



Manitoba Hydro - General Rate Application - City of Winnipeg Report

I am the City Economist with the City of Winnipeg, a position I have held since 2016. In that capacity, my responsibilities include: analysis of major macro and microeconomic policy as it affects the City's finances and economy as a whole. Prior to this, from 2011 to 2016 I was a senior economist at Manitoba Hydro involved in, amongst other things, macroeconomic forecasting analysis. While at Manitoba Hydro, I was heavily involved in the Needs for and Alternatives to (NFAT) process undertaken by Manitoba Hydro, and was also heavily involved in analysis and preparation of the Manitoba Hydro's 2015 Financial Targets Review Report.

Since 2013 I have been a Director – Manitoba Association of Business Economic (MABE). I have a Bachelor of Arts, Major Economics from the University of Manitoba (2008), I have undertaken pre-masters coursework in advanced micro and macroeconomics and alternative macroeconomics and econometrics at the University of Manitoba (2009), and in 2017 have been an occasional student at the Masters of Business Administration (MBA) program at the University of Manitoba.

Introduction

Manitoba Hydro is a corporate body established and governed by the Manitoba Hydro Act. It is a Provincial Crown Corporation charged with providing the delivery of a supply of power, adequate for the needs of the province, and to engage in and promote economy and efficiency in development, generation, transmission, distribution, supply and end-use of power.

Manitoba Hydro has filed a 2017/2018 and 2018/2019 general rate application (GRA) with the Public Utilities Board (PUB) seeking, amongst other things, approval of an across the board rate increase of 7.9% to all components of the rates for all customer classes to be effective August 1 2017 for each of the next five years.



This report addresses the impact of such proposed rate increases on the City of Winnipeg's finances, its economy and that of the Province, and in turn the potential impacts on residents and commercial and industrial businesses of Winnipeg.

Listed first among the nine key reasons for this application by Manitoba Hydro is the relationship between Hydro's current and projected financial situation and the "...untenable risk ...to the overall economic health of the Province of Manitoba." By way of preliminary remark, and as it concerns Manitoba Hydro's rate application, Kelvin Shepherd, CEO of Manitoba Hydro has stated: "It's easy to get caught up in some of the day-to-day and specific challenges that Hydro faces, so I thought I would just start by acknowledging the important role that Manitoba Hydro's played, not only in the development of the provincial economy, but the broader quality of life for Manitobans." Mr. Shepherd goes on, "To us, the big issues -- the big questions that we have to answer are outlined here. The importance of an adequate capital structure for Manitoba Hydro, one that's -- allows us to manage the risks not just to the Utility but to its customers, the Province, and all Manitobans." Management of risks not just for the Utility but for customers and the Province and all Manitobans should be a fundamental priority. And yet while Manitoba Hydro provides thousands of pages of analysis and discussion in its rate application from numerous possible dimensions, little analysis of the impact of those risks on the economy, province or citizens is provided. In fact, Manitoba Hydro confirmed it "has not undertaken specific analysis to determine impact of the proposed rate increases on the Manitoba economy or the referenced groups [each of Manitoba Hydro's classes/subclasses, low income customers, Manitoba Hydro's delinquent customers]."¹ Manitoba Hydro does identify the key considerations for a rate application increase: the trade-off between rate increases and their impact to Manitoba Hydro and the overall economic health of the Province of Manitoba. And yet Manitoba Hydro does not provide any macroeconomic impact analysis.

¹ Coalition MHi 120b-d



It is evident then that the choice the PUB must make is between the likelihood and impact of a credit downgrade to the Province of Manitoba, versus the likelihood and impact of the proposed electrical rate increases. While the former is being explored by other experts involved in this application, one perspective of this macroeconomic impact will be explored in this report: that of the City of Winnipeg and the trade-offs the City's administration and elected officials will need to make when faced with a compounded rate increase. In turn, these choices will have an indirect impact on the citizens of Winnipeg who will be impacted by some allocation between an increase of taxation or fees, or service reduction. Analysis by the Conference Board of Canada on Manitoba will be provided to supplement the perspective of the impact on the broader economy of Manitoba. Finally, given the emphasis on weighing risks, this report will provide a first-hand account of the experience with the December 2015 Financial Target Review stochastic risk analysis modeling undertaken by Manitoba Hydro.

The City of Winnipeg – An Overview of Charter and Finance

By virtue of its enabling legislation, the City of Winnipeg Charter Act, the City of Winnipeg is responsible for the provision of good government for the city, the provision of services, facilities, and other things that council considers necessary or desirable for all or part of the city, the development of viable and sustainable communities, and the promotion of health, safety and welfare of its inhabitants (subsection 5(1)). To accomplish this, the City of Winnipeg undergoes an annual budgeting process that involves many stakeholders, including public, administration and finally, elected officials. To accomplish this, the City estimates its cost expenditures together with revenue sources to fund those costs. The City's costs include its own direct electrical costs, as well as indirect electrical costs of its suppliers who build into their pricing of their goods and services supplied to the City their direct electrical costs.

The City receives funding from several sources, but is generally split between taxation, fees and charges, and various operating and capital grants from other levels of government. The two largest sources of



revenue from 1998 to 2016 were property taxes (around 33% of total municipal revenue) and water & sewer user fees (around 15% of total municipal revenue)². For 2016, the City of Winnipeg received approximately \$1.7 billion in consolidated revenue.³ From an expenditure perspective, the City of Winnipeg spent around \$1.6 billion in 2016 in consolidated expenses, the largest of which was on salaries and benefits. After removing amortization and interest payments, this amount is closer to \$1.3 billion for 2016. From an operating budget perspective, the City of Winnipeg is required by law to close its revenues and expenditures – to not incur any debt for operating. The City of Winnipeg’s revenue structure is described in appendix 1 of the City’s July 2017 community trends and performance report.⁴ In summary, the City has an unsustainable structural deficit in both its operating budget and capital budget. The operating budget shortfall in 2018 is projected at \$89 million. As discussed herein, an electrical rate increase as contemplated by Manitoba Hydro in its general rate application will only service to exacerbate this unsustainable structural deficit.

Estimation of Direct and Indirect Electricity Price Effect

Direct Cost

In 2016 the City of Winnipeg paid approximately \$29 million to Manitoba Hydro for electricity⁷. Out of a total consolidated expenditure less amortization and interest payments of \$1.3 billion, electricity accounted for approximately 2.2% of all direct expenses⁸. This amount changes over time as both the quantity of electricity and price charged by Manitoba Hydro has changed. For example, in 2009, the City of Winnipeg paid approximately \$22.5 million directly to Manitoba Hydro for electricity services, which

² City of Winnipeg Community Trends and Performance Report Volume 1 – 2018.

³ 2016 Annual Financial Report – City of Winnipeg

⁴ http://www.winnipeg.ca/cao/pdfs/CommunityTrendsandPerformanceReportVolume1_2018.pdf

⁷ Derived based on actual 2016 billings from City of Winnipeg accounts payable.

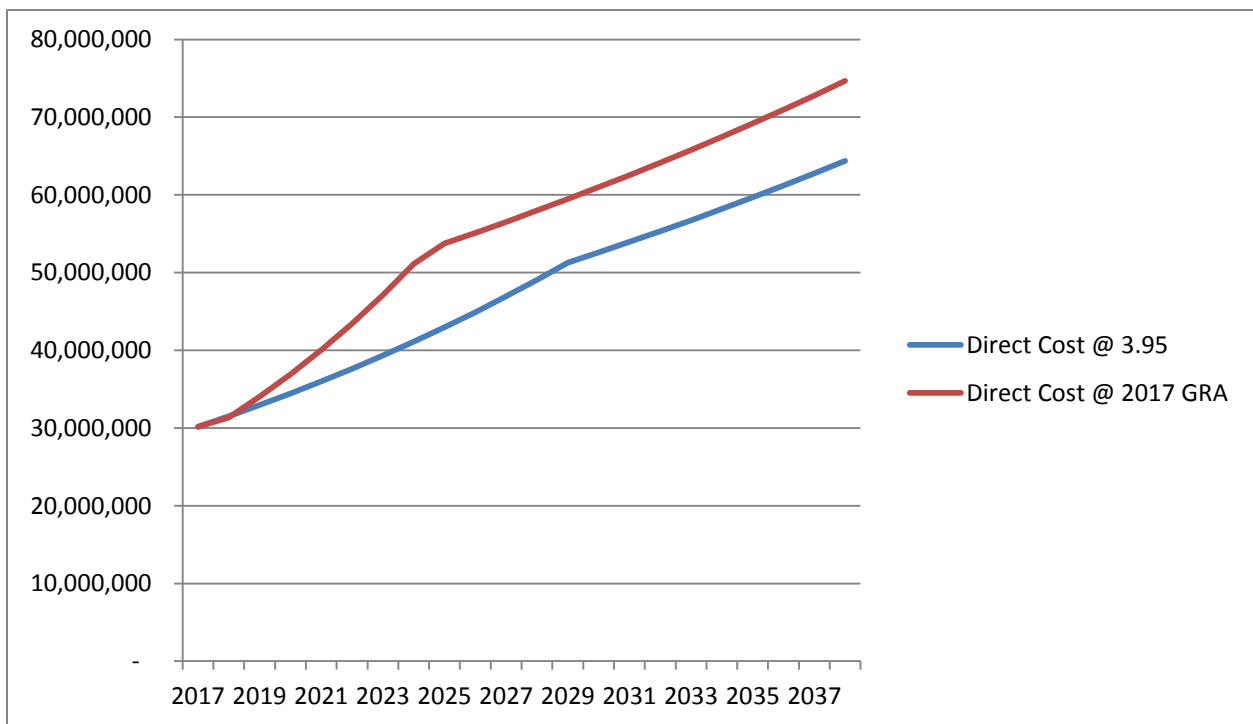
⁸ These calculations are derived based on actual billings from 2015 to 2016, as well as the total audited consolidated financial statement, less amortization and interest payments, from the 2016 annual report. The derived percentage of electricity use is consistent with the Statistics Canada Total Input Use estimates.



amounts to an average compound annual growth rate of 3.7% in nominal terms from 2009 to 2016⁹.

Adjusting for past electricity price increases by Manitoba Hydro, this means real electricity consumption has been approximately 0.5% per year from 2009 to 2016. If Manitoba Hydro increases its rates by the proposed rate schedule, assuming no price elasticity¹⁰, the following impact would occur to direct costs (by way of comparison, the chart also provides what will occur under Manitoba Hydro's rate % approved / 3.95% scenario)¹¹:

Chart: Direct Electricity Billings



The total increase in direct electrical costs over the period 2017 to 2038 amounts to: \$162,349,160.

⁹ Please note, from this point forward, real and nominal calculations refer to price change from hydro rates, not consumer price index which would not be a relevant deflator to determine real growth.

¹⁰ For the purpose of this report, no multipliers are assumed (Type 1 or Type 2).

¹¹ Forecast from PUB MH I-34 Attachment 2



Indirect Cost

The City of Winnipeg has approximately 21,000 suppliers who are approved status in its accounts payable system. While that number fluctuates nearly daily as suppliers are added or removed, it generally remains within that magnitude. Of those 21,000 suppliers, approximately 9,000 of these are uniquely identified with accounts payable addresses located in Manitoba, which represents approximately 20% of all businesses with employees in Manitoba¹². Over 2016, the City of Winnipeg issued payment to these approximately 9,000 local Manitoban businesses in widely varying amounts, but was to an approximate total of \$600 million, not including PST or GST¹³.

It is generally accepted that these businesses use energy and in particular electricity in rendering their services and products. In turn, they will pass this expense plus a margin onto the City of Winnipeg to one degree or another, in order to achieve their desired return on investment. One method to approximate this amount is to use a fixed coefficient calculated as the fraction of electricity used out of total goods and services used by all Manitoba industries in the production of all goods and services in Manitoba.¹⁴

Statistics Canada supply and use tables articulate this coefficient, and from 2010 to 2013 this value was 1.4% in 2010, 1.29% in 2011, 1.4% in 2012 and 1.71% in 2013, the last year the series is available. For these four years, the average use of electricity as an input was 1.45%, which is one way to approximate the total amount of electricity use as an input for Manitoban businesses. Given that the City of Winnipeg provides a wide array of service types across Winnipeg, and therefore receives a wide-array of services and products from the local economy, for the purposes of this report, 1.4% is considered a reasonable estimate of electricity use by suppliers to the city. Therefore, assuming 1.4% of the \$600 million in billings reflects electricity costs plus a margin, this would mean, in 2016, \$8.4 million of billings are

¹² As at July 2017, Statistics Canada reported that there were approximately 41,000 businesses with employee's in Manitoba (Statistics Canada, 552-0006)

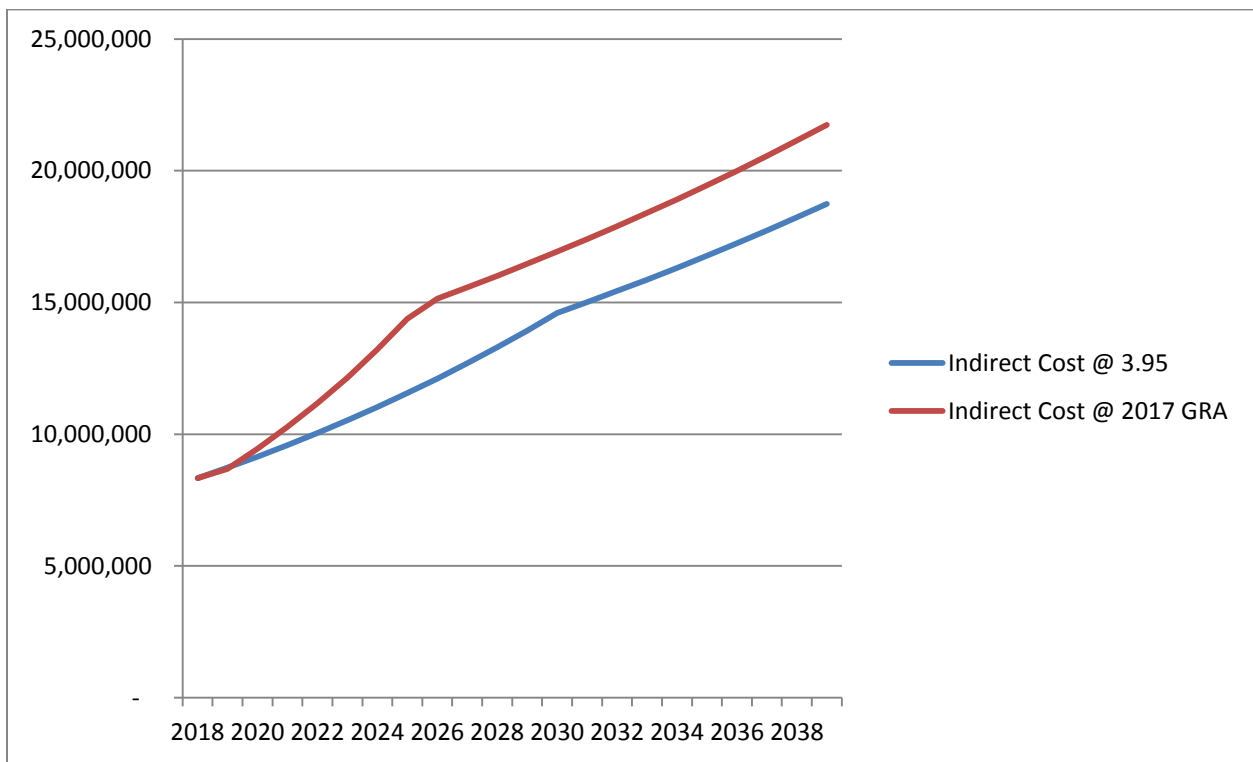
¹³ This figure is derived from accounts payable data at the City of Winnipeg.

¹⁴ Statistics Canada – Supply and Use – Table 381-0033 (Accessed October, 2017)



related to electricity. Assuming a conservative 5% profit margin, the pure hydro amount equals approximately \$8 million. It is reasonable to assume that as their costs increase by the compounded rate increase that Manitoba Hydro seeks, some of those incremental costs will be passed onto the City of Winnipeg. As such, the \$8 million will be escalated using the proposed rate increase which is a conservative estimate. . If Manitoba Hydro increases its rates by the proposed rate schedule, assuming no price elasticity, the following would occur to indirect costs (by way of comparison, the chart also provides what will occur under Manitoba Hydro's rate % approved / 3.95% scenario):

Chart: Indirect Electricity Costs



The total increase in indirect electrical costs over the period 2017 to 2038 amounts to: \$ 46,317,533 .



City of Winnipeg Electricity Tax

As per Sections 441 - 450 of The City of Winnipeg Charter, The City of Winnipeg is given the authority to adopt a by-law to impose a tax on the consumption of electricity and natural gas for non-heating purposes within the city limits. The tax is calculated, collected and remitted by the seller. The tax collected is treated as general revenue and, along with Property Taxes, is used to pay for the various services provided by the City of Winnipeg to the residents. Two rates are used for the determination of the tax: 2.5% for domestic purposes and 5% for other than domestic purposes.

Summary of Electricity Tax Revenue						
	2012	2013	2014	2015	2016	2017
Jan	1,355,552	1,475,506	1,594,685	1,606,742	1,620,963	1,730,555
Feb	1,284,722	1,436,824	1,498,421	1,442,698	1,480,166	1,449,811
Mar	1,215,754	1,263,886	1,449,399	1,448,788	1,442,321	1,500,375
Apr	1,181,942	1,297,511	1,357,057	1,330,034	1,364,107	1,414,801
May	1,159,905	1,238,558	1,275,949	1,280,469	1,335,886	1,356,175
Jun	1,171,817	1,244,083	1,314,116	1,298,038	1,363,811	1,405,183
Jul	1,361,975	1,404,695	1,374,745	1,439,505	1,455,021	1,477,587
Aug	1,353,358	1,333,859	1,465,439	1,521,884	1,483,893	1,539,207
Sep	1,245,661	1,416,339	1,284,672	1,390,535	1,432,884	1,494,387
Oct	1,168,095	1,204,850	1,266,636	1,297,671	1,362,192	
Nov	1,269,699	1,373,306	1,343,054	1,322,585	1,343,365	
Dec	1,273,876	1,304,519	1,435,489	1,393,300	1,486,534	
Total	15,042,358	15,993,935	16,659,660	16,772,249	17,171,144	13,368,082

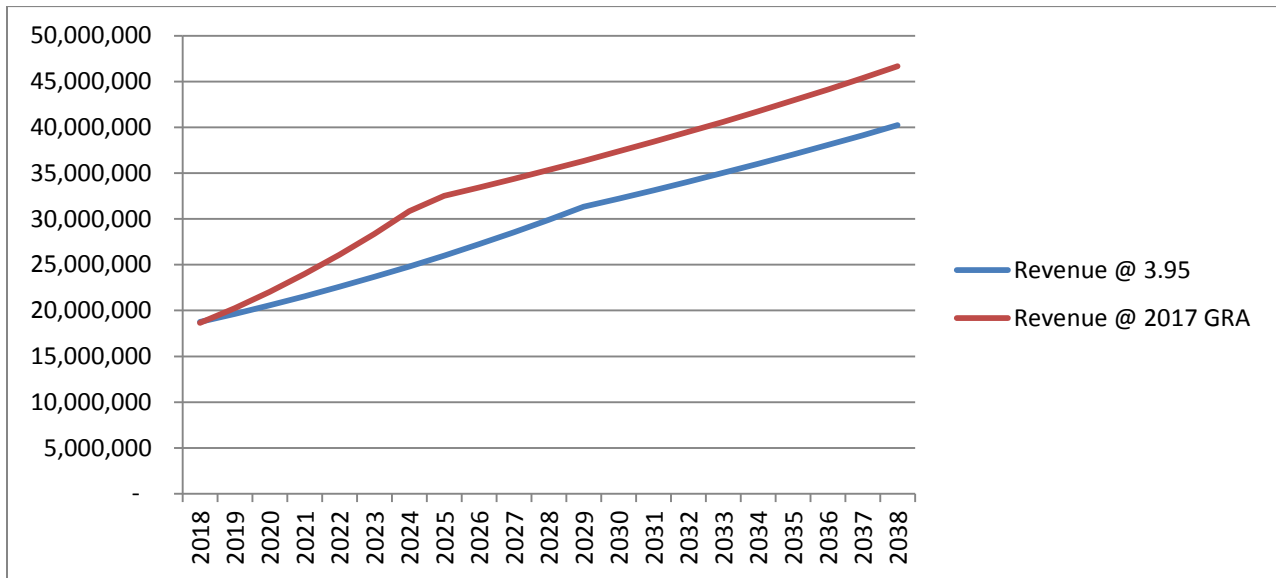
Source: City of Winnipeg, Assessment and Taxation

As revenues at Manitoba Hydro increase from load growth as well as because of price change, so too will the tax revenue of the City of Winnipeg. For the purposes of this report, the City of Winnipeg will increase the 2016 taxation revenue first by the forecasted Gross Firm Energy including demand side management (DSM) percentage amount of 0.8% per year (held constant) and then by the projected rate increases. . If Manitoba Hydro increases its rates by the proposed rate schedule, assuming no price



elasticity, the following would occur to City electricity tax revenues (by way of comparison, the chart also provides what will occur under Manitoba Hydro’s rate % approved / 3.95% scenario):

Chart: City Electricity Tax Revenues



The total increase in City electricity tax revenues over the period 2017 to 2038 amounts to:

\$ 99,415,628.

Estimated Net Impact to City of Winnipeg Finances from Direct and Indirect Costs and Expected Revenues

After calculating the estimated direct and indirect cost increases for the City of Winnipeg as well as the expected increase of revenue from the electricity tax, the net cumulative effect on City of Winnipeg finances amounts to additional costs of \$109,251,066. On a net present value basis assuming a 6% discount rate, this amounts to \$51,244,581.

To put this in perspective, the net present value of the additional costs of the proposed Manitoba Hydro rates constitutes an additional 58% to the current \$89 million dollar operating budget deficit.



Estimation of Impact on Businesses and Citizens of Winnipeg

Each year the City of Winnipeg prepares an annual budget that is ultimately confirmed by Council. Each year the City faces new financial and economic challenges that result in trade-offs and choices. Generally speaking, City and Council make all effort to align spending with citizen trends and preferences through a collaborative process. Indicators of this can be seen by examining the community trends citizen survey, which informs administration and Council of citizen priorities, such as they are expressed by citizens. For instance, for the past three years, the citizen survey has clearly indicated that citizens prioritize roads and infrastructure as the single most important thing to improve the quality of life in Winnipeg – at 41% of responses. Putting this in perspective, the second largest category is crime and policing at 15%.¹⁵ To this end, roads and road maintenance, as well as policing have been prioritized financially over the past several years. These services, along with the myriad of other services provided by the City cost money. As previously noted the City has an unsustainable deficit in its operating budget. For the upcoming fiscal period of 2018, the operating budget deficit is \$89 million dollars. By 2022 (the last year of the five year period in which Manitoba Hydro seeks annual rate increases of 7.9%), the projected operating deficit is approximately \$207 million. This does not take into account Manitoba Hydro's rate increases, the effect of which will only increase the operating budget deficit unless steps are taken by Council to attempt to address this.

To achieve this, the most likely outcome is an optimal choice between reducing services in one way or another, or by passing costs onto citizens directly; however in either case the outcome of a compounded electricity rate increase will be an impact to citizens and businesses. On the one hand, a first option for the City is a reduction in the operating budget where possible, would be a rendering of savings from non-electricity areas or areas that are not priorities. On the other hand, a second option for the City of Winnipeg would be to directly pass these expenses onto citizens and businesses. The reality of the

¹⁵ http://www.winnipeg.ca/cao/pdfs/CommunityTrendsandPerformanceReportVolume1_2018.pdf



outcome will be a choice somewhere between those two extremes. From the perspective of passing on costs, 33% of revenue is through property taxation; the other 67% does come from citizens and businesses in one form or another – such as through water and utility fees or grants from other levels of government. If the total amount of the estimated incremental cost to the City of Winnipeg was passed on entirely, and if all else were held constant, it would necessarily result in an increase of property taxes. By way of example, if the total estimated incremental costs to the City of Winnipeg for the year 2021 were passed on entirely to property taxes, it would result in an approximate 0.5% increase in additional property taxes; for 2025, it would result in an approximate increase of 1.35% in additional property taxes. If the choice was to remove services, the most likely outcome would be operating or administrative costs. While this last resort is true for any institution or government, the reality is that the City of Winnipeg is facing a current operating budget structural operating deficit of on the order of \$89 million, and therefore, while some cost reduction can be achieved, not all will. Therefore, the most likely option would be a reduction of capital spending.

Estimation of Impact on Manitoba and Winnipeg GDP

The City of Winnipeg retains the Conference Board of Canada to provide consultation on economic expectations through regular forecasts like the Metropolitan Outlook 1. The most recent Metropolitan Outlook was published in October 2017 and provides a perspective of the future if Manitoba Hydro's rates were to increase based on the current general rate application. While not all changes to the economy can be attributed to Manitoba Hydro, the Conference Board of Canada explicitly states that costs of the major civil construction projects have ballooned and will "...likely be paid for by rate hikes for households in Manitoba, dampening their purchasing power." (Conference Board of Canada, 2017). This is a reasonable assumption. The CBC then provides a table detailing the expected change in retail sales at the Manitoba level, which states:



Economic Indicators – Retail Sales in Manitoba (% Change)

2014	2015	2016	2017	2018	2019	2020	2021
4.4	1.6	4.2	5.2	1.6	1.3	1.3	1.3

In summary and as it concerns the impact of Manitoba Hydro’s current general rate application, were those rates to be approved, there will be a significant negative impact on the economy of Manitoba as a whole, and given the overall importance of the economy of Winnipeg to Manitoba (Winnipeg’s GDP constitutes approximately 67% of Manitoba’s GDP), there will be a significant negative impact on the economy of Winnipeg.

Experience in the Risk Analysis at Manitoba Hydro

One of the last projects I worked on while employed at Manitoba Hydro was the December 2015 Financial Targets Review filed with the PUB¹⁶. The team of individuals charged with the design, implementation and studying of rate impacts of a stochastic interest rate generator were highly educated and motivated to advance the decision science of long-range planning. These individuals included a team of consultants from the Berkeley Research Group (BRG). The outcome of the analysis was to be used for advancing decision processes by Manitoba Hydro leadership and the intent of the review was to help guide the thought process away from discrete interpretations of financial outcomes to probabilistic, risk-based decisions.

The report is a long-term financial planning analysis for Manitoba Hydro. The report analyzed impact on certain financial measures that are typically used in analyzing the financial wellbeing of businesses and in particular the three that it looked at were debt:equity, interest coverage and capital coverage. The

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https://www.hydro.mb.ca/regulatory_affairs/pdf/electric/general_rate_application_2017/04.2_appendix_4.2_financial_target_review_report_mh.pdf



methodology involved running numerous scenarios where various risks (the two most critical being water flow and interest rates) would impact those financial measures, in order to see what the impact would be on the long-term financial viability of Manitoba Hydro. In summary, the report concludes that after having run all of these various modeling's where risk factors were varied, that the long-term financial viability of Manitoba Hydro was acceptable and sustainable under the assumed rate scenario of 3.95%.

Summary

There is little doubt that should the rate increases sought by Manitoba Hydro be approved there will be significant negative cost consequences to the City of Winnipeg which in view of the City's unsustainable structural deficit in its operating budget and capital budget will have negative impacts on citizens and businesses of Winnipeg either through increases in property taxes, reduction in services, or a combination thereof. These negative impacts are confirmed not only by the City's own analysis, but also by the Conference Board of Canada. Moreover, Manitoba Hydro's own 2015 Financial Targets Review demonstrates that the long term financial viability of Manitoba Hydro can be maintained at the indicative 3.95% rate increases projected in Manitoba Hydro's integrated financial forecast 2015.

Tyler Markowsky, City Economist, City of Winnipeg

October 31 2017