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Electricity Across the Border ~ *Patrick Brown*

Many years ago, British Columbia's WAC Bennett government built an electrical monopoly for BC, generating power primarily from massive hydro-electric projects. This power was to be used to encourage the development of industry in the province, particularly aluminum smelting and pulp mills, both energy-intensive and sensitive to electricity costs.

Bennett's strategy worked, and has given the province a legacy of abundant cheap power. Last week's announcement of the revitalization of Alcan's Kitimat smelter brings back those old memories.

In recent years, the Campbell government's policy has been to break BC Hydro's monopoly on power generation, and force it to purchase power from privately owned Independent Power Producers (IPPs). This power will now come from a variety of sources, including 'run-of-river' generators (hydroelectric without dams), wind, and coal. Although the prices to be paid are secret, it seems clear that it will cost more per kilowatt/hour than 'legacy' power from the dams.

The Power Business

Also in recent years, BC has profited a great deal from selling power to the US, particularly in times when US demand exceeds its domestic supply.

In fact, WAC Bennett's hydro dams turn out to have a new and even more valuable function for BC as a power trader. Electricity, after all, cannot be stored—the controllable transmission of power depends on supply equaling demand at any moment in time. But water can be stored, and hydro generators can be turned on and off easily at any time. Hydro dams are the only facilities that can be used as a sort of battery, and even they are sensitive to annual variations in rainfall and snow load.

Other sources of power may be irregular, or may require a steady load to be economic. Coal-fired generators cannot be turned on and off easily; wind powered generators may produce more or less power depending on the wind. BC Hydro has actually paid standby charges for cogeneration facilities not to produce power. But BC has made money buying coal-fired electricity from Alberta (they don't need it at night so it's cheap, but they can't turn it off) and selling it to the US during the day (when demand is high, and we can get a good price).

So BC has evolved from a very simple power system using hydro power to ensure its own self-sufficiency and industrial development to a profitable power trader, drawing power from many sources, and balancing supply and demand using WAC Bennett's dams as a sort of power 'warehouse'. It isn't simple any more, and that's why pronouncements about BC being a 'net importer' of power need careful examination. Sometimes it's cheaper to import power than use our own inventory. Just because we import power doesn't necessarily mean we're short of it.

Much of BC Hydro's profit goes to the provincial government. Remember when Enron was manipulating the California electricity market, and the prices went sky-high? We profited (they sued, unsuccessfully).

So it's a business, and some of those profits are used to keep our own power rates lower than most places in North America.

Interconnections and Harmonization

Virtually all electricity transmission systems in North America are interconnected, but some of those connections aren't very robust—certainly not fail-safe. And there are very few places in North America that have the ability to store power behind hydro dams: BC, Manitoba, Quebec, and the Bonneville Power Authority in Washington State. The rest of the continent has a difficult time balancing supply and demand. The system is very sensitive, and overloads or imbalances can have disastrous consequences.

Almost exactly three years ago, there was a massive chain reaction blackout extending from Ohio through to Ontario. An investigation of how it started and how was it propagated led to a demand for a set of standards for the operation of transmission networks, and this in turn led to the recent authorization by the US government of the National Electricity Reliability Council (NERC), an industry body, as the guardian and enforcer of 'mandatory' operational standards. In February, NERC appointed more Canadian electric utility representatives to its board, and reported on April 4 that it has applied to eight provinces and the National Energy Board for authority to enforce these transmission standards in Canada. (In BC, it would appear that the logical place to apply would be the BC Utilities Commission (BCUC) but no such application has yet been recorded.) On June 20, these plans were explained to the Canadian industry at the Energy Council of Canada 'Energy Forum 2006' at Mount Tremblant, Quebec.

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The US government has also forced the creation of co-operative Regional Transmission Organizations (RTOs); British Columbia and Alberta are included in the western network, along with eleven states and part of northwest Mexico. The Canadian Electricity Association (CEA), an industry body, has expressed its support for the participation of Canadian electric utilities in RTOs, and the enforcement of mandatory reliability standards by, presumably, NERC.

The CEA has also proposed 'increased focus on harmonizing market rules', and a North American strategy to manage greenhouse gas emissions.

The Questions . . .

There is clearly considerable pressure to integrate BC's power production, water storage, and transmission facilities with the US and Alberta networks. There is also clearly an economic opportunity for BC in producing and trading of electrical power.

It has been suggested that electricity rates in BC should be raised to encourage conservation. It has also been suggested BC residents should pay the US market price for power. After all, the IPPs in BC could sell their power to the US instead of to BC Hydro.

On the other hand, there is clearly an advantage to both British Columbians and the BC economy in maintaining cheap power. And the conservation of power has turned out to be one of the cheapest ways of augmenting supply.

All this raises major policy questions for the provincial government. So far, it looks as though there is a certain reluctance to debate this. BCUC is asked to make decisions on the regulation of BC Hydro and BC Transmission Co, without any clear policy framework. Isn't it about time we had some clear leadership? ✐

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