

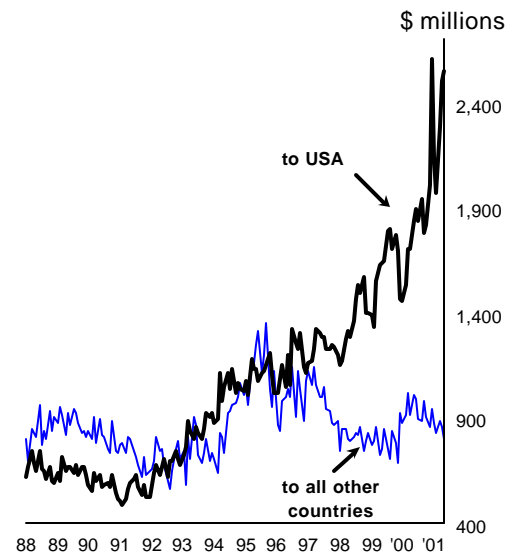
## Exports ♦ May 2001

- The value of energy exports from January to May 2001 was three and a half times that of the same period in 2000, helping drive total BC exports 21.1% higher than the first five months in 2000.
- The year-to-date value of electricity exports is over eight times the amount recorded in the January to May period in 2000. Natural gas exports are also up substantially (+355%) over 2000. Price inflation has been the main reason for the unprecedented growth in this sector.
- Masked by the phenomenal performance in the energy sector is the slowdown in trade in forest products. Year-to-date exports of both solid wood (-10.9%) and pulp and paper products (-9.5%) are significantly lower compared to the same period in 2000.
- Softwood lumber exports to the United States continue to represent the single largest component contributing to the decline in solid wood exports. Low prices early in the year were a factor in the decline, but it may be the uncertainty regarding possible retroactive duties imposed by the Americans that continues to curtail exports. Canadian softwood lumber producers received support from an unexpected source this month when over 100 members of Congress sent a letter to President Bush urging him to reject petitions for sanctions against Canadian exports. They are concerned about the effects such sanctions will have on housing prices and on the American economy. A quick resolution to the dispute would likely result in a turn-

around in wood exports, but history indicates this is an unlikely scenario.

- The dramatic rise in the value of exports to the United States (+39.1%) has been driven mainly by the surge in the value of trade in energy products. Elsewhere, trade with the European Union is up 2.3% from the first five months of 2000, but exports to the Pacific Rim (including Japan) continue to lag behind last year's pace, down 15.7%. Trade with Mexico, Central and South America is approximately 50% higher so far in 2001.

Unprecedented growth in energy exports driving overall export growth to U.S.

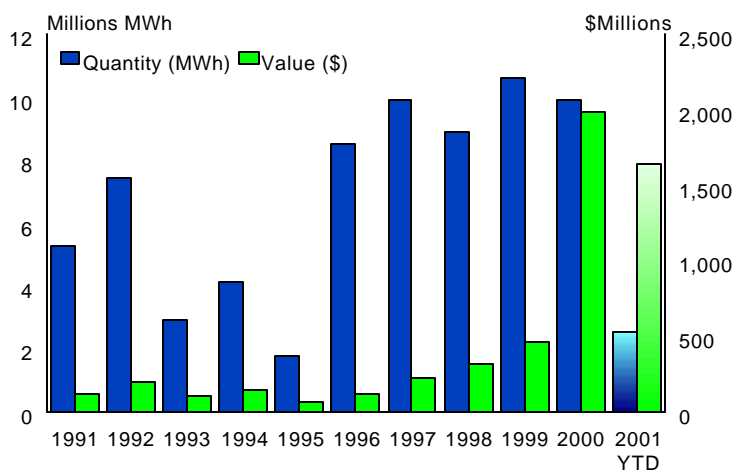


## Buy Low, Sell High: Trade in Electricity

The value of electrical energy exports from British Columbia has skyrocketed in the last several months. This, combined with similar growth in exports of natural gas, has helped mitigate a drop in the value of international shipments of forest products and has led to strong overall export growth for the province. The substantial spike in electricity exports has been entirely due to rampant inflation. In fact, year-to-date, the quantity of electricity exported is about three-quarters of that in the same period in 2000, while the value of exports in 2001 is eight times higher compared to the first five months in 2000.

*Despite exporting less electricity year-to-date compared to 2000, the value of those exports in 2001 is 8 times higher.*

The value of electricity exports has soared



### A case of supply and demand

Inflationary pressure on electricity prices has been driven mainly by supply problems in the United States, particularly California. British Columbia's abundance of hydroelectric power has enabled Powerex, the electricity trade subsidiary of BC Hydro, to take advantage of the high prices in the spot market for electricity and reap tremendous profits. In fact, Powerex has profited to such an extent from exporting electricity to the United States that California has accused it and other wholesale suppliers of electricity of manipulating the market to earn inflated profits.

*Supply problems in the United States have exerted inflationary pressure on electricity prices.*

The Federal Energy Regulatory Commission (FERC), a United States federal agency responsible for regulating wholesale power sales, found these allegations to be unsubstantiated, but that has not dampened the resolve of those in California who are looking for a scapegoat for the high electricity prices. Some analysts feel that the state's partial deregulation of the industry in 1996 is the root of the problem. Although the industry has been opened up to competition, electricity rates are frozen until the end of March 2002. This means that regardless of how high the price of electricity goes, consumers will not have to pay more, which means the normal market forces that

come into play with changes in price are not working as they should. In other words, where normally the demand would fall as the price rises (i.e., people would choose to conserve and use less energy by leaving on fewer lights, using less heat or air conditioning, etc.), with a price freeze in effect, this is not occurring. In fact, the resurgence of the economy in California over the last few years, coupled with the expansion of computer-based business (large users of electricity), has resulted in a significant increase in demand.

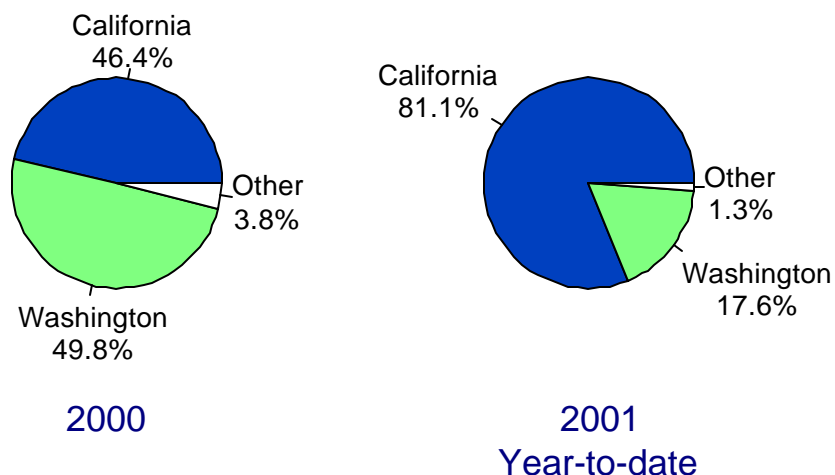
*A flawed deregulation scheme in California is at least partially responsible for high prices for electricity.*

On the supply side of the equation, California did not anticipate the increased demand and does not have sufficient power-generating facilities in state. This means that California utility companies must import electricity from out of state and this is where companies like BC Hydro and its subsidiary, Powerex, come into the picture. As California is threatened with rolling blackouts because of high demand and low supply, the state has unwittingly contributed to the soaring cost of electricity. It is simply a case of low supply and high demand that is driving up prices. Companies like BC Hydro feel that they are working within the rules of the free market and supplying a commodity at as high a price as the market will bear.

**California and Washington receive the bulk of BC exports**

In 2000, approximately half of BC exports of electrical power went to Washington State and just over 46% to California. So far in 2001, California has been the destination for over 80% of exports of BC electricity.

**California's share of electricity exports\* is up in 2001**



\* by quantity

## Electricity generating capacity in British Columbia

In 2000, there were 68,239 GWh of electric energy generated in British Columbia.<sup>1</sup> Of this total, almost 88% was hydroelectric power. Conventional steam-generated electricity made up just over 10%, and combustion turbine (2%) and internal combustion generated electricity (0.1%) comprised the remainder. In addition, approximately 548 GWh of electricity was purchased from other provinces, and 5,245 GWh was imported from the United States. Of the total electricity generated in the province and imported from outside the province, 15% was exported to either other provinces or the United States. This left a total available electricity supply of 62,867 GWh for domestic use in the province.

*About 88% of electricity generated in British Columbia is hydroelectric power.*

In terms of hydroelectric generating capability, BC Hydro facilities have about 85% of the plant capacity in BC.<sup>2</sup> The next two largest electricity generators by plant capacity are the Kemano facility owned by Alcan (7%) and the Waneta dam owned by Cominco (3%), which are used as power sources for the Alcan aluminum smelter and the Cominco lead-zinc smelter respectively. Surplus power is also sold to BC Hydro and on the spot market. The next largest utility by capacity is West Kootenay Power (2%).

### Buying low and selling high

In 1997, BC Hydro became only the second utility company in Canada to receive a Power Marketing Authorization from the FERC in the United States. This gave the company access to power from anywhere in the United States. In addition, under the terms of the Columbia River Treaty, BC Hydro has exclusive access to the Canadian entitlement of power generated in the US on the Columbia River system. Together with BC Hydro's own substantial generating capacity, these sources provide the company with sufficient resources to make it a significant player in the electricity market.

In addition to simply selling surplus power, BC Hydro, through its wholly-owned subsidiary, Powerex, has been able to buy power during off-peak hours when prices are lower, then sell its own power during the peak period when prices are highest. Basically, the imported power is used to meet electricity needs in British Columbia during the night when the demand is low. This allows BC Hydro to conserve its own supply leaving more power available to sell to other markets when demand is at its peak and prices on the spot market are correspondingly highest. BC Hydro is committed to meeting the needs of its customers in British Columbia first, so it is this system of arbitrage that allows the company to maximise its return on the electricity it produces.

*By buying low and selling high, BC Hydro has been able to maximise its profit.*

<sup>1</sup> Statistics Canada, *Electric Power Statistics, March 2001*, catalogue 57-001-XIB.

<sup>2</sup> Statistics Canada, *Electric Power Generating Stations, 1999*, Catalogue 57-206-XIB.

### British Columbia Electrical Energy Exports

Year	Quantity (MWh)	Value (\$Canadian)
1991	5,269,329	119,391,994
1992	7,474,483	197,166,697
1993	2,907,335	106,458,350
1994	4,110,621	144,951,684
1995	1,761,852	62,575,440
1996	8,501,768	120,678,691
1997	9,909,866	222,647,723
1998	8,930,188	323,278,087
1999	10,651,695	458,005,447
2000	9,946,438	1,986,598,729
Jan-May 2000	3,463,014	197,661,762
Jan-May 2001	2,555,007	1,641,938,569

*BC exports of electricity have been substantially higher in the last five years...*

Source: Statistics Canada

### British Columbia Electrical Energy Imports

Year	Quantity (MWh)	Value (\$Canadian)
1991	475	18,059
1992	120	4,891
1993	1,080,957	19,085,654
1994	6,104	189,363
1995	1,645,931	24,068,693
1996	34,397	1,557,904
1997	3,511,182	43,452,985
1998	4,288,286	93,157,054
1999	6,611,691	158,312,662
2000	5,244,698	336,356,313
Jan-May 2000	2,597,387	85,166,279
Jan-May 2001	4,471,379	1,187,039,433

*...as have imports.*

Source: Statistics Canada

The preceding tables show how both exports and imports of electrical energy have risen substantially since BC Hydro was given access to power in the United States and the ability to buy and sell power on the spot market.<sup>3</sup> They also display how the value of electricity has surged over the last few years, and particularly in the last several months. This is due to a combination of increased demand as well as the shrewd business practice of Powerex that has enabled it to sell when prices are at their peak.

In addition to giving BC Hydro the opportunity to realise significant profits, the ability to buy and sell on the spot market also gives the company some security with its power supply. By far the majority of electricity generated in BC is hydropower from dams. The flexibility of hydropower is one of the reasons BC Hydro can take advantage of the movements of the spot market. BC Hydro can let the reservoirs rise overnight while imported electricity is being used to power the province, then open them to create hydro-electricity when demand is at its peak. However, this last winter has produced far less precipitation than normal in British Columbia, and the corresponding reduced snow packs have resulted in lower than normal water levels in British Columbia's lakes and rivers. This may mean that BC Hydro will not have the excess capacity available to sell on the spot market, and may even become a net importer of power.

*Hydro-generation of electricity is more flexible than other generation methods giving BC Hydro the ability to respond to demand quickly.*

### **Conclusion**

Deregulation of electric utilities in some parts of North America has created opportunities for generators of electricity to trade that energy on the open market. In British Columbia, BC Hydro has made good use of its abundance of hydro-electricity, buying and selling power on the spot market according to demand ebbs and peaks and generating a tidy profit as a result. Total BC imports and exports of electrical energy have risen in both quantity and value. Low water levels may prevent BC Hydro from capitalising on future price fluctuations later this year, but the recent experience with the crisis in California is an indication of the future potential of electricity as an export commodity for British Columbia.

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<sup>3</sup> Although BC Hydro is not the only electricity generating company in the province, it is by far the largest and is likely responsible for the great majority of BC electricity exports.

**Recent Feature Articles In British Columbia Origin Exports Release  
Listed By Statistical Reference Date of Issue**

<b>01-04</b>	<i>Attack of the Canadian Tomatoes (released June 2001)</i>	<b>99-11</b>	<i>Growing Cross Border Trade In Agricultural Food Products (released Jan 00)</i>
<b>01-03</b>	<i>The Softwood Lumber Dispute (released May 2001)</i>	<b>99-10</b>	<i>Trade Imbalances Growing Within NAFTA (released Dec 99)</i>
<b>01-02</b>	<i>(no article)</i>	<b>99-09</b>	<i>B.C. Exports Recovering In Some Asian Markets, Still Declining In Others (released Nov 99)</i>
<b>01-01</b>	<i>(no article)</i>	<b>99-08</b>	<i>British Columbia Exports to United States Move Increasingly By Truck (released Oct 99)</i>
<b>00-12</b>	<i>(no article)</i>	<b>99-07</b>	<i>Export Changes During 1990s Reduce Resource Dependency (released Sep 99)</i>
<b>00-11</b>	<i>After Much Economic Diversification, B.C. Exports Are Still Mainly Resource Based (released Jan. 00)</i>	<b>99-06</b>	<i>British Columbia Losing Dominant Position In World Lumber Markets (released Sep 99)</i>
<b>00-10</b>	<i>Ambitious Western Hemisphere Trade Agreement Could Help Shape Canadian Trade In the New Decade (released Dec. 00)</i>	<b>99-05</b>	<i>September Team Canada Mission To Visit Japan and Australia (released Jul 99)</i>
<b>00-09</b>	<i>Trade Growth Tied To Transportation Infrastructure (released Dec. 00)</i>	<b>99-04</b>	<i>New Export Industries Depend Heavily On Air Freight Services (released Jul 99)</i>
<b>00-08</b>	<i>Some Familiar Patterns Developing In Trade Between China and British Columbia (released Nov. 00)</i>	<b>99-03</b>	<i>United States Log Exports (released May 99)</i>
<b>00-07</b>	<i>International Trade In Services Produces B.C.'s Only Trade Surplus (released Oct. 00)</i>	<b>99-02</b>	<i>British Columbia Losing Ground In United States Lumber Market (released Apr 99)</i>
<b>00-06</b>	<i>Value Added Wood Exports Grow Fast In B.C., But Faster In Rest of Canada (released Aug. 00)</i>	<b>99-01</b>	<i>British Columbia Export Reliance On U.S. Market Highest Since Early 1960s (released Mar 99)</i>
<b>00-05</b>	<i>What Has Free Trade Meant For B.C.'s International Trade? (released July 00)</i>	<b>98-12</b>	<i>(no article)</i>
<b>00-04</b>	<i>British Columbia Shipping Smaller Portion of Canadian Forestry Products (released June 00)</i>	<b>98-11</b>	<i>Diversification of Export Mix Accelerates In 1998 (released Jan 99)</i>
<b>00-03</b>	<i>1990s Brought New Markets and New Products For B.C. Exports (released June 00)</i>	<b>98-10</b>	<i>Offsetting Export Losses In Asia With Gains In the United States Market (released Dec 98)</i>
<b>00-02</b>	<i>United States Continues Substantial Log Exports In 1999 (released April 00)</i>	<b>98-09</b>	<i>Half A Century of B.C. Exports, From British Empire to the U.S. &amp; Asia (released Nov 98)</i>
<b>00-01</b>	<i>B.C. Goods Export Growth Among Lowest In Canada During 1990s (released Mar 00)</i>	<b>98-08</b>	<i>Asian Fallout Has British Columbia Exporters Relying Heavily On U.S. Market (released Oct 98)</i>
<b>99-12</b>	<i>British Columbia Trade Becoming More Continental Than Global (released Feb 00)</i>		

## NOTES

### Countries Included Within World Regions:

**(1) Western Europe:** United Kingdom, Ireland, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland.

**(2) Eastern Europe:** other Europe, including all of Russia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, etc.

**(3) South East Asia:** Malaysia, Brunei Darussalam, Singapore, Myanmar, Kampuchea, Laos, Indonesia, Philippines, Thailand, Vietnam.

**(4) Africa:** continental Africa, excluding Ethiopia, Libya, Somalia, Sudan, Egypt.

**(5) South America:** continental South America from Colombia and Venezuela south to Chile and Argentina, including offshore islands, but not Caribbean.

**(6) Central America and Caribbean:** from Guatemala and Belize to Panama, plus Caribbean Islands.

**(7) Pacific Rim (including Japan):** Japan, Hong Kong, Malaysia, Brunei Darussalam, Singapore, Laos, Mongolia, China, Indonesia, North Korea, South Korea, Philippines, Macau, Taiwan, Thailand, Vietnam, Australia, Fiji, New Zealand.

**(8) Pacific Rim:** as above, but excluding Japan.

**(9) Middle East:** from Turkey and Iran south through the Arabian Peninsula. Excluding Afghanistan and Pakistan, but including Cyprus, Ethiopia, Egypt, Somalia, Sudan and Libya.

'Selected Value-added Wood Products' category includes prefabricated houses, doors, windows, furniture, moulding, siding, etc. It does not include panel products, shakes, shingles or any pulp and paper products.

Service Offered for Detailed Trade Statistics

For B.C. government statistics users requiring more detailed information on exports or imports, a special report service is offered through the address below:

**Dan Schrier - Trade Statistics**

**BC STATS**

**553 Superior Street, Victoria, B.C. V8V 1X4**

**(250) 387-0376**

This service is provided through the Trade Research and Inquiry Package (TRIP) computer reporting system. TRIP offers user-defined tabulations of export or import statistics for British Columbia, Canada, the United States and other countries. Tabulations can include information on commodities, countries, U.S. states, years, months, mode of transport, etc.