



VALUATION SERIES

No. 30 / SEPTEMBER 2019

PUBLIC CHOICE ALTERNATIVES

As Falls Muskrat Falls, So Falls Nalcor

A VALUATION & STRATEGIC APPRAISAL OF
NEWFOUNDLAND & LABRADOR'S ELECTRIC UTILITY

BY IAN MADSEN



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Valuation Series No. 30 • Date of First Issue: September 2019.

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ISSN 1491-78

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VALUATION SERIES*No. 30 / SEPTEMBER 2019***PUBLIC CHOICE ALTERNATIVES:****As Falls Muskrat Falls, So Falls Nalcor****A VALUATION & STRATEGIC APPRAISAL OF
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EXECUTIVE SUMMARY

Nalcor is the electric power generating holding company supplying the province of Newfoundland and Labrador, 'NL'. It is also the parent company of Newfoundland & Labrador Hydro, 'NLH', the actual utility that distributes and sells electric power to households, industrial and commercial customers, and government and other institutions in the province. Its principal assets are NLH, the Churchill Falls power unit, and the Muskrat Falls generating facility.

The Muskrat Falls project is nearly complete. Valuing the company at this point is misleading, as the output from the project will not be fully online for the whole year until 2021.

Using an **intrinsic value method**, and discounting to the 'present', i.e., 2021, shareholder equity in Nalcor's projected future free cash flows, using net income as a proxy for free cash flow (which is currently, and likely foreseeably, very low or negative) as Nalcor is today, but debt-free, taxed at statutory rates, is estimated at a minimum of \$2.36B to a maximum of \$16.52B, with a tighter, more plausible range of a median (midpoint of all the relevant values) of \$4.13B to a mean (simple average of all the relevant values) of \$5.32B.

Under the **market-based valuation system**, using seven viable, standard valuation metrics (such as trailing and forward Price/Earnings, Price/Sales, Price/Book Value, Price/Operating Cash Flow), and comparisons with six Canadian and seven US exchange publicly listed electric-dominated utilities with substantial renewable energy generation capacity, the 2021 value ranges from \$2.71B to positive \$9.61B, with a median of \$6.76B and a mean of \$5.79B. Renewable energy companies have a premium valuation.

The company has negative free cash flow and low returns on assets, equity and capital employed. Utilities usually pay a dividend to investors. The company is showing sufficient income to pay a dividend, but given current low cash generation, investors may not consider the dividend sustainable. However, if the company can show a credible, viable plan of redirection and commercial success and resilience to challenges, a share flotation could be successful, which could lead to a dividend thereafter, but its debt burden must be cut by more than half.

As its debt level is high in relation to its cash generation capacity and its capital expenditure needs exceed operating cash flow, much, if not *all of the first sale proceeds of treasury shares in a partial divestiture might or should be used to lower Nalcor's debt* and *not* go to the provincial treasury. The provincial government will very likely still have to sell assets and seek debt restructuring assistance from the federal government to keep Nalcor financially viable. Fortunately, while full market pricing of Churchill Falls output is not until 2041, the present value of the future enormous cash flows of that output could help finance the restructuring and successful sale of Nalcor, taking it out of the demonstrated unreliable hands of the government.

Caveat: This report is nothing approaching a prospectus. Only intensive, meticulously minute appraisal of all of Nalcor's assets, including its physical assets, all its accounts and hidden assets and liabilities, would give an accurate valuation of the company, albeit still dependent on subjective reasoning and assumptions. Even then it would not necessarily indicate what magnitude of proceeds could or would be garnered in a divestment. The estimates, projections, observations or analyses herein are neither definitive nor authoritative. Other analysts may have valid, alternative ways of scrutinizing and valuing Nalcor.

INTRODUCTION

History and Current State of N&L Hydro and its Operating Status

Nalcor is the holding company which owns Newfoundland & Labrador Hydro, 'N&L Hydro', or 'NLH', the electric power utility serving Labrador and the Island of Newfoundland, and a number of other subsidiaries, including 65.8 percent of the Churchill Falls Power Corporation, which mainly sells power to Hydro-Québec, and the nearly-complete Muskrat Falls generating facility.¹ Nalcor is entirely owned by the provincial government of Newfoundland and Labrador.

Nalcor also sells power to Atlantic Canada and beyond, and as controlling shareholder of the Churchill Falls hydroelectric facility, sells power to neighbouring Québec's provincial utility, Hydro-Québec, under a long term contract that lasts until 2041.² After that time, Nalcor, or its successor in ownership of Churchill Falls Power Corporation, will be able to sell its abundant electricity freely to anyone at any price, in contrast to the fixed price determined fifty years ago, that it receives today. This perceived suboptimal deal was the political rationale for embarking on the Muskrat Falls project.

Other subsidiaries are involved in transmission or energy marketing.³ Oil and gas assets and an offshore oil platform fabrication facility at Bull Arm were transferred to provincial government ownership in the fourth quarter of 2018.⁴

In its present form N&L Hydro embarked on its first major hydro-electric project, Bay D'Espoir, completing it in 1967, and subsequently linking its output to a grid that included several of the major towns and cities of the Island of Newfoundland.⁵ The Churchill Falls facility was built from 1966 through 1974 and cost about \$950M at that time, or around \$7B in current Canadian dollars—a bargain compared to Muskrat Falls, which will produce far less power (824 MW versus 5,428 MW).⁶

The Newfoundland partner found it hard to contribute its share of the construction costs, which led to it agreeing to let Hydro-Québec, the only buyer for the power, buy the generating output at a low fixed price, renewed at Hydro-Québec's option until 2041. This has meant that Hydro-Québec will have benefited by an estimated \$250B in windfall profits.⁷ This arrangement has been seen as unfair in Newfoundland, and was a major motivation in the decision to build the Muskrat Falls facility.

INTRINSIC VALUE: VALUATION OF NALCOR AS A BUSINESS, IN ITS CURRENT STATE

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 (please see Table 1). A simple capitalization perpetuity formula was used, which is appropriate for a mature company. The company's free cash flow nominal (i.e., not adjusted for inflation) growth rate range was held within a restrained 2 to 4 percent range, and the required rate of return or cost of capital range was from 5 to 8 percent.

The firm could theoretically have higher growth in the future, so a modest growth rate was considered reasonable. Its cost of capital, given low expectations, the high quality of the renewable assets, the prospect of replacing legacy diesel generation with low-cash cost hydro power, 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. Capital expenditure in recent years has exceeded operating cash flow. The assumption was made that capital spending would stay restrained in growth but projections indicate that it will likely remain higher than operating cash flow.

The proprietary model used in projecting the line items that determine the various inputs into the intrinsic value employ calculations based on recent and historic trends in those line items, then performs various analytics to project the line item numbers for the following year. All main constituent line-item factors that determine net income, operating and free cash flow were projected on the basis of historic behaviour and statistical analysis.

Neither 2018 nor 2019 projections could be used, as the revenue from Muskrat Falls will not be for a full year until 2021. Hence, projections were made for 2021, for both free cash flow and net income used as a proxy for free cash flow. This latter approach makes some conceptual sense, as over time a steady-state mature company will generally have capital expenditures that roughly cover depreciation expense, which arithmetically would make net income equal to free cash flow.

Table 1

Intrinsic Value, 2021, Using Free Cash Flow**CASE 1: Present Value of Projected Fully Taxed Free Cash Flow for FY2021 (\$B)**Present Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return [r] = Growth Rate [g])

Projected Fully Taxed Free Cash Flow Estimate for FY2021 (\$B): \$ 0.0642

Matrix Values (\$M) $g=v; r=>$	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	\$ 1.61	\$ 1.28	\$ 1.07	\$ 0.92	\$ 0.80	\$ 0.71	\$ 0.64
1.00%	\$ 2.14	\$ 1.61	\$ 1.28	\$ 1.07	\$ 0.92	\$ 0.80	\$ 0.71
2.00%	\$ 3.21	\$ 2.14	\$ 1.61	\$ 1.28	\$ 1.07	\$ 0.92	\$ 0.80
3.00%	\$ 6.42	\$ 3.21	\$ 2.14	\$ 1.61	\$ 1.28	\$ 1.07	\$ 0.92
4.00%	--	\$ 6.42	\$ 3.21	\$ 2.14	\$ 1.61	\$ 1.28	\$ 1.07
5.00%	-\$ 6.42	--	\$ 6.42	\$ 3.21	\$ 2.14	\$ 1.61	\$ 1.28
6.00%	-\$ 3.21	-\$ 6.42	\$ --	\$ 6.42	\$ 3.21	\$ 2.14	\$ 1.61
7.00%	-\$ 2.14	-\$ 3.21	-\$ 6.42	\$ --	\$ 6.42	\$ 3.21	\$ 2.14

	Minimum	Maximum	Median	Mean (Average)
Total Market Value (\$B)	\$ 0.92	\$ 6.42	\$ 1.61	\$ 2.07
Total Estimated 2021 IMF Debt	\$ 13.95	\$ 13.95	\$ 13.95	\$ 13.95
Value Less Total IMF Debt	-\$ 13.03	-\$ 7.53	-\$ 12.34	-\$ 11.88
One Half Total IMF Debt	\$ 6.98	\$ 6.98	\$ 6.98	\$ 6.98
Value Less One Half IMF Debt	-\$ 6.06	-\$ 0.55	-\$ 5.37	-\$ 4.91
One Third Total IMF Debt	\$ 4.65	\$ 4.65	\$ 4.65	\$ 4.65
Value Less One Third IMF Debt	-\$ 3.73	\$ 1.77	-\$ 3.04	-\$ 2.58
One Quarter Total IMF Debt	\$ 3.49	\$ 3.49	\$ 3.49	\$ 3.49
Value Less One Quarter IMF Debt	-\$ 2.57	\$ 2.94	-\$ 1.98	-\$ 1.42

Note: Actual Net Value would be less than those estimated above, as the figures above are not adjusted to include interest expense on the debt.

Note: Total IMF Debt long-term debt and promissary note totals from the year prior to financing of Muskrat Falls and total IMF project debt.

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

As the table above shows, the company cannot really sustain a debt of more than about one quarter of its current level, and that is before including the actual interest cost on the debt. Using this alternative method, the calculations resulted in estimates of a minimum of \$2.36B to a maximum

of \$16.52B, with a tighter, more plausible range of a median (midpoint of all the relevant values) of \$4.13B to a mean (simple average of all the relevant values) of \$5.32B. Please see the results below in Table 2.

Table 2

Intrinsic Value, Using Net Income as a Proxy for Free Cash Flow**CASE 2: Projected Fully Taxed Net Income as Proxy for Fully Taxed Free Cash Flow for FY2021 (\$B)**Present Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return [r] = Growth Rate [g])

Projected Fully Taxed Free Cash Flow Estimate for FY2021 (\$B): \$ 0.1652

Matrix Values (\$B) $g=v; r=>$	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	\$ 4.13	\$ 3.30	\$ 2.75	\$ 2.36	\$ 2.07	\$ 1.84	\$ 1.65
1.00%	\$ 5.51	\$ 4.13	\$ 3.30	\$ 2.75	\$ 2.36	\$ 2.07	\$ 1.84
2.00%	\$ 8.26	\$ 5.51	\$ 4.13	\$ 3.30	\$ 2.75	\$ 2.36	\$ 2.07
3.00%	\$ 16.52	\$ 8.26	\$ 5.51	\$ 4.13	\$ 3.30	\$ 2.75	\$ 2.36
4.00%	--	\$ 16.52	\$ 8.26	\$ 5.51	\$ 4.13	\$ 3.30	\$ 2.75
5.00%	-\$ 16.52	--	\$ 16.52	\$ 8.26	\$ 5.51	\$ 4.13	\$ 3.30
6.00%	-\$ 8.26	-\$ 16.52	\$ --	\$ 16.52	\$ 8.26	\$ 5.51	\$ 4.13
7.00%	-\$ 5.51	-\$ 8.26	-\$ 16.52	\$ --	\$ 16.52	\$ 8.26	\$ 5.51

	Minimum	Maximum	Median	Mean (Average)
Total Market Value (\$B)	\$ 2.36	\$ 16.52	\$ 4.13	\$ 5.32
Total Estimated 2021 IMF Debt	\$ 12.70	\$ 12.70	\$ 12.70	\$ 12.70
Value Less Total IMF Debt	-\$ 10.34	\$ 3.82	-\$ 8.57	-\$ 7.38
One Half Total IMF Debt	\$ 9.53	\$ 9.53	\$ 9.53	\$ 9.53
Value Less One Half IMF Debt	-\$ 7.16	\$ 7.00	-\$ 5.99	-\$ 4.21
One Third Total IMF Debt	\$ 6.95	\$ 6.95	\$ 6.95	\$ 6.95
Value Less One Third IMF Debt	-\$ 3.99	\$ 10.17	-\$ 2.22	-\$ 1.03
One Quarter Total IMF Debt	\$ 3.18	\$ 3.18	\$ 3.18	\$ 3.18
Value Less One Quarter IMF Debt	-\$ 0.81	\$ 13.95	\$ 0.96	\$ 2.14

Note: Actual Net Value would be less than those estimated above, as the figures above are not adjusted to include interest expense on the debt.

Note: Total IMF Debt long-term debt and promissary note totals from the year prior to financing of Muskrat Falls plus total IMF project debt.

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

As the table above shows, just as in the previous iteration, the company cannot really sustain a debt of more than about one quarter of its current level, and that is before including the actual interest cost on the debt.

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

With respect to the market-peer comparison valuation, there are a few complications. The Canadian electric utility sector includes a number of companies with depressed free cash flow, at least at this time. With US peers, the most similar companies have substantially negative free cash flow, meaning they require further financial inflow (i.e., they must borrow more or issue more share capital). Their recent net income is also depressed.

As noted in the Executive Summary, using seven standard valuation metrics (trailing and forward Price/Earnings, Price/Sales; Price/Book Value; Enterprise Value to Earnings Before Interest, Taxes & Depreciation & Amortization [EV/EBITDA]; Revenue/EBITDA; Price/Operating Cash Flow), the current value ranges from \$2.71B to \$9.61B, with a median of \$6.76B and a mean of \$5.79B. The very close proximity of the two latter figures does not indicate that they are precise or accurate in any absolute way.

Table 3

Market Valuation Using Financial Metrics from Comparable Companies

Method 2: Nalcor Projections are for FY2021; Fully Taxed, Debt Free

Valuation metrics applied to Nalcor; ie, Market Value of Common Equity. Figures in \$B.	Price to Sales	Forward P/E (Market Value to Estimated Net Income)	Enterprise Value/Revenue (subtracting net debt)	Price to Book Value	Enterprise Value/Revenue (subtracting net debt)	Enterprise Value/EBITDA (subtracting net debt)	Price to Operating Cash Flow
Average Six Canadian Renewable-Dominated Utility Companies	\$ 9.02	\$ 6.67	\$ 4.47	\$ 14.03	\$ 10.00	\$ 9.39	\$ 4.25
Average Six Canadian Non-Renewable-Dominated Utility Companies	\$ 4.80	\$ 7.07	\$ 1.77	\$ 8.19	\$ 9.14	\$ 6.58	\$ 5.21
Average Seven US-Listed Renewable-Dominated Utility Companies	\$ 2.10	\$ 2.03	\$ 2.10	\$ 2.03	\$ 8.19	\$ 6.62	\$ 4.28
Average of All Above	\$ 4.78	\$ 5.90	\$ 2.71	\$ 9.61	\$ 5.76	\$ 7.48	\$ 4.28

Source: Capital IQ via Yahoo!Finance, additional material from BMO-Investorline, Valuation model formulae.

Market Value Using Comparable Companies and Seven Viable Valuation Ratios

	Minimum	Maximum	Median	Mean (Average)
Total Market Value (\$B)	\$ 2.71	\$ 9.61	\$ 6.76	\$ 5.79
Total Estimated 2021 IMF Debt	\$ 13.95	\$ 13.95	\$ 13.95	\$ 13.95
Value Less Total IMF Debt	-\$ 11.25	-\$ 4.35	-\$ 8.20	-\$ 8.16
3/4 Total IMF Debt	\$ 10.46	\$ 10.46	\$ 10.46	\$ 10.46
Value Less 3/4 IMF Debt	-\$ 7.76	-\$ 0.86	-\$ 4.71	-\$ 4.68
One Half IMF Debt	\$ 6.98	\$ 6.98	\$ 6.98	\$ 6.98
Value Less One Half IMF Debt	-\$ 4.27	\$ 2.63	-\$ 1.22	-\$ 1.19
One Quarter Total IMF Debt	\$ 3.49	\$ 3.49	\$ 3.49	\$ 3.49
Value Less One Quarter IMF Debt	-\$ 0.78	\$ 6.12	\$ 2.30	\$ 2.27

Source: Calculations based on Annual Report financial data, comparison company data from Capital IQ via Yahoo!Finance.

Note: Actual Net Value would be less than those estimated above, as the figures above are not adjusted to include interest expense on the debt.

Note: Total IMF Debt, long-term debt, and promissary note totals from the year prior to financing of Muskrat Falls plus total IMF project debt.

FINANCIAL PERFORMANCE OF NALCOR, AND TRENDS IN SAME

As shown in Table 4 below, all of Nalcor's returns on assets, equity, and capital employed, have deteriorated over the past nine years whether the numerator in the ratios is Earnings Before Interest, Taxes and Depreciation and Amortization (EBITDA); net income; operating cash flow; or free cash flow. While this may not be a problem

unique to Nalcor, as other utilities appear to have similar issues of low profitability, low returns on investment, and negative free cash flow, some of them have improved in recent years. These return ratios are also lower than the interest rates of 3 or 4 percent or more that Nalcor is paying on the debt capital it is borrowing.⁸

Table 4										
Capital Efficiency Performance Metrics										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1. RETURN ON ASSETS										
Return on Assets using EBITDA (Earnings Before Interest, Taxes and Depreciation & Amortization)										
EBITDA (\$M)	\$ 216	\$ 198	\$ 253	\$ 322	\$ 276	\$ 315	\$ 213	\$ 277	\$ 388	\$ 423
Average Assets (\$M)	\$ 2,383	\$ 2,555	\$ 2,718	\$ 2,923	\$ 3,243	\$ 6,492	\$ 10,028	\$ 11,348	\$ 13,038	\$ 15,908
RoA, EBITDA	9.08%	7.76%	9.32%	11.02%	8.51%	4.86%	2.12%	2.44%	2.98%	2.66%
Return on Assets using Fully Taxed Net Income										
Fully Taxed Net Income (\$M)	\$ 57.54	\$ 42.00	\$ 54.25	\$ 88.69	\$ 64.89	\$ 66.92	\$ 80.92	-\$ 13.44	\$ 95.20	\$ 44.10
Average Assets (\$M)	\$ 2,383	\$ 2,555	\$ 2,718	\$ 2,923	\$ 3,243	\$ 6,492	\$ 10,028	\$ 11,348	\$ 13,038	\$ 15,908
RoA, NI	2.41%	1.64%	2.00%	3.03%	2.00%	1.03%	0.81%	-0.12%	0.73%	0.28%
Return on Assets using Fully Taxed Operating Cash Flow										
Fully Taxed Operating Cash Flow (\$M)	\$ 150	\$ 195	\$ 188	\$ 130	\$ 272	\$ 413	\$ 111	\$ 233	\$ 178	\$ 191
Average Assets (\$M)	\$ 2,383	\$ 2,555	\$ 2,718	\$ 2,923	\$ 3,243	\$ 6,492	\$ 10,028	\$ 11,348	\$ 13,038	\$ 15,908
RoA, OCF	6.30%	7.61%	6.92%	4.44%	8.39%	6.36%	1.11%	2.05%	1.37%	1.20%
Return on Assets using Fully Taxed Free Cash Flow										
Fully Taxed Free Cash Flow (\$M)	-\$ 100	-\$ 38	-\$ 4	-\$ 127	-\$ 238	-\$ 5,103	\$ 128	-\$ 92	-\$ 1,445	-\$ 4,346
Average Assets (\$M)	\$ 2,383	\$ 2,555	\$ 2,718	\$ 2,923	\$ 3,243	\$ 6,492	\$ 10,028	\$ 11,348	\$ 13,038	\$ 15,908
RoA, FCF	-4.19%	-1.48%	-0.14%	-4.35%	-7.34%	-78.62%	1.27%	-0.81%	-11.08%	-27.32%
2. RETURN ON EQUITY										
Return on Equity using EBITDA (Earnings Before Interest, Taxes and Depreciation & Amortization)										
EBITDA (\$M)	\$ 216	\$ 198	\$ 253	\$ 322	\$ 276	\$ 315	\$ 213	\$ 277	\$ 388	\$ 423
Average Equity (\$M)	\$ 806	\$ 810	\$ 976	\$ 1,347	\$ 1,496	\$ 1,916	\$ 2,495	\$ 3,089	\$ 3,860	\$ 4,673
RoE, EBITDA	26.83%	24.49%	25.97%	23.93%	18.45%	16.45%	8.53%	8.98%	10.05%	9.05%
Return on Equity using Fully Taxed Net Income										
Fully Taxed Net Income (\$M)	\$ 58	\$ 42	\$ 54	\$ 89	\$ 65	\$ 67	\$ 81	-\$ 13	\$ 95	\$ 44
Average Equity (\$M)	\$ 806	\$ 810	\$ 976	\$ 1,347	\$ 1,496	\$ 1,916	\$ 2,495	\$ 3,089	\$ 3,860	\$ 4,673
RoE, NI	7.14%	5.18%	5.56%	6.59%	4.34%	3.49%	3.24%	-0.44%	2.47%	0.94%
Return on Equity using Fully Taxed Operating Cash Flow										
Fully Taxed Operating Cash Flow (\$M)	\$ 150	\$ 195	\$ 188	\$ 130	\$ 272	\$ 413	\$ 111	\$ 233	\$ 178	\$ 191
Average Equity (\$M)	\$ 806	\$ 810	\$ 976	\$ 1,347	\$ 1,496	\$ 1,916	\$ 2,495	\$ 3,089	\$ 3,860	\$ 4,673
RoE, OCF	18.64%	24.00%	19.26%	9.64%	18.18%	21.53%	4.45%	7.54%	4.62%	4.09%
Return on Equity using Fully Taxed Free Cash Flow										
Fully Taxed Free Cash Flow (\$M)	-\$ 100	-\$ 38	-\$ 4	-\$ 127	-\$ 238	-\$ 5,103	\$ 128	-\$ 92	-\$ 1,445	-\$ 4,346
Average Equity (\$M)	\$ 806	\$ 810	\$ 976	\$ 1,347	\$ 1,496	\$ 1,916	\$ 2,495	\$ 3,089	\$ 3,860	\$ 4,673
RoE, FCF	-12.37%	-4.68%	-0.39%	-9.43%	-15.91%	-266.31%	5.11%	-2.98%	-37.43%	-93.01%
3. RETURN ON CAPITAL EMPLOYED (Cash, Restricted Cash and Short Term Investments were Subtracted from Total Liabilities + Shareholders Equity)										
Return on Capital Employed using EBITDA (Earnings Before Interest, Taxes and Depreciation & Amortization)										
EBITDA (\$M)	\$ 216	\$ 198	\$ 253	\$ 322	\$ 276	\$ 315	\$ 213	\$ 277	\$ 388	\$ 423
Average Capital Employed (\$M)	\$ 2,334	\$ 2,484	\$ 2,656	\$ 2,875	\$ 3,214	\$ 6,169	\$ 8,227	\$ 8,352	\$ 10,246	\$ 13,986
RoCE, EBITDA	9.27%	7.99%	9.54%	11.21%	8.59%	5.11%	2.59%	3.32%	3.79%	3.02%
Return on Capital Employed using Fully Taxed Net Income										
Fully Taxed Net Income (\$M)	\$ 58	\$ 42	\$ 54	\$ 89	\$ 65	\$ 67	\$ 81	-\$ 13	\$ 95	\$ 44
Average Capital Employed (\$M)	\$ 2,334	\$ 2,484	\$ 2,656	\$ 2,875	\$ 3,214	\$ 6,169	\$ 8,227	\$ 8,352	\$ 10,246	\$ 13,986
RoCE, NI	2.47%	1.69%	2.04%	3.08%	2.02%	1.08%	0.98%	-0.16%	0.93%	0.32%
Return on Capital Employed using Fully Taxed Operating Cash Flow										
Fully Taxed Operating Cash Flow (\$M)	\$ 150	\$ 195	\$ 188	\$ 130	\$ 272	\$ 413	\$ 111	\$ 233	\$ 178	\$ 191
Average Capital Employed (\$M)	\$ 2,334	\$ 2,484	\$ 2,656	\$ 2,875	\$ 3,214	\$ 6,169	\$ 8,227	\$ 8,352	\$ 10,246	\$ 13,986
RoCE, OCF	6.44%	7.83%	7.08%	4.51%	8.46%	6.69%	1.35%	2.79%	1.74%	1.37%
Return on Capital Employed using Fully Taxed Free Cash Flow										
Fully Taxed Free Cash Flow (\$M)	-\$ 100	-\$ 38	-\$ 4	-\$ 127	-\$ 238	-\$ 5,103	\$ 128	-\$ 92	-\$ 1,445	-\$ 4,346
Average Capital Employed (\$M)	\$ 2,334	\$ 2,484	\$ 2,656	\$ 2,875	\$ 3,214	\$ 6,169	\$ 8,227	\$ 8,352	\$ 10,246	\$ 13,986
RoCE, FCF	6.44%	7.83%	7.08%	4.51%	8.46%	6.69%	1.35%	2.79%	1.74%	1.37%

Source: Company Financial Statements. Taxes were calculated using current federal and provincial rates applied retroactively for comparability.

As the following table shows, the ratios of debt to equity, total debt to EBITDA, and the growth rate of debt divided by the growth in EBITDA have all shown worrisome trends. There are still two more years of substantial capital spending to go, albeit

with much lower funding needs than in the past. The rest of this study will address how Nalcor, and its owner, the provincial government, might have to grapple with its debt.

Table 5										
Solvency, Interest Coverage, Capital Expenditure Coverage										
Financial Strength and Solvency	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Debt/ Equity	165%	217%	122%	113%	120%	318%	282%	247%	222%	259%
Debt/Total Assets	62%	57%	55%	53%	55%	76%	74%	71%	69%	72%
Debt/Total Capital Employed	64%	57%	56%	53%	55%	81%	83%	85%	78%	77%
EBITDA/Interest Expense	277%	238%	241%	297%	375%	435%	315%	377%	539%	641%
EBITDA/Interest Expense+Capex	126%	110%	116%	107%	63%	36%	12%	11%	14%	15%
Quick Ratio ({(Current Assets - Inventories)/Current Liabilities})	57%	63%	58%	66%	31%	108%	440%	247%	119%	273%
Quick Ratio Excluding "Restricted Cash"	57%	63%	58%	66%	31%	41%	288%	110%	36%	166%
EBITDA/Net Interest Paid	263%	266%	287%	399%	362%	374%	90%	120%	155%	159%
Pre-Tax Operating Cash Flow/Net Interest Paid	212%	285%	239%	187%	393%	523%	62%	99%	88%	79%
Total Debt/EBITDA	712%	750%	607%	501%	682%	2285%	3602%	3077%	2436%	3043%
Growth in Debt/Growth in EBITDA	-329%	41%	12%	18%	-116%	1986%	-20%	37%	27%	402%

Source: Company Financial Statements. Debt and Equity are the averages for the year. Taxes were calculated using current federal and provincial rates applied retroactively for comparability.

STRATEGIES AND ALTERNATIVES FOR COMMERCIALIZATION, DIVESTITURE OR PRIVATIZATION

1. Partial divestment

Quite often when a state-owned enterprise is divested or 'privatized', it is not done entirely at once. This is because it may not be possible to sell the whole company into the stock market and get the maximum price for the seller, especially if the firm has assets in the billions of dollars, or if there are unusual aspects to the nature of the company, or the circumstances in which it operates. Hence, an initial, small minority allotment of shares are sold to help establish at least a crude market valuation of the company's shares as they become openly traded.

However, having a majority stake retained by a government introduces some doubt about the true independence and commercial status of the partially divested firm. There could be fear on the part of investors that politicians may interfere with the strategy or operations of the firm. This could result in there being a discount that the firm's shares suffer in the market. In the case of Nalcor, the fears could be related to earlier mismanagement of the company, particularly the politically-driven decision to embark on the Muskrat Falls project, and the inadequate controls, poor cost and completion guarantees, and other indications of failure in governance or risk assessment.

There could be other 'hidden landmines' in Nalcor's books and contracts that could make it unattractive. The province, and perhaps even the federal government, may have to indemnify Nalcor from further legal or financial risk or calamity. There is now an official inquiry into the decisions and actions by the provincial government that went into starting and managing the Muskrat Falls project and why it went so wrong, which will keep a cloud hanging over Nalcor for some time to come.⁹

As the company's capital expenditures are scheduled to continue through 2019, and the company does not forecast full capacity power generation from Muskrat Falls until late 2021, the company will likely not be fully saleable, in whole or in part, until late 2020 or beyond. The provincial government and the citizens of Newfoundland and Labrador may be in denial about the necessity of the sale of Nalcor.

The table that follows shows that the company is unlikely to be able to sustain its projected debt levels. The government will in the next few quarters be compelled to put up another billion dollars in shareholder capital to keep Nalcor's solvency ratio from deteriorating to the point that its credit ratings plunge further and its interest costs soar, transforming a disaster into a financial crisis for the province.¹⁰ If Nalcor and the province do not find ways to reduce the company's debt, it will be a burden to taxpayers for decades to come.

Table 6

Scenarios Using Different Debt Structures; Existing or Federal Government Rates

Pretax Income, Net Income, Operating Cash Flow, Free Cash Flow, Under Varying Long-Term Debt Load Scenarios

All Figures in \$M	Projected 2021 Long Term Debt: \$ 9,868.64 Interest Costs Using Nalcor & NL Weighted Average Interest Rates for Long-Term Debt Weighted Average Interest Rate: 3.67%				Proportion of Total Liabilities: 72.91% Interest Costs Using Gov't of Canada Average 30-year Interest Rate for Long-Term Debt (As of 1 Jan., 2018) 30-year Canada Bond Interest Rate: 2.35%				
	Full Debt Load	3/4 Debt Load	Half Debt Load	1/4 Debt Load	Full Debt Load	3/4 Debt Load	Half Debt Load	1/4 Debt Load	
Projections for 2021 ==v	\$ 9,869	\$ 7,401	\$ 3,701	\$ 2,467	\$ 9,869	\$ 7,401	\$ 4,934	\$ 2,467	
EBITDA	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589	\$ 589	
DD&A	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	
Interest Expense (not including ST Debt)	\$ 362	\$ 272	\$ 181	\$ 91	\$ 232	\$ 174	\$ 116	\$ 58	
Pretax Income	-\$ 126	-\$ 36	\$ 55	\$ 145	\$ 4	\$ 62	\$ 120	\$ 178	
Corporate Income Tax (Credit)	-\$ 38	-\$ 11	\$ 16	\$ 44	\$ 1	\$ 19	\$ 36	\$ 53	
Corporate Income Tax Payable	\$ 0	\$ 0	\$ 16	\$ 44	\$ 1	\$ 19	\$ 36	\$ 53	
Net Income	-\$ 126	-\$ 36	\$ 38	\$ 102	\$ 3	\$ 44	\$ 84	\$ 125	
DD&A (Estimate based on historic relation of DD&A to Capital Assets)	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	
Total All Non-DD&A Non-Cash Changes (Based on projections for 2018, continued to 2021 for simplification purposes)	-\$ 64	-\$ 64	-\$ 64	-\$ 64	-\$ 64	-\$ 64	-\$ 64	-\$ 64	
Operating Cash Flow	\$ 163	\$ 253	\$ 327	\$ 391	\$ 292	\$ 333	\$ 373	\$ 414	
Estimated Capital Expenditures (Based on amount spent on Non-Muskkrat Falls-related Capex in 2017)	\$ 390	\$ 390	\$ 390	\$ 390	\$ 390	\$ 390	\$ 390	\$ 390	
Estimated Free Cash Flow	-\$ 227	-\$ 137	-\$ 63	\$ 1	-\$ 98	-\$ 57	-\$ 17	\$ 24	
Capital Expenditure rationed to = DD&A	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	\$ 353	
Free Cash Flow with Capex restrained (i.e., Capex = DD&A)	-\$ 191	-\$ 100	-\$ 26	\$ 37	-\$ 61	-\$ 21	\$ 20	\$ 60	
	Hypothetical Cases ==>				Case 1= ^		Case 2= ^		Case 3= ^

Note: Interest Expense on Short-Term Debt was neglected, but is assumed to be negligible or immaterial, in comparison to that of long-term debt. E.g., \$500 M \times 1% = \$5 M, \sim \$3.50M after tax.

Source: Company Financial Statements. Debt and Equity are the averages for the year. Taxes were calculated using current federal and provincial rates applied retroactively for comparability.

2. Break-up: Geographic, by Asset Type, Other

Nalcor is composed of several companies, some of which could be sold off or partially sold off to investors to bring in some cash, with the added benefit of simplifying its corporate structure. Foremost among these assets is N&L Hydro itself. However, it would be rather small in comparison to other such power utilities. Newfoundland has only about 550,000 people, making it smaller than most provinces, and even several cities in Canada. There are no utilities as small as N&L Hydro that are publicly listed and traded, hence a valuation of it as a stand-alone entity was not conducted.

The provincial economy is depressed, with a fishery that is only gradually recovering since the end of the cod moratorium a few years ago, little manufacturing, slowly growing mining, and a still-small tourism industry. The average provincial per capita income is low by North American standards, and the depressed economy provides little of the tax revenue needed to finance education, health care, infrastructure, and an aging population, imperilling future growth, retention of young people, and potentially repelling migrants from other provinces, let alone foreign immigration.

Nalcor's interest in Churchill Falls could be spun off or sold off. It is unclear what price it might fetch. The part of its output that is contracted to Hydro-Québec will be under fixed price until 2041, which will mean that investors are unlikely to give much present value to the far-off higher cash flows that Churchill Falls could earn. There does not appear to be any chance of increasing operating generating capacity at the facility. Nalcor owns 65.8 percent of Churchill Falls.

The present value of the future surplus cash flow from Nalcor's being able to sell its share of Churchill Falls power (65.8% of ~29 M MWh per annum) to Hydro at future market rates is estimated at \$5.41B in 2021 dollars.¹¹ This may seem not to be tangible currently, but it will start to loom large in a few years' time. Depreciation on northern dams, as Nalcor estimates, approaches one hundred years and may, in practice, actually exceed that time.¹²

Table 7

Present Value of Future Surplus Cash Flow from Nalcor's Share of H-Q Sales

Present Value of Future Churchill Falls at Full Market Prices FY2042 (\$B)

Churchill Falls Rated Capacity is 5,428 MW.
 24 hr/d x 365 d/yr = 47.5 MWh.
 Actual output in 2017 was 30.93 MWh.
 Capacity Utilization = 30.93/47.5 MWh.

Hydro-Quebec's 29M MWh Going to Market Rate	0.2415
Nalcor's share of Churchill Falls Sales	0.658
Amount of Sales Repriced Benefiting Nalcor	19.082
2017 Commercial Rate	\$ 37 per MWh
Inflated at Compound Rate of 2% for 25-years	1.640605994
Projected 2042 Commercial Rate	\$ 60.70 per MWh
Subtract Current Payment Rate from Hydro-Quebec	\$ 2 per MWh
Commercial Price or Rate per MWh in 2042 Less Amount Paid in Hydro-Quebec contract	\$ 58.70 per MWh
Extra Free Cash Flow from 2042 Onwards (Assumption made that DD&A=Capex and thus FCF=Net Income)	\$ 1,120.16
Estimated Income Tax Rate, Combined Federal & Provincial	30.00%
Income Tax	\$ 336.05
Fully Taxed Free Cash Flow or Net Income	\$ 784.11

Capital Expenditure = Depreciation, Depletion & Amortization

Present Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return ['r'] = Growth Rate ['g'])

Projected Fully Taxed Free Cash Flow Estimate for FY2042 (\$B): \$ 0.7841

Matrix Values (\$B) g=v; r=>	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	\$ 19.60	\$ 15.68	\$ 13.07	\$ 11.20	\$ 9.80	\$ 8.71	\$ 7.84
1.00%	\$ 26.14	\$ 19.60	\$ 15.68	\$ 13.07	\$ 11.20	\$ 9.80	\$ 8.71
2.00%	\$ 39.21	\$ 26.14	\$ 19.60	\$ 15.68	\$ 13.07	\$ 11.20	\$ 9.80
3.00%	\$ 78.41	\$ 3.21	\$ 26.14	\$ 19.60	\$ 15.68	\$ 13.07	\$ 11.20
4.00%	--	\$ 78.41	\$ 3.21	\$ 26.14	\$ 19.60	\$ 15.68	\$ 13.07
5.00%	-\$ 78.41	--	\$ 78.41	\$ 3.21	\$ 26.14	\$ 19.60	\$ 15.68
6.00%	-\$ 39.21	-\$ 78.41	\$ --	\$ 78.41	\$ 3.21	\$ 26.14	\$ 19.60
7.00%	-\$ 26.14	-\$ 39.21	-\$ 78.41	\$ --	\$ 78.41	\$ 3.21	\$ 26.14

	Minimum	Maximum	Median	Mean (Average)
Total Market Value (\$B)	\$ 11.42	\$ 78.41	\$ 19.60	\$ 25.23
Average of Median & Mean (\$B)			\$ 22.48	
Present Value Factor at 7% Discount Rate (Average of 5% & 9%) for 21 years			0.2415	
Present Value of Extra Free Cash Flow, Fully Taxed, from Churchill Falls' Power being sold to Hydro-Quebec or Others at Full Market Rate in 2042 & Beyond (\$B)		\$ 5.41		

Note: While this may seem inflated or exaggerated, the windfall value of Hydro-Quebec's Churchill Falls contract to Hydro-Quebec has been estimated at a cumulative value \$250B over the 67-year life of the contract.

Gull Island is a promising but not ideal prospect. Nalcor has spent about \$190M on surveying and preliminary engineering and environmental studies on the feasibility of a major generating project at that location, another tributary of the Churchill River, upstream from Muskrat Falls.¹³ It wrote off \$50.6M of those costs in 2017. However, the studies from this project could be valuable to other utilities as a leap forward for potential development.

Canadian, US, and foreign utilities, particularly those which specialize in renewable power sources, might be tempted to invest in such a potentially large-scale facility of 2,250 MW or more, perhaps as a joint venture partner, or buy out Nalcor's interest entirely.¹⁴ There are several of these sorts of companies (Algonquin Power, Boralex, Brookfield Renewable Partners, Innergex, Northern Power, Terra Power, TransAlta Renewables) seeking similar scale.

If Nalcor could let its current interest 'ride' and let the outside investor develop Gull Island, it could own a substantial portion of a valuable asset worth billions of dollars. At least, if it was developed *without* Nalcor's involvement, which may have a reverse Midas touch, given the Muskrat Falls fiasco. Nalcor could, in the next few years, sell this Gull Island interest, and net the discounted present value of future cash flows for it, plausibly in the hundreds of millions of dollars, if not billions.

There are a lot of risks with Gull Island. A private sector investor might know or find ways of reducing them, and the expected enormous price tag of developing the project. The present value of the future cash flows from a Gull Island generation facility could be as much as \$10.74B, but construction costs could exceed that, given the cost-overrun model of Muskrat Falls, which is a smaller facility and will have cost over \$12B by the time it is finished in 2019. Please see the following table for the hypothetical value of Gull Island.

Table 8

Hypothetical Present Value of Future Cash Flows of Gull Island Facility

Estimation of Potential Value of Gull Island Generation Facility

Estimated average Gull Island annual output (From https://musktratfalls.nalcorenergy.com/wp-content/upload/2013/03/Report-Why-not-develop-Gull-Island-first.pdf , p6)	11.9M MWh
2017 Commercial Rate	\$ 37 per MWh
Inflated at Compound Rate of 2% for 10-years (Estimated project completion time to full generation capacity, with contingency margin)	1.21899442
Projected Commercial Rate	\$ 41.10 per MWh
Extra Free Cash Flow from 2042 Onwards (Assumption made that DD&A=Capex and thus FCF=Net Income)	\$ 536.72
Estimated Income Tax Rate, Combined Federal & Provincial	30.00%
Income Tax	\$ 161.02
Fully Taxed Free Cash Flow or Net Income	\$ 375.71

Capital Expenditure = Depreciation, Depletion & Amortization

Present Value of Discounted Free Cash Flow = Estimated Next Year Free Cash Flow (Required Rate of Return [r] = Growth Rate [g])

Projected Fully Taxed Free Cash Flow Estimate for FY2042 (\$B): \$ 0.3757

Matrix Values (\$B) $g=v; r=>$	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
0.00%	\$ 9.39	\$ 7.51	\$ 6.26	\$ 5.37	\$ 4.70	\$ 4.17	\$ 3.76
1.00%	\$ 12.52	\$ 9.39	\$ 7.51	\$ 6.26	\$ 5.37	\$ 4.70	\$ 4.17
2.00%	\$ 18.79	\$ 12.52	\$ 9.39	\$ 7.51	\$ 6.26	\$ 5.37	\$ 4.70
3.00%	\$ 37.57	\$ 18.79	\$ 12.52	\$ 9.39	\$ 7.51	\$ 6.26	\$ 5.37
4.00%	--	\$ 37.57	\$ 18.79	\$ 12.52	\$ 9.39	\$ 7.51	\$ 6.26
5.00%	-\$ 37.57	--	\$ 37.57	\$ 18.79	\$ 12.52	\$ 9.39	\$ 7.51
6.00%	-\$ 18.79	-\$ 37.57	\$ --	\$ 37.57	\$ 18.79	\$ 12.52	\$ 9.39
7.00%	-\$ 12.52	-\$ 18.79	-\$ 37.57	\$ --	\$ 37.57	\$ 18.79	\$ 12.52

	Minimum	Maximum	Median	Mean (Average)
Total Market Value (\$B)	\$ 5.37	\$ 37.57	\$ 9.39	\$ 12.09
Average of Median & Mean (\$B) \$ 10.74				

Nalcor could also sell NLH into the public market. However, it is rather small and does not seem to have a strong growth outlook, other than the gradual replacement of high-cost thermal generation with hydro power. That may be enough to attract some interest, perhaps from local Atlantic utilities Fortis and Emera.

There appear to be few other break-up options for Nalcor that would make more money than selling off the company in its entirety itself. This sale of Nalcor may feel like some kind of failure to the people of Newfoundland and Labrador, but there is little choice if the surviving company is to have a fighting competitive chance.

There could be other alternatives for the Province itself to raise money, from the sale of mineral rights in specific regions of Labrador and the Island of Newfoundland, to outright sale of some or all of the petroleum rights to the offshore, to sale of buildings, property and other assets. A generous offer from Ottawa to the Province to restructure its debts and that of Nalcor would undoubtedly include some conditions, including sale of assets and further tightening of operating expenses, which may require spinning off some operations and sale of others. In the following table, there is a summary of four examples of valuation of Nalcor with possible debt restructuring. The details of how these figures were arrived at are shown in tables in Appendix I of this report.¹⁵ Please see the following table.

Table 9							
All Four Valuation Scenarios: Intrinsic & Market Values, All Fully Taxable							
Comparison of All Four 2021 Valuation Scenarios; Intrinsic Values & Market Values, All Fully Taxable							
		Mean	Median	Minimum	Maximum	Average Mean and Median	Average Minimum and Maximum
Base Case: Debt Free, Fully Taxed	Intrinsic Value (DCF Model, Net Income as proxy for FCF)	\$ 5.32	\$ 4.13	\$ 2.36	\$ 16.52	\$ 4.72	\$ 9.44
	Market Value (Financial Metrics Peer Company Comparison)	\$ 5.79	\$ 5.76	\$ 2.71	\$ 9.61	\$ 5.77	\$ 6.16
Case 1: One Quarter Debt Retained, Current Interest Rates	Intrinsic Value (DCF Model)	\$ 1.20	\$ 0.94	\$ 0.53	\$ 3.74	\$ 1.07	\$ 2.14
	Market Value (Financial Metrics Peer Company Comparison)	\$ 5.48	\$ 4.74	\$ 2.76	\$ 9.68	\$ 5.11	\$ 6.22
Case 2: One Half Debt Retained, Gov't of Canada Interest Rates	Intrinsic Value (DCF Model)	\$ 0.64	\$ 0.49	\$ 0.28	\$ 1.97	\$ 0.56	\$ 1.13
	Market Value (Financial Metrics Peer Company Comparison)	\$ 4.25	\$ 2.76	\$ 2.67	\$ 9.68	\$ 3.50	\$ 6.18
Case 3: One Quarter Debt Retained, Gov't of Canada Interest Rates	Intrinsic Value (DCF Model)	\$ 1.94	\$ 1.51	\$ 0.96	\$ 6.03	\$ 1.72	\$ 3.45
	Market Value (Financial Metrics Peer Company Comparison)	\$ 4.84	\$ 3.95	\$ 2.76	\$ 9.68	\$ 4.40	\$ 6.22

Note: Adding Debt to the Base Case would not only reduce the value by the amount of debt, but the pre-debt value also, as interest costs reduce net income and cash flow.
Note: In Cases 1-3, interest costs reduce the pre-tax income, net income, operating cash flow & free cash flow, and hence the valuations.

3. Disruptions from evolving competitive and technological forces

The greatest disruptions affecting the electrical power generating industry currently are a mix of commercial, regulatory, and technological developments. The cost of solar, wind, and other renewable energy has been steadily and substantially declining, and is projected to continue in this trajectory.¹⁶ New forms of energy storage, and falling prices of batteries, will make these renewable sources more practical and commercially viable, as well as enable some other new developments outlined later on in this study.

Efficiency improvements in horizontal drilling and hydraulic fracturing, 'fracking', have helped North American shale oil production to soar, and the associated gas along with it. This abundance of gas is a key competitor to many other forms of energy and is projected to remain in surplus for decades, even if exports from North America increase.¹⁷

While cost is a major attractive feature of natural gas, the flexibility of gas-fired generation is another key factor in its increasing acceptance and big increase in the total generation capacity of North America in the past several years. This flexibility is also very helpful in dealing with the intermittent and undependable nature of renewable power, in that gas generation can be ratcheted up or down without much disruption to the utility.

New or improved batteries will also make it easy for Nalcor and other utilities to handle demand fluctuation as well as supply fluctuation, the latter from renewable sources, and there could even be faster growth in capital expenditure on storage than generating capacity in the next few years.¹⁸ However, this revolution in batteries will also enable customers, even relatively small ones, such as small businesses, hotels, hospitals, and apartment complexes, smooth out their electricity purchases, and buy when costs are lower. It can also enable them to economically buy and employ renewable sources such as rooftop solar panels, and potentially go 'off-grid'. This could be a challenge for Nalcor in the future.

Other challenges are increasingly affordable fuel cell-type small electric generating facilities using natural gas (there are several competing technologies, many of which are commercially available), or larger, more conventional co-generation ones that also produce heat for industrial or other purposes. As natural gas is available in most of Nalcor's out-of-province territory, this could become a rival to it, unless it gets involved in this line of business itself. Another threat, or opportunity, is merchant power. Customers in Nova Scotia and the United States already take advantage of this.

Fortis and Emera in the other Atlantic provinces, and the New England states have many supplier options, including Hydro-Québec, which has surplus electric power. So, Nalcor's bargaining options are limited. However, the marginal cash cost of power from Muskrat Falls will be near zero, and green energy is at a premium, so it is not without marketing power in that aspect, at least, and far more reliable than wind or solar, at that.

4. Readyng Nalcor for Sale

Utilities usually pay a dividend to investors. The company is showing sufficient income statement accounting-based net income to pay a small dividend, but, given current low cash generation, investors may not consider the dividend sustainable. So, some investors that like a substantial and growing dividend may not find Nalcor attractive once it is floated, if its Board decides that it cannot afford such a dividend.

The company has negative free cash flow and low returns on assets, equity and capital employed. There will need to be a period of restructuring, reorientation and rationalization to improve margins before the company issues any equity to the public so that higher value can be realized in any such sale. Fortunately, capital spending is falling.

It is not crucial that the company have positive free cash flow, but improving operating cash flow (cash income before capital expenditures) will be encouraging to prospective investors. If the company has a credible plan to improve its fleet of assets and to address most, if not all, of the challenges noted above in its competitive strategy, and can show it can be resilient if electric demand growth is slow or variable and customers are fickle, then it can be sold at an attractive valuation for the seller, even if the growth outlook is modest and the array of threats is formidable. However, the low metrics for returns on capital are cautionary; they need to be improved, or there needs to be a logical and confidence-inspiring plan to do so.

Finally, and obviously the company's heavy debt load needs to be reduced. There is little likelihood that the Province will recoup its investment in Nalcor. However, there is a chance that the sale proceeds can reduce the overall debt outstanding, making it tolerable for taxpayers to sustain in the future.

CONCLUSION

In general, entirely private sector companies tend to perform better than those within the government orbit or ownership. Crown ownership of a company exposes taxpayers, citizens, and even customers and suppliers to the risks of business and economic and technological trends that are unnecessary to experience; that is what private investors, institutional, individual or corporate undertake in nearly every sector of the economy. In the past, these sorts of risks did not seem to apply to such a staid, dull, slow-change industry such as electric utilities. That is not true anymore.

Merchant power producers are stirring up change, and regional governments in North America are encouraging them to compete with the established utilities such as N&L Hydro and Nalcor. In addition, large and now even some smaller consumers of power are entertaining the idea of producing some or all of their own power. New advances in battery technology and natural gas generation are making that feasible. Nalcor's hydro-electric facilities are a low-cost set of crown jewels, aside from the debt burden, but hard to expand, with investor reluctance to finance such expansion, given projected low demand growth for electricity in North America.

Even harder to do will be to make Nalcor, whether or not it is divested in whole or in part, a flexible, versatile, dynamic, and fast-evolving competitive, customer-responsive player in the new energy marketplace, given its limited potential roster of customers. It could become that, as its abundant hydro-electric power make it an ideal 'virtual battery' for intermittent wind and solar power elsewhere in North America. This may require additional capital investment, and of the right kind, with the right strategy, to become successful and a valuable company for its new owners, or not a burden if it stays a Crown entity.

A successful flotation requires explicit and credible declarations from the current owner that it will not meddle in any aspect of Nalcor's operations, strategy, or governance, no matter how tempting that may be for populist politicians. There must be institutional mechanisms created so that disasters like the Muskrat Falls project, and the Churchill Falls debacle before Muskrat was a gleam in ambitious politicians' eyes, are nearly impossible to happen again. That independence and removal of the risk of bad governance is only guaranteed if Nalcor is totally removed from politicians' clutches; i.e., if it is divested to other, private sector investors.

The Province will almost certainly have to do so anyway, as Nalcor's massive debt must be restructured to be more sustainable, and it is unreasonable to expect provincial, let alone Canadian taxpayers fund such a restructuring if the provincial government does not contribute to the restructuring itself. Fortunately, the present value of its share of Churchill Falls' future impressive repriced power sales is substantial, and can be used to refinance the company to make such a divestiture a success. It can be collateral that could be offered to Ottawa, or an acquirer.

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, specific case.

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 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, 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. 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.
12. 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.
13. 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.
14. 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 and -constructive ways.
15. Governments, generally, have a poor record of picking winners, or creating or owning enterprises that have market-competitive profitability, or attractive returns on assets, equity, or even returns that exceed governments' own cost of debt service. If, rarely, they actually do, it generally turns out that they have been provided unusually good market, operational, regulatory, or other conditions not available to other, investor-owned firms.
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 portion of the economy the government occupies increases.

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