

BC HYDRO FIVE-YEAR STATISTICS 2015 to 2020

This paper reviews the five-year change in a variety of financial and service measures. The data is from BC Hydro's fiscal year-end reports and is grouped in categories similar to the groupings in the previous report for 2013 to 2018, distributed in September 2018.¹

The data in this report covers the period from 31 March 2015 to 31 March 2020. The COVID-19 containment measures did not have a significant impact on sales by 31 March 2020, although the decline in interest rates did negatively impact the liabilities recorded for the interest rate hedging program.²

1.0 Sales

During the last five years the total domestic gigawatt-hours sold rose by only 900, or 1.8%, with a 5.5% increase in Residential sales partially offset by a decline in sales to the Large Industrial sector. Table 1.1 shows that while sales were relatively flat, the number of Domestic accounts increased by 7.6%.

The increase in Residential and Commercial sales was far smaller than the increase in population or the provincial GDP. From July 2014 to July 2019 the total population increased by 9.5%, while the real GDP increased by 22.2% from January 2014 to December 2019.³

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http://www.bcpolicy Perspectives.com/media/attachments/view/doc/occasional_paper_no_61_13_september_2018/pdf/occasional_paper_no_61_13_september_2018.pdf

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http://www.bcpolicy Perspectives.com/media/attachments/view/doc/fact_check_bc_hydro_sales_drop_12_may_2020_4/pdf/fact_check_bc_hydro_sales_drop_12_may_2020_4.pdf

³ From BC Economic and Financial Review for 2015/16, pp. 69 and 79

https://www.bcbudget.gov.bc.ca/2015/bfp/2015_budget_and_fiscal_plan.pdf, and 2020/21 pp. 76 and 86
https://www.bcbudget.gov.bc.ca/2020/pdf/2020_budget_and_fiscal_plan.pdf

Table 1.1 – FIVE YEAR CHANGE IN CUSTOMER ACCOUNTS AND GWh's SOLD

CATEGORY	Δ in NUMBER		Δ in GWh SOLD	
	Number	Per Cent	Number	Per Cent
Residential	135,624	7.8	936	5.5
Light Ind. And Commercial	11,597	5.7	128	.7
Large Industrial	15	8.2	(622)	(4.4)
Other	(78)	(2.2)	448	28.3
TOTAL DOMESTIC	147,158	7.6	900	1.8

Source: B.C. Hydro annual reports.

The lower usage may be related to elasticity of demand, as the price increases the amount purchased declines. The change in price is shown on Table 1.2.

From April 2015 to April 2019 B.C. Hydro rates increased by a cumulative 19.6%.

Table 1.2 – FIVE YEAR CHANGE IN AVERAGE SALES PRICE (\$/MWh)

	2014/15	2019/20	Per Cent
Residential	100.43	120.55	20.0
Light Ind. And Commercial	86.03	103.89	20.8
Large Industrial	53.35	63.44	18.9

Source: B.C. Hydro annual reports.

Note: The prices were before any regulatory transfers.

2.0 Cost of Energy

In the last five years B.C. Hydro's cost of energy increased by \$272 million, or 18.5%. This was primarily due to a \$250 million increase in the cost of electricity purchased from private power producers. The amount of water rental paid to the provincial government declined by some 12% due to less water used to generate power from BC Hydro's plants and a cancellation of the Tier 3 rate.

Table 2.1 – CHANGE IN COST of ENERGY (\$=million)

	2014/15	2019/20	Difference	Per Cent
Water Rental	334	293	(41)	(12.3)
Indep. Power Producers	1,064	1,314	250	26.0
Other	72	135	63	87.5
TOTAL	1,470	1,742	272	18.5

Source: B.C. Hydro annual reports. Water rental net of growth in price less elimination of Tier 3. Before reg transfer

3.0 Electricity Required and Sources

Table 3.1 shows that over the last five years the total GWh required by B.C. Hydro to meet Domestic customer requirements increased by 1,465 GWh, or 2.6%. Table 1.1 provides a breakdown of the marginal change in Domestic sales by major class of customer.

Table 3.1 – CHANGE IN DOMESTIC ELECTRICITY REQUIRED (GWh)

	2014/15	2019/20	Difference	Per Cent
Domestic	51,213	52,113	900	1.8
Line Loss	4,486	4,651	165	3.7
TOTAL	55,299	56,764	1,465	2.6

Source: BC Hydro annual report 2014/15 pp. 23 and 106, and annual report 2019/20 pp. 24 and 120.

Table 3.2 shows that most of the net increase in electricity for domestic requirements was purchased from the short-term market, as the increase in the IPP purchases offset the decline in owned production.

Table 3.2 – SOURCE OF DOMESTIC POWER (GWh)

	2014/15	2019/20	Difference	Per Cent
BC Hydro	41,443	40,554	(889)	(2.1)
Independent Power Prod.	13,377	14,475	1,098	8.2
Other (Short Term)	479	1,735	1,256	362.2
TOTAL	55,299	56,764	1,465	2.6

Source: BC Hydro annual report 2014/15 pp. 23 and 106, and annual report 2019/20 pp. 24 and 120.

As shown in Table 2.1, during the last five years the payment to the private power producers increased by 26%, while Table 3.2 shows that the GWh purchased from IPPs increased by 8.2%. The average price per GWh increased from about \$79.54 to \$90.78, or 14.1% (some 2.8% per year).

4.0 Change by Major Expenditure Category

A review of the past five years of key expenditure categories shows a significant increase in personnel costs, which is primarily due to the return of certain administrative function to the direct operation of the corporation rather than being outsourced to Accenture. The decline in interest rates during the period is reflected in the decline in

amortization costs, but this was more than offset by the increase in finance charges, reflecting the sharp increase in interest rate hedging liabilities.⁴

Table 4.1 – FIVE YEAR CHANGE IN EXPENDITURES (\$ million)

	2014/15	2019/20	Difference	Per Cent
Power Purchases	1,707	1,880	173	10.1
Water Rental	358	293	(65)	(18.2)
Transmission Charges	138	197	59	42.8
TOTAL	2,203	2,370	167	7.6
Personnel	534	685	151	28.3
Amortization/Depreciation	1,205	998	(207)	(17.2)
Finance Charges	632	1,645	1,013	60.3
Grants & Taxes	209	254	45	21.5
Other	384	677	293	76.3
TOTAL	5,167	6,629	1,462	28.3

Source: B.C. Hydro 2015/16 annual report notes 5 and 6 p. 54, and 2019/20 annual report notes 5 and 6 p. 62.

5.0 Change in Net Regulatory Account Balance

The actual net deferral balance for the last five years, and the ratio of net deferral assets to equity is shown in Table 5.1. The drop in the net balance in 2018/19 reflected the elimination of the Rate Smoothing Regulatory Account, while the increase in 2019/20 reflects the growth in the interest rate hedging liability, a decline in the non-current pension balance, and a decline in the regulatory liabilities as some of the surplus in the Heritage and Trade accounts was returned to ratepayers.

Table 5.1—NET DEFERRAL ASSETS to EQUITY RATIO (\$ million)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Net Reg. Assets	5,434	5,908	5,597	5,455	4,257	5,005
Equity	4,170	4,500	4,909	5,456	4,947	5,654
Deferral/Equity	130.3	131.2	114.0	100.0	86.1	88.5

Source: B.C. Hydro annual reports.

⁴

http://www.bcpolicy Perspectives.com/media/attachments/view/doc/commentary_bc_hydro_hedging_gamble_17_september_2020/pdf/commentary_bc_hydro_hedging_gamble_17_september_2020.pdf

The ratio of net deferrals to equity is far higher than the 21.5% ratio recorded for fiscal 2019 by Hydro Quebec,⁵ and the 28.9% reported by Manitoba Hydro.⁶

6.0 Capital Expenditures and Long-Term Debt

Over the last five years BC Hydro has spent some \$14.1 billion on capital projects, with approximately \$8.6 billion for capacity growth. The growth includes the purchase of the balance of the Waneta Dam (\$1.2 billion) and the partial completion of the Site C dam.

Table 6.1 – CAPITAL EXPENDITURES (\$ million)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Sustaining	1,005	1,136	1,286	1,190	965	955
Growth	1,164	1,170	1,158	1,283	2,861	2,127
Total	2,169	2,306	2,444	2,473	3,826	3,082

Source: B.C. Hydro annual reports, 10-year summaries.

The long-term debt has increased by \$6.67 billion, or 40%, during the last five years.

Table 6.2 – LONG TERM DEBT (\$ billion)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total	16.68	18.00	19.80	20.14	22.10	23.35

Source: B.C. Hydro annual report 2019/20, p. 118.

7.0 Net Income, Free Cash Flow and Dividend

The operation of a major integrated power utility is highly capital intensive. However, BC Hydro has been able to maintain a high profit level (net income) due to the wide array for regulatory accounts. These mask the profit and loss, but the free cash flow data show that BC Hydro relies on borrowing to fund its capital projects and some of its operations. The previous government ended the practice of demanding a dividend, which BC Hydro added to its borrowing requirements.

⁵ <https://www.hydroquebec.com/data/documents-donnees/pdf/annual-report-2019-hydro-quebec.pdf> p. 65.

⁶ https://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2018_19.pdf p. 56. Manitoba Hydro does not record its employee pension plans in its financial reports or in its regulatory accounts.

Table 7.1 – FREE CASH FLOW and DIVIDEND (\$ million)

	2015/16	2016/17	2017/18	2018/19	2019/20
Net Income	655	684	684	(428)	705
Free Cash Flow	(1,042)	(1,186)	(398)	(1,831)	(999)
Dividend	326	259	159	59	0

Source: B.C. Hydro annual reports.

BC Hydro’s return on “deemed equity” for 2019/20 was approximately 10.5%.⁷

6.0 Summary

The five-year comparison shows that despite a strong economy and significant population growth, the increase in electricity sales of Domestic electricity has only increased marginally. B.C. Hydro has been forced to pay significantly more for contracted private power generation, and curtailed generation from its own dams to accommodate the increase in privately generated electricity and to deal with low water conditions in 2018/19.

The public power utility has been spending heavily on capital projects, and the low interest rates experienced in recent years has helped to keep the debt service costs relatively low. Unfortunately, the liabilities incurred by the interest rate hedging program have negated any gain to ratepayers from the lower borrowing cost.

The wide use of regulatory (deferral) accounts has allowed for lower than necessary rate increases, and a high return on equity. Future ratepayers, however, are faced with a high debt liability.

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The writer is a retired senior BC government public servant whose paper describing the BC government’s manipulation of the finances of BC Hydro from 2008 to 2014 was published by *BC Studies* in November 2016. *BC Studies* published his paper on the 40-year financial history of ICBC in 2013. He has been an intervener in the BC Utilities Commission’s recent reviews of both ICBC’s and BC Hydro’s rate requests.

⁷ Estimated based on BC Hydro’s F20 to F21 rate request forecast for 2019/20, p. 8-9.

