



V A L U A T I O N S E R I E S

No. 12 / DECEMBER 2018

PUBLIC CHOICE ALTERNATIVES

Without Debt There Would Be Little Capital At All

A VALUATION OF NB POWER

BY IAN MADSEN



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Valuation Series No. 12 • Date of First Issue: December 2018.

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ISSN 1491-78

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EXECUTIVE SUMMARY

Nearly every province in Canada has its dubiously cherished government-owned power utility. Rarely in this country has there been one as hobbled by debt as NB Power, 'NBP'. The fundamental business is relatively sound and appears to be resilient. However, its capital structure is over 90 percent funded by debt, which is hampering its ability to invest and adapt to the future. As a result of this heavy debt load, the valuations in this study attempt to estimate the value of the company as is, and also without any debt at all. In reality, it is nearly unavoidable that the taxpayers of New Brunswick will have to assume much or most of the debt of NBP if it is to prosper in the future, whether or not it is divested to private individual, institutional, or strategic investors. This analysis will show it cannot reasonably service more than about one quarter of its current short- and long-term debt load of nearly seven billion dollars.

Using an intrinsic value method, and discounting to the present, New Brunswick's interest in NBP's projected future free cash flows, as the company is today, but taxed at statutory rates, could range from a mean of -\$2,031M to a median of \$1,578, with a maximum of -\$902M. It would range between a median of \$1,912M and a mean of \$2,461M if the company were to become debt-free, but fully taxable. Should it remain encumbered with one quarter of its outstanding short- and long-term debt, the median value is calculated as \$250M and the mean as \$799M.

Under the market-based valuation system, the current, 'as is'—but now fully taxed-value ranges from a median of \$2,611M to \$11,567M, with a median value of \$1,135M, and a mean (average) value of \$1,389M. Assuming the removal of its entire debt load, the range could be between \$2,611M and \$8,060M, with a median value of \$4,370M, and a mean (average) value of \$6,195M. Should the company retain only one quarter of its debt, its theoretical value could range from a median of \$2,708M to a mean of \$4,533M. However, these figures are not very conservative. Several of the companies used for comparison purposes had high financial valuation ratios because of depressed income, cash flow, or other metrics. Intensive examination of the physical assets of NB Power, evaluation of its business practises, and scrutiny of its accounting would be necessary for a much more precise valuation range for the company and that is beyond the scope of this study.

INTRODUCTION

NB Power, A History

Electric power generation in New Brunswick dates from 1884. The New Brunswick Electric Power Commission bought the St. John-based New Brunswick power in 1948. Various other towns in the province had their own generating companies using hydro power, coal, or other energy. Eventually, all these local companies were acquired by the Commission. Power shortages in the 1940's brought about a plan for extensive new hydroelectric dams, all of which were built by the Commission in the 1950s and later on. Later, the Commission adopted the name 'Énergie New Brunswick Power'.

More thermal and hydro facilities were built to satisfy escalating demand in the 1960s. One major facility was ill-timed, as it used oil as a fuel, and it came online as the price of oil skyrocketed in the 1970s. During this time, the Point Lepreau Nuclear Power plant was built and came online in 1981. The most recent new capacity is a coal-fired facility at Belledune, which the company is re-evaluating to use other fuels. The energy mix of the company is unevenly distributed among hydro, coal and nuclear, with some minor solar, biomass and wind power as well.¹

1. Énergie NB Power. "History". <https://www.nbpower.com/en/about-us/history>.

INTRINSIC VALUE: VALUATION OF NBP 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 Tables 1 & 2). The company's free cash flow growth rate range was a restrained 1 to 4 percent, and the required rate of return or cost of capital range was from 5 to 8 percent. The firm has experienced higher growth rates in the past, so higher growth in the future could be reasonable, however economic growth and population growth in the province are fairly stagnant. Its cost of capital, given low expectations and high current valuations in the stock market, could well be lower than the range used (and thus raise its estimated value),

although there is also a chance that interest rates and the rate of return investors demand on equity (share) investment could increase. The statutory tax rate used in calculations may be lower in the future, as there is continued global pressure to lower corporate tax rates, exemplified by the recent drop in US corporation income tax rates. Until recently, capital expenditure often exceeded operating cash flow. The assumption was made that it would stay restrained in growth. With the existing debt load, the value of the company is negative, as its free cash flow is negative. Without debt, its worth is calculated as ranging between \$1,093M and \$7,648M, with a median of \$1,912M and a mean of \$2,461M.

Table 1

Intrinsic Value, Using Fully Taxed Free Cash, 'As Is'

Valuation Matrix - Presented Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return = Growth Rate)

Projected Fully Taxed Free Cash Flow for 2017 (\$M): \$ 63.11

Matrix Values (\$M) g==v; r==>	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	-\$ 1,578	-\$ 1,262	-\$ 1,052	-\$ 902	-\$ 789	-\$ 701	-\$ 631
1.00%	-\$ 2,104	-\$ 1,578	-\$ 1,262	-\$ 1,052	-\$ -902	-\$ 789	-\$ 701
2.00%	-\$ 3,156	-\$ 2,104	-\$ 1,578	-\$ 1,262	-\$ 1,052	-\$ 902	-\$ 789
3.00%	-\$ 6,311	-\$ 3,156	-\$ 2,104	-\$ 1,578	-\$ 1,262	-\$ 1,052	-\$ 902
4.00%	--	-\$ 6,311	-\$ 3,156	-\$ 2,104	-\$ 1,578	-\$ 1,262	-\$ 1,052
5.00%	\$ 6,311	--	-\$ 6,311	-\$ 3,156	-\$ 2,104	-\$ 1,578	-\$ 1,262
6.00%	\$ 3,156	\$ 6,311	\$ --	-\$ 6,311	-\$ 3,156	-\$ 2,104	-\$ 1,578
7.00%	\$ 2,104	\$ 3,156	\$ 6,311	\$ --	-\$ 6,311	-\$ 3,156	-\$ 2,104

	Minimum	Maximum	Median	Mean (Average)
Total(s)	-\$ 6,311	-\$ 902	-\$ 1,578	-\$ 2,031

Source: Company annual reports, consultant projections and modelling.

Note on range of growth rate, "g", above: Operating Cash Flow and Net Income have been growing erratically, but for the long-term the growth rate is likely to be roughly in line with the nominal economic growth rate, assumed here to be 2-4%.

Note on range of required or expected rate of return or discount rate or cost of capital, "r", above: This is a notional range of projected likely long-term stock market growth rate and the equity risk premium over high yield unsecured ("junk") bonds.

Table 2

Intrinsic Value, Using Fully Taxed Free Cash Flow, All Debt Removed**Valuation Matrix** - Presented Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return = Growth Rate)**Projected Fully Taxed Free Cash Flow Proxy (Actually Net Income for 2017 (\$M): \$ 76.48**

Matrix Values (\$M) g==v; r==>	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	\$ 1,912	\$ 1,530	\$ 1,275	\$ 1,093	\$ 956	\$ 850	\$ 765
1.00%	\$ 2,549	\$ 1,912	\$ 1,530	\$ 1,275	\$ 1,093	\$ 956	\$ 850
2.00%	\$ 3,824	\$ 2,549	\$ 1,912	\$ 1,530	\$ 1,275	\$ 1,093	\$ 956
3.00%	\$ 7,648	\$ 3,824	\$ 2,549	\$ 1,912	\$ 1,530	\$ 1,275	\$ 1,093
4.00%	--	\$ 7,648	\$ 3,824	\$ 2,549	\$ 1,912	\$ 1,530	\$ 1,275
5.00%	-\$ 7,648	--	\$ 7,648	\$ 3,824	\$ 2,549	\$ 1,912	\$ 1,530
6.00%	-\$ 3,824	-\$ 7,648	\$ --	\$ 7,648	\$ 3,824	\$ 2,549	\$ 1,912
7.00%	-\$ 2,549	-\$ 3,824	-\$ 7,648	\$ --	\$ 7,648	\$ 3,824	\$ 2,549

	Minimum	Maximum	Median	Mean (Average)
	\$ 1,093	\$ 7,648	\$ 1,912	\$ 2,461
Total Debt	\$ 6,648	\$ 6,648	\$ 6,648	\$ 6,648
Net Value, Full Debt Retained	\$ 5,555	\$ 1,000	\$ 4,736	\$ 4,187
Half Debt	\$ 3,324	\$ 3,324	\$ 3,324	\$ 3,324
Net Value, Half-Free of Debt	-\$ 2,231	-\$ 4,324	-\$ 1,412	-\$ 863
One Quarter of Existing Debt	-\$ 1,662	-\$ 1,662	-\$ 1,662	-\$ 1,662
Net Value, Retaining Only 1/4 of Debt	-\$ 569	-\$ 5,986	-\$ 250	-\$ 799

Source: Company annual reports, consultant projections and modelling.

Note on range of growth rate, "g", above: Operating Cash Flow and Net Income have been growing erratically, but for the long-term the growth rate is likely to be roughly in line with the nominal economic growth rate, assumed here to be 2-4%.

Note on range of required or expected rate of return or discount rate or cost of capital, "r", above: This is a notional range of projected likely long-term stock market growth rate and the equity risk premium over high yield unsecured ("junk") bonds.

Should the company retain one quarter of its existing short- and long-term debt, its median value is calculated as \$250M, its mean as \$799M. The

implication is that its value is very sensitive not only to the growth and required return rates used, but to how much debt is sustainable.

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

With respect to the market-peer comparison valuation, there are a few complications. The electric utility sector includes a number of companies with depressed net income and depressed cash flow, at least at this time (see Tables 3 & 4). Some of the US exchange-listed peers are Latin American and have had financial or operational issues; the most similar companies have had substantially negative free cash flow, meaning they require further financial inflow. Their recent net income is also depressed.

As noted in the executive summary, the 'as is' current value of the company, with current full debt load but

also being taxable, as it would be should it be sold off, ranges from \$167M to \$3,353M, with a median of \$1,135M and a mean (average) of \$1,389M. Only five valuation metrics were usable, and the averages were depressed by the very low book value of NB Power, as its capital consists of over 90 percent debt. Were it to be relieved of all debt, its median value is calculated as \$4,370M and its mean (average) as \$6,195M. Should it retain one quarter of its debt load, its median value is calculated as \$2,708M and its mean (average) as \$4,533M. Please see the details of the models' results in Tables 3 and 4.

Table 3

Market Valuation, Using Publicly Listed Comparison Company Valuation Metrics

As Is, i.e., Full Debt Load, Fully Taxable Valuation metrics applied to NB Energy, i.e., market value of common equity (Figures \$M)	Trailing P/E (Market Value to Net Income)	Price to Sales	Price to Book	Enterprise Value/Revenue (subtracting net debt)	Price to Operating Cash Flow
Average Six Canada-Listed Renewable-Dominated Utilities	\$ 2,383	\$ 5,985	\$ 865	\$ 5,601	\$ 2,520
Average Six Canada-Listed Non-Renewable Dominated Utilities	\$ 686	\$ 2,562	\$ 402	-\$ 1,164	\$ 1,616
Average Eight U.S.-Listed Renewable-Heavy Power Utilities	\$ 336	\$ 1,971	\$ 357	-\$ 2,910	\$ 1,616
Average of All the Above	\$ 1,135	\$ 3,353	\$ 531	\$ 167	\$ 1,759
	Mean (Average)	Median	Minimum	Maximum	
Estimated Total Value	\$ 1,389	\$ 1,135	\$ 167	\$ 3,353	

Source: Author's calculations based on a model using summary versions in annual reports from the company.

Table 4

Market Valuation Using Publicly Listed Comparison Company Valuation Metrics

Valuation metrics applied to NB Energy; i.e., market value of common equity. Figures in \$M.	Trailing P/E Market Value to Net Income	Forward P/E (Market Value to Est. Net Income)	Price to Sales	Price to Book Value	Enterprise Value/ Revenue (minus debt)	Enterprise Value/EBITDA (minus debt)	Price to Operating Cash Flow
Average Six Canada-Listed Renewable-Dominated Utilities	\$ 16,734	\$ 13,055	\$ 7,414	\$ 18,825	\$ 15,175	\$ 3,351	\$ 3,740
Average Six Canada-Listed Non-Renewable-Dominated-Power Utilities	\$ 4,817	\$ 3,758	\$ 3,174	\$ 8,745	\$ 6,793	\$ 2,354	\$ 2,399
Average Eight U.S.-Listed Renewable-Heavy Power Utilities	\$ 2,359	\$ 1,841	\$ 2,442	\$ 7,764	\$ 4,631	\$ 6,647	\$ 1,923
Average of All Above	\$ 7,970	\$ 4,253	\$ 4,154	\$ 11,667	\$ 8,443	\$ 4,370	\$ 2,611
	Mean (Average)	Median	Minimum	Maximum			
Total Market Value	\$ 6,195	\$ 4,370	\$ 2,611	\$ 11,567			
Total Debt	\$ 6,648	\$ 6,648	\$ 6,648	\$ 6,648			
Net Value, Full Debt Retained	-\$ 453	-\$ 2,278	-\$ 4,037	\$ 4,919			
Half Debt	\$ 3,324	\$ 3,324	\$ 3,324	\$ 3,324			
Net Value, Half-free of Debt	\$ 2,871	\$ 1,046	-\$ 713	\$ 8,243			
One Quarter of Existing Debt	\$ 1,662	\$ 1,662	\$ 1,662	\$ 1,662			
Net Value, Retaining Only 1/4 of Debt	\$ 4,533	\$ 2,708	\$ 949	\$ 9,906			

Source: Author's calculations based on a model using summary versions in annual reports from the company.

CONCLUSION

This study used detailed financial statements, but the trends in net income, costs of power, capital expenditures and the high rate of capital expenditures effect on free cash flow made some estimates of future net income and free cash flow not fully reliable. A more thorough appraisal prior to a proposed floating of NBP shares on a stock market or before the company would be sold to private investors could determine a different value for the company.

As far as is known or at least obvious, the proceeds of such a sale would go to the province of New Brunswick. If some of the proceeds were retained within the company, they could be used to further reduce its debt. Taxpayers and citizens may have to face the reality that not all of the company's debt can or will be sustainable, and whether or not the utility is sold in whole or in part, some of the nearly seven billion dollars of debt may need to be assumed by the province; i.e., ultimately those same taxpayers and citizens.

APPENDIX 1:

RATIONALE FOR DIVESTITURE OR PRIVATIZATION

While it is up to the people through their elected representatives to decide if a Crown corporation or other government agency or entity should be sold or otherwise privatized and the proceeds used for the benefit of all citizens and taxpayers, there are some established reasons to embark on such a path, some or all of which are cited for divestiture of such enterprises but may not be applicable in any single case.

1. The government has no mandate to own or run a commercial enterprise. Libertarians, 'Classical Liberals' and free-market conservatives believe that the provision of citizens' safety, security and justice is the government's primary role, and its involvement in the economy should generally not extend beyond this.
2. Regulation can usually accomplish any public policy reason for direct involvement in an industry. If regulation is not easily feasible, then a direct contract or subsidy to any affected individuals, entity or entities may be more efficient or effective and less economically disruptive or costly.
3. If a government-controlled or sponsored enterprise has a monopoly position, near-monopoly, or effective monopoly in a line or lines of business or businesses, then opportunities are lost in one or more commercial or potentially commercial sectors for entrepreneurs and investors to try to create and grow businesses to enrich and sustain themselves, employees, suppliers, and others.
4. A monopoly, or near-monopoly, or effective monopoly market position by a government-owned or sponsored entity could result in far higher prices for customers, the general public, or a section of the public, than would be the case in a fully competitive marketplace for the industry involved.
5. A government-owned or -sponsored enterprise may compete directly against private sector firms, which are owned by or employ citizens, or against individual citizens, all of whom the government is supposed to serve, not disadvantage.
6. The government-owned or -sponsored enterprise may compete unfairly against its private sector rivals in that it had or has access to lower-cost government-sourced and -guaranteed capital (debt). It may have a much larger debt component in its capital versus that which would be tolerated in the private sector. Thus, it may not have to meet high standards for profit and cost control, allowing it to offer lower than true free market-based competitive pricing.
7. Government-owned firms may not need to pay provincial or federal income taxes. This can allow such firms to supply goods or services more cheaply than the private sector companies they are competing with.
8. Government-owned or -sponsored enterprises may not have any kind of profit orientation or target, may be used as public policy vehicles and may be given preference in their activities or even in their transgressions, such as labour or environmental abuses.
9. Government-owned or -sponsored enterprises, by virtue of being public sector vehicles overseen by bureaucrats and politicians, may be places where favoured individuals find employment, particularly at management levels.

10. Since profit is a secondary goal of a government-owned or -sponsored enterprise, it is difficult to evaluate the effectiveness, efficiency or productivity of the enterprise or its employees. Consequently, these employees and assets may not be very productive or effective.
11. In some cases, government-owned entities are monopolies or effective monopolies, and use their market-dominating power to charge higher prices than would be the case in a fully competitive sector with several viable companies in intense rivalry to offer customers the best product or service at the best price.
12. Government-owned or -sponsored enterprises are often creations of certain time-fixed circumstances and outlive whatever use or public policy role their creators may have conceived. Often, advances in technology; the modernization of transport, telecommunication or information technology; the evolution of the economy and available products and services and the increasing standard of living make these enterprises potentially obsolete. In the private sector, firms and individuals must adapt and evolve, or decline.
13. Government-owned or -sponsored enterprises perpetuate their possibly obsolete existences by virtue of the constituencies that build up around them: employees, managers, directors and bureaucrats, customers, suppliers and associated advocates or consultants. They can lobby to keep the enterprise going, despite dysfunction or losses. They are far more motivated to do so than are the taxpayers, whose average cost is much less per person and may be indirect, hidden or difficult to calculate.
14. Because they are not profit-oriented, government-owned or -sponsored enterprises are usually less efficient, and thus they lower the overall efficiency of the entire economy. This can make a whole nation less competitive than its global rivals are, whether nations or individual companies. The effects are worse the greater the government involvement in the economy. When taken to its most extreme, as happened in 20th-century communist nations, the countries were unable to compete against capitalist companies, despite their immense direct and indirect subsidies, government support and the lack of profit requirement.
15. Funds tied up in the capital of government-owned or -sponsored enterprises could be used to reduce government debt or lower taxes on individuals or corporations, which they could then spend or invest as they freely choose, and thus they could inject money back into the economy in more-lucrative ways.
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. Effective capacity of opposition or recourse against this power diminishes as the proportion of the economy the government occupies increases.

