

## OECD ECONOMIC SURVEY OF CANADA 2004:

### ELECTRICITY SECTOR

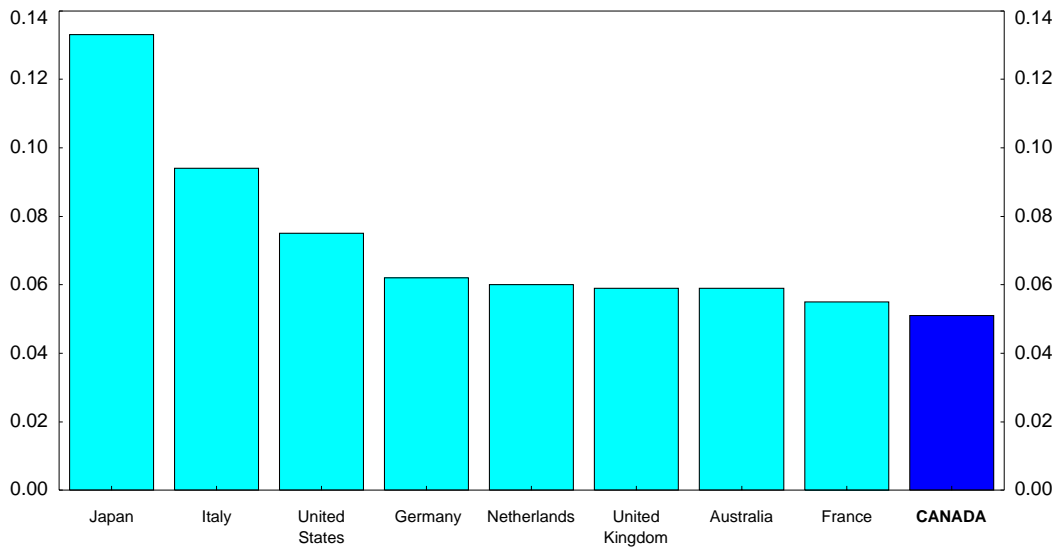
*This is an excerpt of the OECD Economic Survey of Canada, 2004,  
from the section on electricity in Chapter 2*

1. Electricity prices in Canada are among the lowest in the OECD (an indication is provided in Figure 2.9). The low prices partly reflect Canada's low costs, emanating from hydro-electric power. Firms that are government-owned may also face a lower cost of capital. Tariffs in most provinces are regulated on a cost-of-service (or cost-plus), historical-cost basis. It may also reflect regulatory choices and has the undesirable side effect of discouraging investment in new capacity that will be increasingly needed in coming years. Despite low average prices, and reflecting the lack of both performance-based rate making (*e.g.* price-cap or RPI-X regulation) and competition, Canadian mark-ups in electricity, gas and water sectors, as noted earlier in Figure 2.4, are the highest amongst OECD countries for which data are available.

2. Both industry structure and policies vary considerably across provinces. Each province has a separate regulator. Provincial regulators in some cases operate at arms-length from the government, in other cases they are part of the policy branches of their respective governments (IEA, 2004). Few provinces have introduced major reforms. Only two provincial governments — Alberta and Ontario — have established markets characterised by wholesale and retail unbundling, although their specific market designs differ.<sup>1</sup> In Ontario and Alberta, an independent system operator (ISO) sets and administers policies for grid interconnection, transmission planning and spot market operation. The remaining provinces are largely characterised by vertically integrated, provincially owned utilities, which offer bundled services at regulated rates to consumers (Global Competition Review, 2004*a*). Although some provinces generally consider reform of the electricity sector to be necessary, reforms have been aimed at inducing private-sector investment and protecting access to US electricity markets while avoiding full competition in generation and retail markets (*e.g.* establishing wholesale access and, in some cases, an open-access transmission tariff). While relatively small generators exist, they seldom operate in direct competition with the dominant Crown corporation. Municipally owned distributors are common.

**Figure 2.9. Average electricity prices**

US dollars/kwh  
May 2002



Note: Figures are based on an average demand load of 831 (kva) and consumption of 222,000 (kwh) per month;  
Source: KPMG (2002).

3. In their attempt to create competitive electricity markets, Alberta and Ontario took different paths. Ontario set a timeline for gradual divestiture of its Crown corporation plants, while Alberta chose a more proactive approach to creating competition by holding public auctions for control over the generation capacity of incumbents' facilities. Electricity market liberalisation in Alberta and Ontario both occurred at times of increased prices and volatility. However, measures taken in Alberta and Ontario to cope with electricity price hikes provide some useful insights, particularly in terms of government intervention and preserving incentives for investment (Conference Board of Canada, 2003b) (Box 2.3).

4. In the long term, the introduction of competition should improve performance in the sector, but provinces are politically reluctant to undertake reforms, especially after what happened in Ontario. However, both the success of reforms in Alberta and lessons from the mistakes in Ontario could be used to guide policymakers. If provinces are to move ahead with reforms, then unbundling is crucial in establishing competition in the sector, since vertically integrated incumbents can impede the functioning of the market through cross-subsidisation and discrimination in network access (Gonenc *et al.*, 2001; EC, 2003). Insufficient unbundling may form a barrier to competition, and numerous studies argue that legal and management unbundling are not enough and that further separation is warranted.<sup>2</sup> In the absence of restructuring, competitors and potential investors will be deterred by concerns regarding the level of commitment by provincial governments to competitive electricity markets and the potential conflicts of interest arising from the fact that provincial governments are often incumbents' sole shareholder.

5. With a view to improving the overall competitiveness of the Canadian electricity industry, the federal government also has an important role to play and could be more active in advocating electricity market reforms. Inter-provincial electricity flows account for about 10 per cent of total Canadian electricity consumption. Most provinces have agreed to provide cross-provincial transmission access in accordance with the AIT. However, while federal and provincial energy ministers negotiated the text of an Energy Chapter in 1998 to be a part of the AIT, passing the text on to trade ministers to conclude, this chapter has yet to be approved.<sup>3</sup> The development of inter-provincial and international electricity trade could be an important factor in bringing about new entry and ensuring that effective competition develops within provincial and regional markets. There is some scope for the federal government to be more active in

promoting the expansion of transmission capacity which would support electricity market reforms by promoting the development of a more integrated Canadian electricity market.

### Box 2.3. Lessons from Ontario's and Alberta's electricity market reforms

**Ontario** passed the Energy Competition Act in 1998 to restructure Ontario Hydro and to introduce competition in the province's electricity market. Ontario Power Generation Inc. (OPG), which has assumed all of the generation assets of the former vertically integrated Ontario Hydro, is a provincially owned corporation that generates three-quarters of the electricity in Ontario. Hydro One, also government owned, is a separate company that has assumed the transmission and distribution assets of the former Ontario Hydro. Hydro One provides non-discriminatory open access and transmits wholesale electric power to municipal utilities that in turn retail it to customers in their service areas. To avoid abuse of dominant position by OPG, the Market Power Mitigation Agreement (MPMA) under the Act required OPG to divest 4 000 MW of its generation assets (other than nuclear and hydroelectric) by 2006 and reduce its overall share of the market to 35 per cent by 2012.

In Ontario, while the process of establishing competition took longer than expected, all customers had the right to choose their supplier of electricity by May 2002. Prices during the spring were lower than regulated prices, but a combination of an unusually hot summer and delays in bringing nuclear generating capacity back on line led to prices that were much higher than anyone had anticipated. To reduce the impact of price hikes on consumers, the Ontario government capped retail prices for about half of the market at a price well below the cost of power and the entry cost of new plant. The wholesale market was left in place, with the government obligated to make up any difference between the wholesale cost of electricity and the frozen retail price. This resulted in a need for substantial government subsidies and a reluctance of investors to move into the Ontario market. Reforms which aim to correct some of the past failures are currently being discussed and put in place by the new government. Concerned about the impact on the province's finances, the new government has raised prices to cover costs. While preserving elements of competition by measures such as putting contracts for new generation capacity out to competitive tender, the draft legislation proposed by the Ontario government in June 2004 would terminate Ontario's previous plan to divest most of the province's power generation assets to private control. The proposals also include the regulation of prices for some consumers, the regulation of the output from power plants owned by Ontario Power Generation (OPG), an expansion of the role of the Ontario Energy Board (OEB) as the independent sector regulator, and the creation of a new agency, the Ontario Power Authority (OPA), with a broad mandate concerning supply and conservation measures.

In **Alberta**, most generation and transmission assets have historically been privately owned. In the mid-1990s Alberta deregulated its electric power industry, establishing open transmission access and a competitive power pool. An independent regulator, the Alberta Electric Utilities Board (AEUB), was created to regulate the development of the market. Transmission facilities are the property of investor-owned companies, and the ISO provides non-discriminatory transmission access and is responsible for transmission system planning. Since 1 January 1996, all electricity has been sold into a power pool, and retail competition was introduced in January 2001, with consumers free to purchase their electricity from any licensed retailer.

The retail market in Alberta was opened at the height of the California electricity crisis, when Western North American electricity and natural gas prices were very high. Alberta, as part of an interconnected market which includes California and the north-western United States, experienced very high market prices. Most small consumers were purchasing electricity through their local distributors, who in turn were purchasing much of their needs at spot prices. These distributors applied to the regulator to raise retail electricity prices so as to pass through higher costs to customers. To cope with the situation, the government placed a one-year temporary retail price cap on electricity for 2001. But, unlike Ontario, the government set the price cap at a relatively high level, well above long-run marginal cost, in order to preserve a signal for new investment. Investment in new generating capacity has continued, and wholesale prices in 2002 declined to pre-2000 prices, reflecting the new generation capacity that has since come on line (IEA, 2004).

## NOTES

1. These two provinces represent about 40 per cent of the total electrical load in Canada. This percentage is comparable to the electrical load in the United States having access to competitive markets.
2. For example, see Newbery (2002*a* and 2002*b*).
3. Once approved, the Energy Chapter will provide for non-discriminatory, open transmission access across the provincial boundaries and establish dispute resolution procedures. However, Canadian provinces with major inter-provincial and international cross-border electricity trading have adopted the US FERC's open-access transmission tariff and thus already provide open access to US markets.

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