POLICY SERIES

No. 204 / OCTOBER 2017

PUBLIC CHOICE ALTERNATIVES

A VALUATION OF THE COLUMBIA POWER UNIT OF BRITISH COLUMBIA HYDRO

BY IAN MADSEN

FRONTIER CENTRE FOR PUBLIC POLICY

Ideas that change your world / www.fcpp.org

IAN MADSEN

Ian Madsen, B.A. (Alberta), M.B.A. (Toronto), CFA, is a Senior Policy Analyst at the Frontier Centre for Public Policy. He has extensive experience in portfolio and financial analyses, managing investment portfolios, and managing investment research operations (including overseas). He lives in Surrey, B.C.

FRONTIER CENTRE FOR PUBLIC POLICY

203-2727 Portage Avenue, Winnipeg, Manitoba Canada R3J 0R2
Tel: 204-957-1567
Email: manitoba@fcpp.org

The Frontier Centre for Public Policy is an independent, non-profit organization that undertakes research and education in support of economic growth and social outcomes that will enhance the quality of life in our communities. Through a variety of publications and public forums, the Centre explores policy innovations required to make the prairies region a winner in the open economy. It also provides new insights into solving important issues facing our cities, towns and provinces. These include improving the performance of public expenditures in important areas such as local government, education, health and social policy. The author of this study has worked independently and the opinions expressed are therefore their own, and do not necessarily reflect the opinions of the board of the Frontier Centre for Public Policy.

Policy Series No. 204 • Date of First Issue: October 2017.

ISSN 1491-78

Ideas that change your world / www.fcpp.org

FRONTIER CENTRE FOR PUBLIC POLICY

POLICY SERIES

No. 204 / OCTOBER 2017

PUBLIC CHOICE ALTERNATIVES

A VALUATION OF THE COLUMBIA POWER UNIT OF BRITISH COLUMBIA HYDRO

BY IAN MADSEN

TABLE OF CONTENTS

EXECUTIVE SUMMARY

British Columbia's quandry: To keep Columbia Power, or add 15,000 teachers, nurses, or paramedics?

There are two generally accepted methods for valuing a company: its intrinsic value as a cash-generating enterprise, and its standard market value in comparison with similar companies. This study used both methods to value Columbia Power Corporation (CPC).

Using an **intrinsic value method,** and discounting to the present, BC Hydro's interest in CPC's projected future free cash flows, under a set of four increasingly more generous scenarios, the corporation's value could range from a median of $879 million to a mean of $1,084 million, and range between a median of $1,655 million and a mean of $2,041 million if the company was to become debt free prior to sale. This is the fully-taxed value estimate, because once BC Hydro's interest in CPC is sold to non-government investors, the company will become taxable.

Under the **market-based valuation system,** the constrained, current, fully-taxed value ranges from $530 million to $1,991 million, with a median value of $801 million; but, if the company is rendered free of debt, the range could be between $474 million and $1,781 million, with a median value of $904 million. The upper limits would be possible if a buyer thinks the company can and will continue its growth trajectory and maintain its low operating cost and its prudent investment strategy. It should be noted that the comparison companies are lower-valued than CPC might be, since the former have less consistent performance, and lower profitability.

INTRODUCTION

Columbia Power Corporation, (CPC), was created by the Columbia Basin Trust, and is jointly managed with that company. Its mandate is to manage the hydro-electric resources in Southeastern British Columbia, while the Trust is the guardian of the environment and land use in the watershed. The Trust was created in 1995, after community and government discussions dating from the Columbia River Treaty signed between the United States and Canada in 1964, the purpose of which was to control flooding and to manage the development of hydroelectric power in the region. The sale of CPC or its public flotation would certainly involve discussions with the Trust.

CPC is part of B.C. Hydro but it has separately delineated assets and liabilities, and its own income and cash flow statements. As a result, the division can be valued separately from British Columbia Hydro using its intrinsic free cash flow-generating capacity. BC Hydro owns CPC, which in turns owns 50% interest in each of three separate hydro-power generation facilities in southeastern BC, and 58% in one other generation facility.

As the investments in these dams and generating plants are ‘lumpy’, its capital investment, revenues, and, consequently, its income and cash flows superficially appear to be erratic. However, the corporation has been careful in its approach to managing business. Indeed, it has refrained from ‘investing on spec’ in a new site, called Elkford, because its managers determined that there would be no need for the power this new plant could provide in the near future. Consequently, the company has relatively low debt for a utility, and, apparently, is relatively low-cost versus its peers in the renewable energy sector. Unlike many other Crown corporations, there is little ground to criticize CPC for capital allocations, high costs, or mediocre performance. Hence, this study only estimates the CPC’s value as an investment, and as a viable entity in the future as opposed to liquidating it.

INTRINSIC VALUE: VALUATION OF CPC AS A BUSINESS

For the intrinsic value, projecting future cash flow growth, and bringing it to a net present value, a relatively conservative approach was taken which could undervalue the company (see Table 1). The company's growth rate range was from 3 to 5%, and the required rate of return or cost of capital range was from 6 to 8%. The company has experienced higher growth rates in recent times, and projects higher growth in the future, which is reasonable. Its cost of capital, given low expectations and high current valuations in the stock market, could well be lower than the range used, although there is also a chance that interest rates (and the equity risk premium [the equity risk premium is the additional return over less-risky assets, such as government bonds, investors demand; eg., investors at this time seem to want returns on stable, larger companies of 5 – 8%, whereas bonds yield 1 – 3%, giving an equity risk premium of between 2 and 7%; 3 – 5% is the longer-term range]) could increase. The tax rate used in calculations may be lower in the future, as there is continued global pressure to lower corporate tax rates.

Table 1

Intrinsic Value, Discounted Free Cash Flow Value of Columbia Power: Four Scenarios
($ Millions CAD)

Scenario A.		
Existing Debt Load & Interest Expense, Untaxed (Averages: mean, median) ($$M)	**$1,505.20**	**$1,220.43**
Valuation Range:	**$732.26**	**$3,661.30**
Scenario B.		
Existing Debt Load & Interest Expense, Fully Taxed (Averages: mean, median) ($$M)	**$1,084.06**	**$878.97**
Valuation Range:	**$527.38**	**$2,636.90**
Scenario C.		
NO Debt or Interest Expense, Untaxed (Averages: mean, median) ($$M)	**$2,326.44**	**$1,886.30**
Valuation Range:	**$1,131.78**	**$5,658.91**
Scenario D.		
NO Debt or Interest Expense, Fully Taxed (Averages: mean; median) ($$M)	**$2,041.12**	**$1,654.96**
Valuation Range:	**$992.98**	**$4,964.88**

Source: Author's calculations based on summary versions in the reports made available by the company.

MARKET-BASED VALUE: VALUATION OF CPC USING STOCK MARKET AND FINANCIAL METRICS

With respect to the market-peer comparison valuation, there are a few complications. The Canadian renewable energy sector includes a number of companies with low profitability, at least at this time (see Table 2, next page). Also, their operating cash flow is relatively low. The most similar companies have substantially negative free cash flow, meaning they require further financial inflow. Canadian conventional utility companies are relatively more straightforward, but do not have the hydro-electric emphasis that CPC and renewable energy companies have.

There is a set of established Brazilian power companies that have large hydro-electric divisions; some are exclusively hydro-power. These shares are listed on the United States stock exchanges and were used for comparison. However, these companies have rather low valuations because the Brazilian economy and its stock market are depressed. Also, some of these comparison firms suffered from droughts that hurt their dam reservoir capacity and power output in recent years.

A progressive series of removal of valuation metrics from the wide array originally employed had the effect of successively raising the potential market value of the company. As the company has become consistently more profitable and financially stable than other publicly-listed companies that it is compared with, CPC arguably has been well-managed and has greater potential than them, and so deserves a valuation premium over the other companies.

Table 2

Market-Value Based Valuation of Columbia Power: Four Scenarios

Track 1. Average of All Companies: Cdn, Brzl	Trailing P/E (Market Value to Net Income)	Forward P/E (Market Value to Est. Net Income)	Price to Sales	Price to Book	Enterprise Value/ Revenue (subtracting debt)	Enterprise Value/ EBITDA (subtracting debt)	Price to Operating Cash Flow	Price to Free Cash Flow	Average (Mean) [Removes Price to Free Cash Flow because of negative values]
1. As is, untaxed	**$1,991.27**	**$626.13**	**$214.63**	**$435.66**	**$402.16**	**$975.71**	**$529.86**	**-$3,624.68**	**$739.35**
2. As is, fully taxed	**$1,473.54**	**$463.34**	**$214.63**	**$435.66**	**$402.16**	**$975.71**	**$392.66**	**-$2,435.88**	**$622.53**
3. No debt, untaxed	**$2,406.68**	**$1,126.06**	**$214.63**	**$435.66**	**$402.16**	**$975.71**	**$529.86**	**-$3,624.68**	**$870.11**
4. No debt, fully taxed	**$1,780.95**	**$833.29**	**$214.63**	**$435.66**	**$402.16**	**$975.71**	**$474.12**	**-$3,141.73**	**$730.93**
Track 2. Market Value for All Four Scenarios, Using All Comparable Cos [removing Price to Free Cash Flow column due to negative values]:									
	Mean		**Median**		**Minimum**		**Maximum**		
1. As is, untaxed	**$739.35**		**$529.86**		**$214.63**		**$1,991.27**		
2. As is, fully taxed	**$622.53**		**$435.66**		**$214.63**		**$1,473.54**		
3. No debt, untaxed	**$870.11**		**$529.86**		**$214.63**		**$2,406.68**		
4. No debt, fully taxed	**$730.93**		**$474.12**		**$214.63**		**$1,780.95**		
Note: The small sample size for Canadian companies makes the average of *all* companies more reasonable.									
Track 3. Market Value for All Four Scenarios, Using All Comparable Cos [removing Price to Free Cash Flow column due to negative values; Price to Sales column due to depressed comparable companies' values]:									
	Mean		**Median**		**Minimum**		**Maximum**		
1. As is, untaxed	**$826.80**		**$577.99**		**$402.16**		**$1,991.27**		
2. As is, fully taxed	**$690.51**		**$449.50**		**$392.66**		**$1,473.54**		
3. No debt, untaxed	**$979.36**		**$752.78**		**$402.16**		**$2,406.68**		
4. No debt, fully taxed	**$816.98**		**$653.70**		**$402.16**		**$1,780.95**		
Note: The small sample size for Canadian companies makes the average of *all* companies more reasonable.									
Track 4. Market Value for All Four Scenarios, Using Only Cdn. Renewable Cos [removing Price to Free Cash Flow column due to negative values; Price to Sales, Price to Book and Enterprise Value to Revenue columns due to depressed comparable companies' values]:									
	Mean		**Median**		**Minimum**		**Maximum**		
1. As is, untaxed	**$1,030.74**		**$800.92**		**$529.86**		**$1,991.27**		
2. As is, fully taxed	**$826.31**		**$719.52**		**$392.66**		**$1,473.54**		
3. No debt, untaxed	**$1,259.58**		**$1,050.89**		**$529.86**		**$2,406.68**		
4. No debt, fully taxed	**$1,016.02**		**$904.50**		**$474.12**		**$1,780.95**		
Note: The small sample size for Canadian companies makes the average of *all* companies more reasonable.									

CONCLUSION

This study did not use detailed financial statements, but the summary versions in the reports made available by the company. A more thorough appraisal prior to a proposed floating of CPC shares on a stock market or before the company would be sold to private investors could determine a different value for the company.

At present, the proceeds of such as sale would go to BC Hydro. The proceeds could be used to offset the extra debt BC Hydro has been accruing to build the controversial Site C dam and generating plant in northeastern BC. This money would help reduce the need for BC Hydro to raise utility rates to consumers. Or, the proceeds of the sale could be passed to BC Hydro's owner, the provincial government, to provide a rebate to consumers.

Public Choice Alternatives

Perhaps the proceeds of a sale of Columbia Hydro would be deposited into a provincial fund. The Canada Pension Plan Investment Board, for example, has had a five year 'net normal' rate of return of 11.8% annually, on average, and 6.7% over the past ten years, which included the severe financial market downturn between 2007 and 2009. Therefore, using the recent approximate return of nearly 12% as a guide, if about $1 billion were realized from the sale of CPC, it could result in up to $120 million per year in income, which could be used for the benefit of BC's Hydro consumers, or all of its citizens. If, on the outside chance, $2 billion were realized, as much as $240 million in annual income could be used for various purposes. If this is too optimistic, even at a 6% return, $60 million on $1 billion in sales proceeds or $120 on $2 billion would be useful.

That money would go a long way for, say, two million BC households in restraining the looming escalation in BC Hydro bills. Moreover, $120 million could pay for about 15,000 teachers, nurses, or paramedics, and, of course, $240 million would pay for twice that number. BC taxpayers should have the ultimate say, directly, or indirectly.

BC Hydro has other discrete assets as well, assets that can be sold individually, and the proceeds could offset the capital investment in Site C. To do better with Columbia Power and similar assets, the only things needed are imagination, and, perhaps, some courage.

Rationale for Divestiture or Privatization

While it is up to the people through their elected representatives to decide if a Crown corporation should be sold or otherwise privatized and the proceeds used for the benefit of all citizens or taxpayers, there are some established reasons to embark on such a path, some or all of which are cited for divesting from such enterprises. However, these reasons may not be all reasonable in specific cases.

1. The government has no mandate to own or run a commercial enterprise. The provision of citizens' safety, security, and justice is the government's primary role, and its involvement in the economy should not, theoretically at any rate, extend beyond this involvement.

2. Regulations can be used to accomplish most public policies reason. But, if regulations are not feasible, or if they are too difficult to manage, then a direct contract or subsidy may be more efficient or more effective and less economically disruptive.

3. If a government-controlled enterprise is a monopoly or a near-monopoly, then opportunities are not available in these sectors for investors to create and grow businesses that enrich themselves, give work to employees, purchase supplies, etc.

4. A monopoly or a near-monopoly by government-owned crown corporations would generally result in higher costs for customers than would be the case in a fully competitive marketplace.

5. A government-owned enterprise may compete directly with private firms that employ citizens, all of whom the government is supposed to serve.

6. The government-owned enterprise may compete unfairly against private sector businesses because often they have access to lower-cost government-sourced and guaranteed capital. Consequently, these enterprises may have larger debts than could be tolerated by private corporations. Thus, a government-owned corporation may not have to meet as high standards for profit and cost control allowing these corporations to offer lower than true free market-based competitive pricing.

7. Government-owned firms may not need to pay provincial and/or federal income taxes. This can allow them to supply goods and services more cheaply than private sector companies.

8. Government-owned enterprises may not have a profit orientation or target, and may be given preferential treatment in business activities or even in transgressions, such as labour or environmental abuses.

9. Government-owned enterprises, by virtue of being public sector companies, because they are overseen by politicians, may be places where favoured, but less-than competent, individuals find employment.

10. Since profit is a secondary goal of a government-owned enterprise, it is difficult to evaluate the effectiveness, efficiency or productivity of the enterprise or its employees.

11. Government-owned enterprises are often created as a result of certain time-fixed circumstances, and consequently they often outlive whatever use or public policy role their creators may have had at the time they were created. Often, advances in technology, the modernization of transport, information technology; the evolution of the economy, and availability of products and services make such enterprises obsolete long before governments will consider selling them. In the private sector, firms need to be always adapting or they will decline and eventually go out of business.

12. Government-owned enterprises perpetuate constituencies that surround them, employees, managers, customers, suppliers, and consultants. These interested people can often lobby to keep the enterprise going despite dysfunction or losses. These people are far more motivated to do so than are taxpayers.

13. Because these are not profit-oriented, government-owned enterprises are usually less efficient, and they lower the efficiency of the entire economy. This can make a whole nation less competitive than its global rivals. When taken to its most extreme, as happened in 20th-century communist countries, the businesses were unable to compete against capitalist companies despite their immense subsidies and government support.

14. Funds tied up in government-owned enterprises could be used to reduce government debt or to lower taxes on individuals and corporations, which could then be invested back into the economy.

15. Governments, generally, have poor records in investing in companies that become profitable. If these corporations actually do become successful, they generally have received unusually good market, operational, regulatory, or other conditions that are not all available to private corporations.

16. The greater the number and size of government owned or government sponsored enterprises in an economy, the greater the size and power of the government, which is usually the largest single entity in society, increasing the dangers of abuse of power, including injuring individual citizens, companies, or groups. Recourse against this power diminishes as the portion of the economy the government occupies increases.

FRONTIER CENTRE
FOR PUBLIC POLICY