present in the consuming region. Environmental regulation may be ineffective, in practice, if access to electricity from other jurisdictions is allowed (e.g. a nuclear –or large hydro– restrictions in a jurisdiction are ineffective if power can be imported from another jurisdiction).

The development of a common environmental policy is therefore critical to the creation of a sustainable electricity sector, both from a commercial and environmental standpoint.

Confronted with these key issues, Canada will certainly suffer from U.S. hegemony in some aspects of the regulatory and environmental spheres. The regulatory power of the U.S. FERC is even greater when one considers that no Canadian equivalent exists (the National Energy Board having close to no responsibility in the electricity sector). With respect to environmental issues, the weight of U.S. actions can swamp any Canadian attempt to adopt strong environmental regulation. However, the importance of internal disagreement in the U.S. (between states and among stakeholders) could help Canada to play its cards and achieve a satisfactory outcome. Furthermore, on commercial issues, since a few Canadian provinces are hydroelectricity-rich, some real net gain could result

from progress in integration. On physical integration, as issues have such important local content (because of the location of transmission lines), no country has an *a priori* advantage.

## Choices for Canadians

Three options are open to Canadians: (1) status quo with local adjustments; (2) a Canadian electricity sector initiative; and (3) a regional Canada-U.S. integration scheme.

- **Option 1: Status quo.** Because of provincial losses and federal fears, Canadians could decide to continue to develop their own provincial electricity policy. The provincial regulation would largely stay in isolation of neighboring U.S. states and other Canadian provinces. This would be in exact continuation with the past. Some local adjustments would take place to benefit from the more accessible integration gains (such as hydropower arbitrage opportunities in the U.S.), but no major initiative would be supported.

Regional price disparities would largely remain, market inefficiencies could flourish due to isolation from competitors and environmental policy at the continental level could hardly be consistent due to regional disparities. However, control of the sector would remain in local hands, and large-scale crises could not spread as fast, because of the relative isolation of each electricity market.

- **Option 2: Canadian integration.** Provinces would initiate a dialogue to coordinate at the federal level their disparate electricity sectors. A Canadian transmission operator would appear, to promote the harmonization of markets across Canada and optimize the current production capacity usage. Investment would also be made in consideration of Canadian resources and needs (and no longer in terms of provincial resources and needs alone). For instance Québec's hydraulic potential could help supply the Ontario market, avoiding the current dilemma in this province between coal, natural gas and nuclear power.

A new Canadian model would emerge where the electricity sector benefits from the strengths of the different provinces, and where coherent environmental and commercial policies are developed. This integrated sector could more likely resist a "regulatory take-over" by the Southern neighbor. This could ensure that market principles are implemented in Canada in harmony with stability and environmental considerations.

- **Option 3: U.S. integration.** Because no Canadian agreement could be reached and because some provinces want to be more active in the U.S. market, Canadians would let the FERC and the U.S. Department of Energy progressively set the regulatory context in their electricity sector. Differently integrated regional blocs would emerge, following current groups of states and provinces (now being organized in "regional transmission organization (RTO)" regions by the FERC). There would be more North-South integration than East-West integration.

Electricity markets could be more aggressively competitive, with less coordination on regulatory and environmental issues. Some gains due to a strong local competition could arise, at a low transition cost (as minimal coordination would occur). However, risks of market disruption would be greater (high price fluctuations – limited investment), as regulatory institutions would remain local and –to some extent– weak.

## Potential Flash-Points

These three options could unfold differently as negotiations progress in other sectors. Three flash points have been identified.

- *WTO – Free Trade Area of the Americas (FTAA) 2005 deadlines.* As energy services are very likely to be added to the GATS list of services (in which countries make liberalization commitments) in 2005, the U.S. and Canada may have to move faster towards a fully liberalized electricity sector. Furthermore, FTAA negotiations could have an accelerating effect on liberalization, as this regional free trade agreement seeks the inclusion of more service sectors in the sectors open to international competition.
- *Kyoto implementation.* The details of the implementation of the Kyoto agreement will have an impact on electricity production, which is a heavy greenhouse gas emitter when coal and natural gas are used. Hydro, nuclear and wind power will benefit from a competitive advantage (with their low emissions) that will make electricity trade more attractive for both sellers and buyers. New integration efforts could result from Kyoto, to allow the optimal exchange of electricity to be made.
- *First Nations negotiations.* New hydropower projects (especially in Québec) and all Northern developments require the participation of First Nations, as well as the development of transmission lines, when passing over aboriginal territories. Ongoing agreements and negotiations will shape future development in the electricity sector.

## Options/Recommendations

We should press for the second option, “Canadian integration”, to maximize Canadian interests and strengthen ties among provinces. Through a federal (pan-Canadian) initiative, this option would, in effect, only require a major reform of the transmission system. A new Canadian transmission authority would be created and provincial generation companies, distributors and retailers could continue to operate with some provincial specificities. The market would nevertheless be more widely Canadian, allowing many efficiency gains in investment and production to be made, translating in a healthier electricity sector and a stronger society. Environmental regulation would also be more easily implemented as the market would be more uniform.

Ties with the U.S. would still develop, but a stronger Canadian position would be put forward, allowing for the possibility for Canada to better defend its interests.

The major obstacle in this option is the transfer of a “provincial” competence to the federal, or pan-Canadian, level. Given the strong tradition of electricity policy in each province, this is not a small challenge. However, the important commercial and environmental benefits made available to everyone will certainly convince consumers, voters and politicians to embrace such an option.