

McCULLOUGH RESEARCH

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Subject: Lessons From Manitoba Hydro's Financial Problems

Manitoba's influential investigative reporter, The Black Rod, recently predicted that "Manitoba Hydro is on its deathbed."¹ He based this forecast on a review of the hearings last month before the province's Public Utilities Board (PUB). The recent hearings in Manitoba are a case study for what rate payers in British Columbia, Quebec, and Newfoundland may expect if Site-C, Magpie, Petit Mecatina, and Muskrat Falls projects go forward.²

On July 31, 2017, the Manitoba Public Utility Board rejected a request for an interim 7.9% rate increase, allowing only 3.36%.³ Manitoba Hydro is requesting an annual 7.9% rate increase in an ongoing general rate case for the next two years and forecasting another three years following thereafter.

Manitoba Hydro gambled on major generation and transmission upgrades a decade ago. Although their forecasts indicated increasing U.S. wholesale prices, market opportunities have decreased dramatically as new technologies in natural gas and renewables offer much cheaper alternatives. This effect is not restricted to Manitoba. Overall, real Canadian electric export prices have declined 45% over the past decade.

The consequences of Manitoba Hydro's gamble should have been no surprise to the executive suite at Manitoba Hydro. A 2007 study by Nalinaksha Bhattacharyya advised them how to

¹ The Black Rod "Manitoba Hydro is on its deathbed. There, we said it." August 10, 2017. The reporter operates under a nom de plume.

² Site-C is in British Columbia. Magpie and Petit Mecatina are unannounced projects in Quebec. Muskrat Falls is in Newfoundland.

³ AN APPLICATION BY MANITOBA HYDRO FOR A 7.9% INTERIM RATE INCREASE EFFECTIVE AUGUST 1, 2017, Manitoba Public Utilities Board, July 31, 2017.

quantify export market risks.⁴ Manitoba Hydro later commissioned ICF International to directly weigh whether or not to depend on the export market. Manitoba Hydro's risk manager during the period, Samantha Kumaran, also issued similar warnings before she was dismissed.⁵

ICF International concluded that, according to the information available at the time, the probability of the benefits appeared to outweigh the probability of the costs, but this research also warned: "Another large risk to the financial performance of Manitoba Hydro is uncertainty and the associated volatility in wholesale power prices. Thus, the Corporation not only faces volume risk related to a drought, but also price risk with respect to exports."⁶

The need to export at high prices becomes critical if a company has racked up enormous levels of debt to cover the capital expenditures. Manitoba Hydro has paid dearly in recent years on new capital projects. Clocking in at C\$5 billion, the Bipole III transmission line's costs continue to grow past prior estimates.⁷ The cost estimate for the still-incomplete Keeyask dam is now C\$8.7 billion.⁸

Manitoba Hydro's financial forecasts indicate that long term increases at 7.9% per annum will be required to remain solvent. The following charts show the no rate increase case (MH15), the current forecast with a 3.95% increase (MH16 at MH15 3.95% Rate Increases), and a series of 7.9% increases over the next five years and 2% increases for the following five years (MH16).⁹

The base case – MH16 – would raise rates in Manitoba by 53% by 2022.

⁴ Bhattacharyya, Nalinaksha. "Report on Risks Faced by Manitoba Hydro in Power Exports" July 4, 2007.

⁵ A Star Group V Manitoba Hydro Order and Opinion, U.S. District Court Southern District of New York, June 30, 2014, page 3.

⁶ ICF International. "Independent Review of Manitoba Hydro Export Power Sales and Associated Risks", September 11, 2009.

⁷ CBCNews. "Bipole III route a mistake that can't be changed, Manitoba Hydro board says.", September 21, 2017.

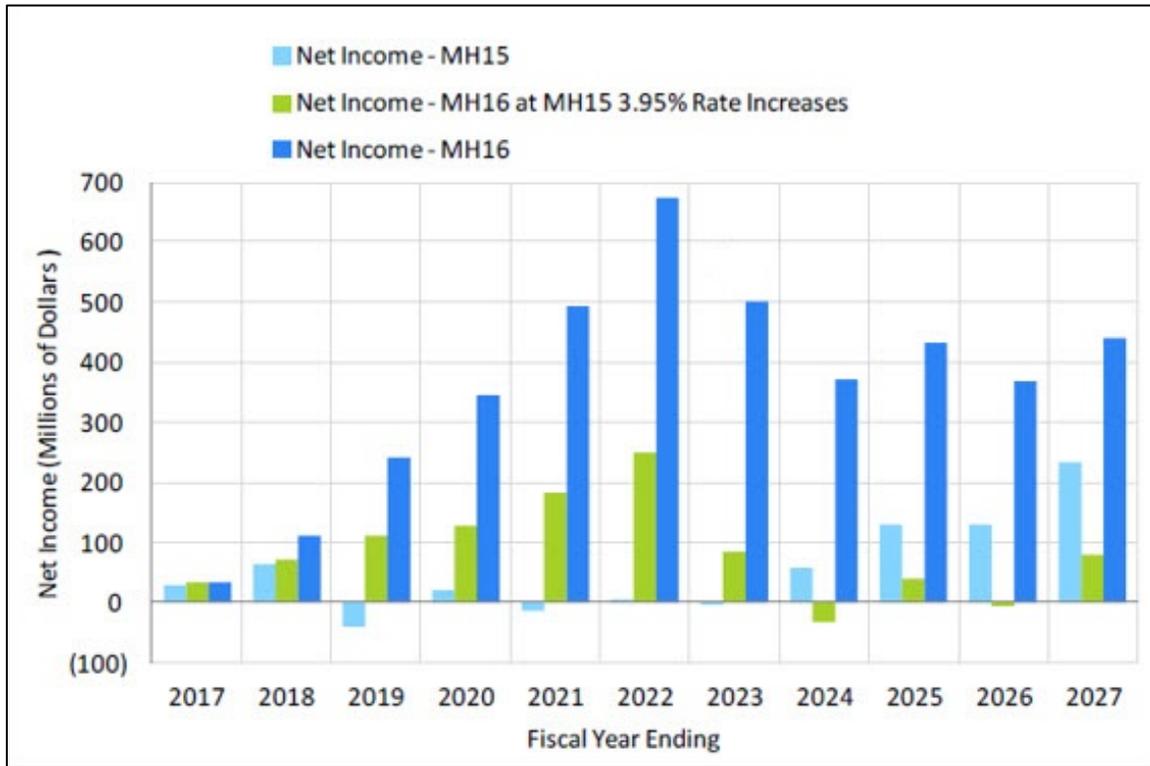
⁸ "Building a Strong Energy Future: Manitoba Hydro-Electric Board 66th Annual Report, July 28, 2017.

⁹ Manitoba Hydro. "2017/18 & 2018/19 General Rate Application Integrated Financial Forecast", May 12, 2017, page 7.

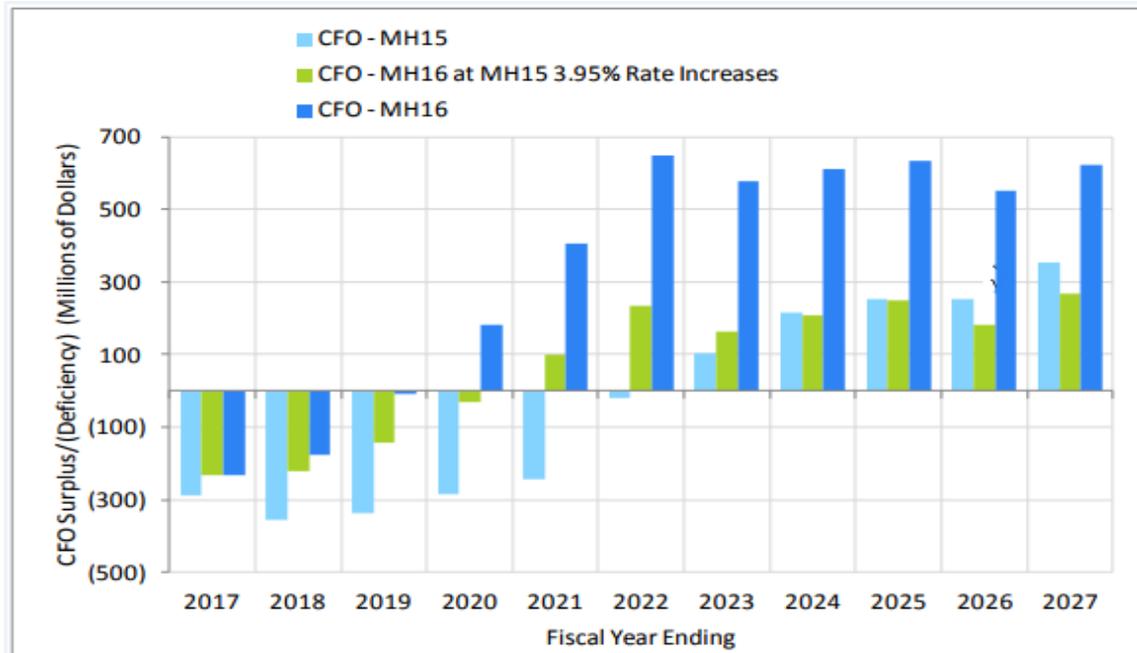
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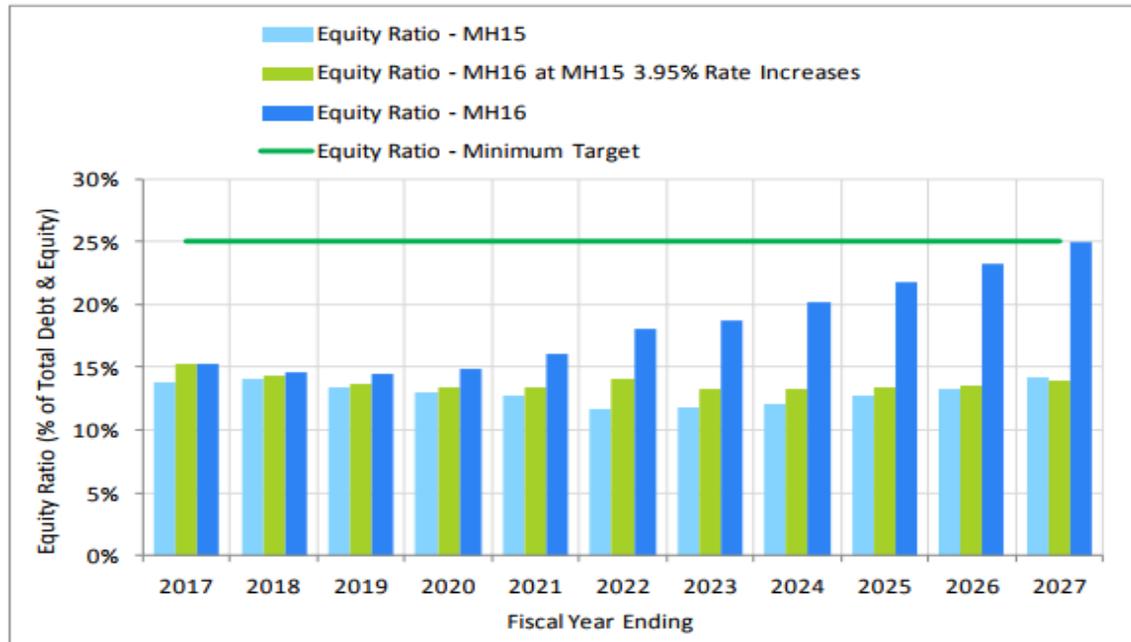
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From the perspective of their cash flow, things appear even bleaker:



Net equity in Manitoba Hydro is forecasted to remain below target levels even after years of 8.9% rate increases:



Manitoba Hydro rate payers are witnessing a moment of truth as Manitoba Hydro pleads for these substantial rate increases. By its own admission, these rate increases are a result of Manitoba Hydro being “[unprepared] to absorb the significant increase in operating and borrowing costs that result from the completion of major capital projects currently underway.”¹⁰

So far, Manitoba Hydro has stated to the PUB that Bipole III and the Keeyask dam have experienced cost overruns of C\$300 million and C\$500 million, respectively. Those overruns will contribute nearly C\$1 billion in new debt payments.¹¹ In order to stay solvent, Manitoba Hydro is planning to increase residential rates by 7.9% annually for the next five years.¹²

Even more concerning, Manitoba revealed at the PUB that they only avoided a financial emergency by sheer luck; low interest rates and high reservoir levels are offsetting the rapidly increasing costs.¹³ That stark admission would seem to suggest that if interest rates are higher when these bonds need to be rolled over and water levels are lower when those higher interest

¹⁰ Manitoba Hydro. Key Messages & Reasons for a Rate Increase, “Manitoba Hydro 2017/18 & 2018/19 General Rate Application”, page 2.

¹¹ The Black Rod “Manitoba Hydro is on its deathbed. There, we said it.” August 10, 2017.

¹² Ibid.

¹³ Nick Martin. Winnipeg Free Press. “Hydro Turns to province for cash.” February 8, 2017.

payments must be made, the entire province of Manitoba might suffer from both higher rates and the spillover effects of a major crown corporation bailout.

The probability of higher interest rates and lower water levels are not exactly black swan events. Financial prudence should compel a crown corporation of Manitoba Hydro's prominence to be prepared for even lower probability risks of this high an impact. Instead, large capital projects have made them vulnerable to an all too likely eventual change in circumstances.

Of course, rating agencies know this too, let alone the bond market. Interest rates might not just rise due to the monetary policy of the Bank of Canada. Manitoba Hydro will also likely have to pay a risk premium to investors.

Manitoba Hydro's wager that export prices would be high continues to be problematic since have declined 7.4% since construction began on the Keeyask dam in 2016.¹⁴

Manitoba Hydro knew about the market risks associated with relying on exports to the Midwest.¹⁵ When Keeyask was planned a decade ago, forecasted peak prices were almost three times what they are today.¹⁶ Moreover, current electricity price forecasts don't predict a return to the higher prices Manitoba Hydro predicted when these projects commenced.¹⁷

In its General Rate Application, Manitoba Hydro makes it very clear to regulators that it always over-estimates export prices, explaining to its PUC why Manitoban rate payers need to pay more:

The reduction in export prices accounts for about \$1.1 billion of the cumulative 10 reduction of net extraprovincial revenues over the 10-year forecast period to 2026/27. MH16 reflects electricity export prices that are lower by approximately 20% relative to the comparable 2015 forecast. The decline to long-term power prices is due primarily to a reduction to long-term natural gas prices and increased renewable development (primarily wind generation) in the MISO market, aided by substantial subsidies.¹⁸

¹⁴ MISO. Market Clearing Prices <https://www.misoenergy.org/MarketsOperations/Prices/Pages/Prices.aspx>, data downloaded: August 11, 2017.

¹⁵ Bhattacharyya, Nalinaksha. "Report on Risks Faced by Manitoba Hydro in Power Exports" July 4, 2007.

¹⁶ Independent Review of Manitoba Hydro Export Power Sales and Associated Risks, ICF, September 11, 2009, Page 90.

¹⁷ MISO, Market Clearing Prices: <https://www.misoenergy.org/MarketsOperations/Prices/Pages/Prices.aspx>, data downloaded: August 11, 2017.

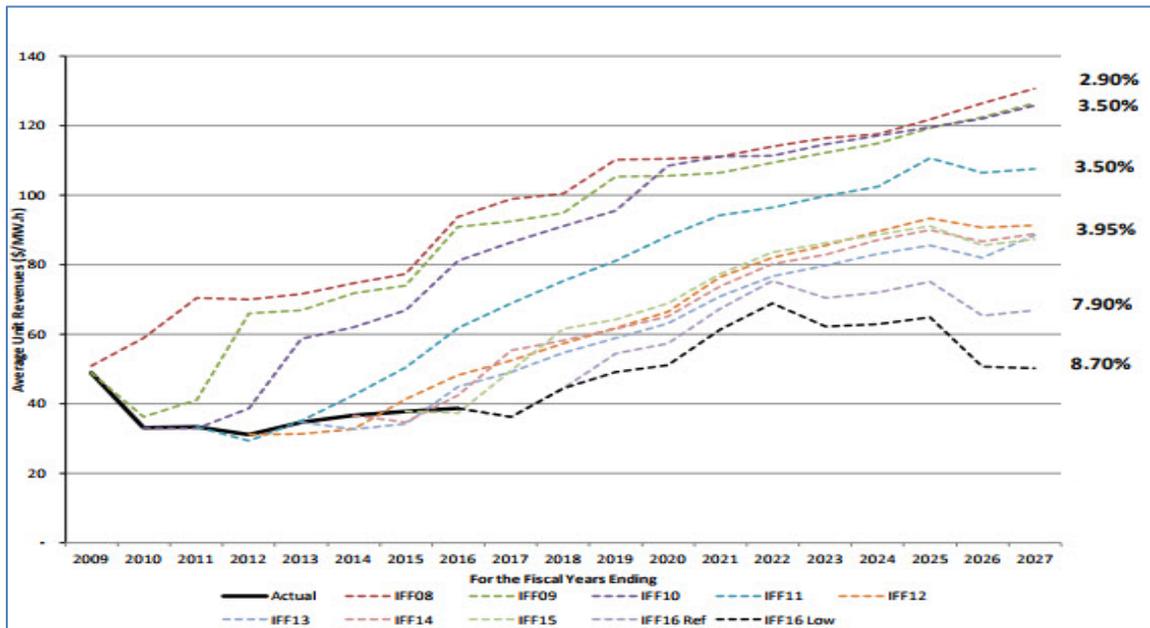
¹⁸ Integrated Financial Forecast, Manitoba Hydro 2017/18 & 2018/19 General Rate Application, page 14.

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The next chart shows the actual average export revenue since 2009 on a solid black line with a progression of forecasted revenues with the projected annual rate increases associated with the respective forecasts:¹⁹



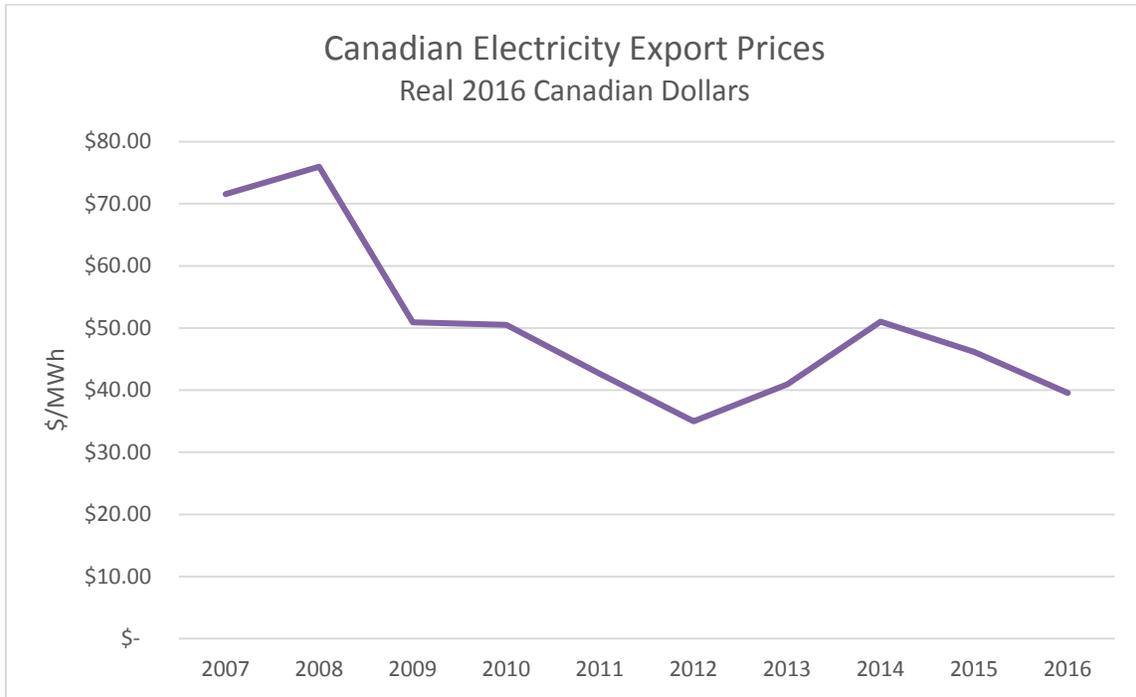
There is one very clear takeaway from this chart. Manitoba Hydro has consistently overestimated the revenue it will receive from exports.

Actual electricity prices received in U.S. markets have declined 45% over the past decade in real terms.^{20,21}

¹⁹ Integrated Financial Forecast, Manitoba Hydro 2017/18 & 2018/19 General Rate Application, page 15.

²⁰ Canadian CPI: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ46a-eng.htm>, downloaded August 22, 2017.

²¹ Canadian Export prices: <https://apps.neb-one.gc.ca/CommodityStatistics/Statistics.aspx?language=english>, downloaded August 22, 2017.



Manitoba Hydro's unsound strategic planning offers officials in British Columbia, Quebec, and Newfoundland an important lesson. Costly hydro projects like Site C, Magpie, Petit Mecatina, and Muskrat Falls come with considerable financial risk. Megaprojects like these have often experienced large cost overruns.

Bets on high spot market prices should not be a necessary condition for a crown corporations continued solvency.