

## Alberta's New Competitive Electricity System

by Leigh Hancher\*

In January 1996, the province of Alberta became the first jurisdiction in North America to introduce a competitive framework for its electricity industry. By the end of this year, the Energy and Utilities Board (EUB) is expected to publish a key decision on rates and tariffs under the new structure for the companies under its remit. A public hearing on this issue commences in late July 1996. This summer should also see the publication by the Alberta Department of Energy of guidance on when and how existing generation units will be exposed to competition. These two events will determine the shape, speed and direction of further reform to the new system.

This article describes Alberta's competitive framework for electricity, examines how it has performed to date and considers prospects for future reform. Many features of the Alberta model are quite standard to those familiar with competition-based electricity systems, even if their application in Alberta is often somewhat unique. Other elements of the new system, however, are more novel. In particular, the mechanisms designed to deal with the problem of stranded benefits and investment are worthy of attention. The Alberta experiment is being closely followed in British

Columbia and Ontario, both currently contemplating electricity deregulation and even privatization.

### The Former System

Alberta's electricity industry is unusual in that it consists of a mix of investor-owned and municipally-owned utilities, including the largest investor-owned utility in Canada – TransAlta Utilities Corporation. Most other provinces have single, publicly-owned electric utilities providing generation and transmission. Until January 1 1996, four vertically integrated utilities generated, transmitted and distributed electricity: Alberta Power Limited, Edmonton Power, the City of Medicine Hat and TransAlta. In addition, several smaller municipal distribution utilities purchased their power from TransAlta, which supplies 60% of the province's requirements. Independent power producers (IPPs), accounting for about 10% of total generation, sold their power to the existing utilities.

The entire system of generation, transmission and distribution facilities is known as the Alberta Inter-connected System (AIS). The grid is connected with British Columbia to the west and Saskatchewan to the east. Power export to the United States takes place via British Columbia. The utilities each have a

right and obligation to provide electric service to consumers in their respective service areas.

Between 1982 and 1995, generation and transmission costs were pooled and averaged in accordance with the *Electric Energy Marketing Act*<sup>1</sup> (EEMA). The original purpose of the EEMA system was to create a fair and equal wholesale rate for consumers, and to encourage

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### Résumé

La province de l'Alberta est la première juridiction en Amérique du Nord à avoir instauré, au mois de janvier 1996, un régime compétitif pour son industrie électrique. La *Electric Utilities Act* établit une nouvelle structure fondée sur la séparation des fonctions de production, de transmission et de distribution, un marché de gros compétitif pour l'électricité et le libre accès aux installations de transmission. Cet article décrit les principales caractéristiques de ce nouveau système, évalue ses résultats jusqu'à présent et envisage les perspectives de réforme. L'auteur suggère que l'évolution de ce système dépendra en grande partie des directives en matière de réglementation des installations actuelles ainsi que des décisions sur les taux et tarifs.

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new industry to locate throughout the province. This system attracted considerable criticism, especially from TransAlta which claimed that it was subsidizing expensive generation for other parts of Alberta. An EEMA review process, initiated in 1992, was eventually overtaken by the radical reforms introduced by the *Electric Utilities Act*.<sup>2</sup> The declared purpose of this reform was to preserve the "Alberta Advantage" of competitive electricity prices – among the lowest in Canada – but to establish a mechanism that guaranteed fair prices from a province-wide perspective.

### **The Electric Utilities Act**

The new Act establishes a framework that is fleshed out by regulations. Adoption of all these measures has been accompanied by extensive consultation with stakeholders through an advisory committee representing the utilities, consumer groups, IPPs and environmental groups. The intensive two-year consultation process appears to have helped eliminate most of the initial opposition to the government's plans. The new structure is based on three principles: unbundling, a competitive power pool, and open system access transmission.

#### **(1) Unbundling**

While ownership of the vertically integrated utilities remains untouched, s. 48 of the Act requires separate accounts for generation, transmission and distribution to be submitted to the EUB for its approval. In addition, the three main utilities have agreed, via a shareholders' agreement, to transfer the management of their transmission facilities to the Grid Company of Alberta (Gridco). Gridco has in fact assumed the role of Transmission Administrator (TA) for the first year of the new system's operation, although the government has announced that this role will be put out to tender at the end of 1996.

The Act prohibits municipalities from generating their own power and selling it directly to customers within their

borders – the so-called Edmonton Power clause. All electricity must be sold to the pool.<sup>3</sup> Section 45(6) also requires strict separation of any (future) interest a municipality holds in a generating unit from the municipality itself.

#### **(2) The Power Pool**

Existing utilities, IPPs and importers compete to sell power in the wholesale market as well as to supply new generating capacity. For an interim period, however, distributors are obliged to conclude so-called "legislated hedging contracts" for existing generating units. This system is reviewed below. All generators and importers must sell energy through the pool and distributors must purchase from it (s. 13).

At this point in time, only the entitled distributors<sup>4</sup> and exporters can purchase electricity. Several power marketers have, despite opposition from the provincial and investor-owned utilities, obtained export permits from the National Energy Board (NEB).<sup>5</sup> TransAlta has also set up its own independent power marketer – TransAlta Enterprises. Service area boundaries and distribution franchises are expressly unaffected by the Act.

The pool serves as an hourly spot market for energy. A single price is declared for each hour based on a weighted average of the prices of the most expensive units dispatched (or demand bids curtailed) to meet load in that hour. The pool is administered by an independent Power Pool Administrator, responsible for operating the pool and for financial settlements (s. 11). A System Controller – currently TransAlta – manages dispatch, gives direction to the owners of transmission facilities as required for the safe, reliable and economic operation of the AIS, and ensures provision of adequate levels of system support services as determined by the TA (s. 12).

#### **(3) Open System Access Transmission**

All parties that are entitled to supply

energy to and remove it from the pool are also entitled to non-discriminatory access to the grid for wholesale transactions (Part 3 of the Act). The grid is coordinated by the TA – who contracts with the owners of facilities to provide transmission services and ensures the necessary ancillary and support services.

Tariffs to recover system access costs from distributors and generators are established by the TA, subject to regulatory approval by the EUB. All aspects of the TA's activities are further subject to review by the Electric Transmission Council. The latter has established Tariff and Mediation Committees, the first task of which was to reach consensus on the main principles for designing tariffs. Interim electric tariffs and terms and conditions were published in late December 1995 and were approved by the EUB. A definitive decision is expected in late 1996.

Distributors currently pay "postage-stamp" – or uniform – rates for transmission. The transmission tariff for new generators, however, will be location-based so that rates will encourage them to locate where they will minimize transmission costs for the system as a whole. Importers and exporters pay a fixed system access fee for all contracts to offset the costs of administering them. A "transmission transfer charge" (\$/Megawatt hour [MWh]) is posted daily by the TA for service for the following day.

### **Stranded Costs and Legislative Hedges**

A novel feature of the new system is its approach to the stranded benefits and investment issue.<sup>6</sup> The mechanism for ensuring that the costs and benefits of existing units are fairly shared by all consumers throughout the province is a set of legislated financial hedges between distributors and owners of existing generating units. The specifics of the hedges are determined through a combination of regulations and EUB decisions.

In essence, the system aims to ensure that distributors pay a price for existing units which is close to the variable costs of generation and, in addition, pay reservation payments to cover the fixed costs of existing generation. In return for this coverage, the regulated generators are obliged to provide a hedge – or obligation value – for the hourly pool price to distributors. The net cost of wholesale power to the distribution company is therefore the pool price, plus the reservation price, less the obligation value.

As the net cost of purchased power to distributors is expected to exceed the average pool price, legislative hedges imply a cash flow from distributors to generators. However, if the net pool price rises – as the government anticipates it will around the year 2000 when new, predominantly gas-fired capacity will be added – then net payments will flow in the other direction. The Act contains a “bumpless clause” which provides that the allocation of costs of existing generation and transmission among the distribution companies should not lead to significant differences from the old EEMA system (s. 38(1)).

These legislated hedges are eventually to be phased out and replaced by commercial arrangements to cover new generating units, although no precise timetable is envisaged. Section 41 lays down a voluntary procedure for removing generating units from regulated service, but these must be approved by *all* the owners of the distribution systems and the EUB. Before granting approval, the EUB must be satisfied that the agreement is in the interest of all consumers in the province. If satisfactory agreement cannot be reached to remove units from regulated service on a voluntary basis, s. 42 allows the government to enact rules governing investment at existing sites as well as to lay down principles for the removal of existing plants from generation.

### **The Role of Regulation**

The *Electric Utilities Act* certainly does not spell the end of cost-of-service

regulation in the Alberta. The EUB remains responsible for examining and approving, *inter alia*:

- the cost of existing generation owned by the investor-owned utilities;
- system access tariffs submitted by the TA; and
- the costs incurred by investor-owned distribution companies, and the retail rates they charge to consumers.

Distribution costs and rates for municipally-owned utilities are regulated by their respective municipalities.

In addition, the EUB continues to review applications to build generating plants and transmission facilities for compliance with environmental and planning requirements. Decisions to build new generating capacity will, however, be made on a purely commercial basis and will no longer be subject to a prudence review by the Board.

At present, the EUB administers a traditional “cost-of-service” regulatory system, but the Act explicitly removes existing legislative barriers to the development of incentive or performance-based regulation (s. 51). The Act allows utilities and consumers to negotiate a package of incentive regulation for presentation to the EUB for approval. The parties to these agreements will be encouraged to reach negotiated settlements as an alternative to full public hearings. In certain circumstances, such as cases involving complaints regarding the workings of the pool system, the EUB will only deal with the matter if a negotiated settlement has been attempted in good faith and this effort has failed.

The Board will be asked to approve rates and tariffs in the forthcoming hearing. It is unlikely that these tariffs can be approved on a negotiated basis since the new system raises a number of contentious issues on which intervenors are likely to take different views. For example, disputes are already surfacing regarding the categories of costs that

should properly be allocated to generation as opposed to transmission and the amount of information that should be divulged to intervenors.

### **Assessment**

At first blush there may seem little point in creating such an elaborate stage when the usual protagonist – competition – is missing from the plot. The major players remain integrated companies, with only their accounts being unbundled. These accounts are, however, treated as separate components for regulatory purposes. In particular, a contract for new generation between a generator and its affiliated distribution company must be approved by the EUB. Given that these companies are investor owned, more radical unbundling options such as divestiture of assets would obviously be difficult to impose on the industry.

Since generators are few in number, it is not evident that the introduction of the pool will promote real competition in generation unless a significant number of new, strong entrants emerge. Given that distributors are contractually tied to existing regulated generators, major new players are only likely to emerge when new capacity is required. The system is currently in surplus and there are differing views as to how long this will continue – with some citing a period of three to four years while others insisting that this time period could be longer.

Nevertheless, in the first six months of operation pool prices were generally lower than forecast. Peak prices hovered around \$20/MWh, while off-peak prices have been as low as \$5/MWh. The average pool price was \$14.60 in January, \$10.60 in February, \$11.20 in March and lower again in April and May. These price levels are partly explained by the fact that high water levels in British Columbia are allowing B.C. Hydro to bid in large amounts of hydro electricity at low prices, thus displacing more expensive gas units within Alberta.

Generators must bid in less than regulated prices to run. However, the full (regulated) cost of existing generation ranges from \$24/MWh for TransAlta to \$32/MWh for Alberta Power and \$45/MWh for Edmonton Power. Obviously these companies have quite different views as to the speed and manner in which generating units are taken out of regulated service in accordance with s. 42. Draft regulations providing for the removal of these units are currently in preparation. If the government adopts a conservative solution to this issue, many units could continue to function in regulated service until well into the next century.

One major issue that will also have to be faced in the near future is how to deal with market power and possible collusion between the generators, for example, to hold pool prices down. Too few generators and the resulting potential for abuse has been a well-known failing of the English pool mechanism. While predatory pricing strategies may keep IPPs and other potential competitors out, they will not disadvantage the big utilities as long as they are covered by the legislative hedging mechanisms.

At the present time, a great deal of the system certainly remains under the close regulatory scrutiny of the EUB. Yet with its traditional cost-of-service approach, the Board's ability to deal with market power in the pool is unclear. Once units are taken out of regulated service, generators will no longer fall directly under the EUB's jurisdiction; they will, however, remain subject to the federal *Competition Act*,<sup>7</sup> which regulates, *inter alia*, collusive behaviour and abuse of monopoly positions.

The independence of the current TA may also be questioned, and indeed the government has announced that it will put this role out to tender at the end of the year. In the meantime, Gridco has performed this function at a critical stage in the process, particularly as it is this company that will supply the crucial cost data and technical information to the EUB for the forthcoming rate hearing.

At the same time, the new system has raised the hopes and expectations of many, including the large consumers who are looking for direct access to the pool. A number of independent power marketers have already obtained export licences and commercial hedgers have entered the market. It is important to stress that the Act primarily regulates the physical supply of electricity and not the increasingly important financial side of its supply. Electrons and money do not have to follow the same route, even if their paths have to cross over as some point in time.

This often ignored fact means that developments in financial markets may outpace the evolution of competition in physical supply. Although large consumers cannot purchase from the pool, or migrate from their local distribution, they can already negotiate commercial hedging contracts to take advantage of the new system. The government is likely to formalize this situation shortly by allowing large consumers to negotiate rates with distributors that will allow the former to take the pool price while the distribution companies will only charge for use of their wires and related services. This arrangement is known as "virtual direct pool access".

Cautious as the new system may seem at first glance, it has instigated a dynamic for further change. How this dynamic will play out should become clearer in the near future. The government's regulations on taking units out of regulated service will be crucial to the future pace of change. In addition, the EUB's ruling on rates and tariffs in the new structure will obviously be an important determinant of who are likely to be the winners and losers in this process.

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## Notes

1. S.A. 1981, c. E-4.1
2. S.A. 1995, c. E-5.5.
3. Section 2 of the Act does make certain exceptions for the City of Medicine Hat, which in fact did not participate in the earlier EEMA system, as well as for a smaller plant owned by the City of Calgary. Generation for own use is similarly exempted, and s. 73(4)(b) allows the EUB to make rules exempting from the operation of the Act the electric energy produced from an industrial system, i.e., auto-generation. Several small municipalities are lobbying for exemption for co-generation facilities from the pooling requirement.
4. This term is defined in the Act at s. 1(1)(i) and includes the main investor-owned distribution companies and the municipal companies owned by the four largest cities. Several smaller municipalities that are not "entitled" have recently formed the Alberta Municipal Power System (AMPS), modelled on the Utah Association of Municipal Power Systems, which is lobbying for admission to the pool.
5. Four separate permits were issued to marketers by the NEB in late 1995, two of which will involve exports from the Alberta pool. Two of the four firms – Utility Trade Corp. and MultiEnergies Inc. – already market Canadian gas on the U.S. market while the other two – Northridge Power Ltd. and Destec Power – are subsidiaries of major gas corporations. The NEB in particular disagreed with those utilities that claimed that NEB export permits should follow, not precede, the conclusion of wheeling agreements. The Board has been reluctant to touch directly on transmission issues and holds the view that the terms and conditions of transmission are matters to be negotiated between the parties concerned.
6. For a more detailed discussion of these issues generally, see Cearley and McKenzie, "The Economics of Stranded Investment – A Two-Way Street" (November 1995), *The Electricity Journal* at pp. 16-23.
7. R.S.C. 1985, c. C-34.

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