

FINANCIAL TARGET REVIEW (2015)

FINANCIAL PLANNING DEPARTMENT
FINANCE & REGULATORY

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Executive Summary

Manitoba Hydro's financial and operational risks are significant and the Corporation manages these risks through the maintenance of an adequate level of financial reserves (retained earnings) in order to provide customers with long-term rate stability and maintain access to low-cost financing.

Manitoba Hydro currently has three primary financial targets for consolidated operations which were set in 1995 after an internal and external review and are used to assess the financial strength of the Corporation:

Debt/Equity: Maintain a minimum debt/equity ratio of 75:25.

Interest Coverage: Maintain a minimum annual gross interest coverage ratio of greater than 1.20.

Capital Coverage: Maintain a capital coverage ratio of greater than 1.20 (excepting new major generation and transmission).

In setting financial targets, it was recognized that the targets may not be attained during years of major investments in the generation and transmission system but that it would be necessary to demonstrate to credit rating agencies and other stakeholders that progress towards attaining the targets would occur over the long-term.

In the first phase of the review of Manitoba Hydro's current financial targets, KPMG was retained in November 2014 to provide recommendations with respect to appropriate financial targets which align with the mandate of Manitoba Hydro and the interests of its stakeholders considering its operating and business outlook and associated risks. It was important that Manitoba Hydro's financial targets be externally reviewed to determine their continuing applicability during the period of significant capital investment.

KPMG's financial target recommendations considered the objectives of maintaining rate stability for customers while at the same time maintaining safe and reliable service, the period of significant capital investment and infrastructure renewal that Manitoba Hydro is entering into, and the maintenance of Manitoba Hydro's self-supporting status for credit rating purposes.

Two key observations that influenced KPMG's recommendations are that, relative to other Crown utilities with a significant base of hydro-electric generation, Manitoba Hydro faces a number of heightened risks and that the Corporation's target equity ratio is at the low end of those planned by other power utilities.

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KPMG's overall finding was that the current financial targets used by Manitoba Hydro are appropriate. KPMG's key recommendations are that:

- Manitoba Hydro's debt to equity ratio in the long term should fall within the range of 75:25 to 70:30 and to maintain a minimum equity ratio near 15% during major capital expansions.
- Manitoba Hydro adopt an EBITDA (earnings before interest, taxes, depreciation and amortization) interest coverage ratio with a minimum target of 1.80.
- Manitoba Hydro retain the current capital coverage ratio with a minimum target of 1.20.

In the final phase of the financial target review, Manitoba Hydro expanded the uncertainty analysis undertaken for the NFAT proceeding. This analysis generated 15,300 discrete financial projections based on varying water flows, export prices and interest rates and examined the impacts on the annual equity ratio, net income and cumulative retained earnings assuming the indicative 3.95% rate increases that are projected in IFF15.

Manitoba Hydro has developed its financial target recommendations to the Manitoba Hydro-Electric Board (MHEB) considering the findings and recommendations of KPMG and the expanded uncertainty analysis undertaken by the Corporation.

The additional quantitative analysis undertaken by Manitoba Hydro along with the scenario analysis contained in the KPMG report is intended to satisfy the PUB directive from Order 43/13 to file a detailed quantitative and probabilistic risk assessment and review of its operating and financial risks in order to allow it to assess the adequacy of the Corporation's reserves.

Manitoba Hydro recommends that the current minimum debt/equity ratio target of 75:25 be retained as its long-term financial target. Once this period of extensive capital investment is largely completed, Manitoba Hydro can reassess the merits of further strengthening its debt/equity ratio target, considering industry trends and capital market expectations.

While Manitoba Hydro does not disagree that the Corporation's higher risk profile would conceptually place it at the higher end of 75:25 to 70:30 debt/equity range, it is of the view that it would be impractical to adopt a 70:30 target at this time. If Manitoba Hydro committed to strengthening its debt/equity ratio target to 70:30, it is likely that sustained rate increases higher than the current projected 3.95% would be required to ensure achievement of the revised target. Additionally, based on the analysis conducted, Manitoba Hydro does not believe that maintenance of the 75:25 debt/equity ratio target places customers at undue risk of rate instability.

Manitoba Hydro is not recommending the adoption of a minimum debt/equity ratio of 85:15. In order to maintain a debt/equity ratio of 85:15, significantly higher rate increases would need to be imposed in the near term and it is Manitoba Hydro's view that such increases are impractical for customers. However, it is Manitoba Hydro's position that the Corporation should take all necessary

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measures to maintain its debt/equity ratio in excess of 90:10, including implementing regular, reasonable rate increases.

Manitoba Hydro recommends that an EBITDA interest coverage ratio with a minimum target of 1.80 be adopted to replace the current 1.20 EBIT interest coverage target. Manitoba Hydro accepts that the EBITDA interest coverage ratio is a superior measure of how much cushion the Corporation has on a cash flow basis before it is necessary to borrow to make interest payments, as well as allowing for better peer and credit rating comparisons.

Manitoba Hydro recommends that the current capital coverage ratio with a minimum target of 1.20 (excepting major new generation and transmission) be retained as it is an effective measure of the ability of the Corporation to generate sufficient cash to sustain its operations.

1.0 Background

Manitoba Hydro's financial and operational risks are significant and include the impacts of drought, new infrastructure development, aging infrastructure renewal and replacement, weather, price and market uncertainties, interest, inflation and foreign exchange rates, skilled labour availability and costs, increasing regulatory, environmental and legal requirements and accelerated technological change.

Manitoba Hydro manages these risks and provides customers with long-term rate stability and predictability through the maintenance of an adequate level of financial reserves (retained earnings). An adequate level of financial reserves is also required to maintain access to low-cost financing to keep rates low for customers.

Manitoba Hydro currently has three primary financial targets for consolidated operations which are used to assess the financial strength of the Corporation:

Debt/Equity: Maintain a minimum debt/equity ratio of 75:25.

Interest Coverage: Maintain a minimum annual gross interest coverage ratio of greater than 1.20.

Capital Coverage: Maintain a capital coverage ratio of greater than 1.20 (excepting new major generation and transmission).

Manitoba Hydro's current financial targets were set in 1995 after an internal and external review. Since that time, these targets have been internally reviewed and periodically enhanced but are largely in the same form as originally adopted.

In setting financial targets, it was recognized that the targets may not be attained during years of major investments in the generation and transmission system but that it would be necessary for Manitoba Hydro to demonstrate to credit rating agencies and other stakeholders that progress towards attaining the targets would occur over the long-term after the major capital system expansion program.

The required investments in new generation and transmission and existing infrastructure in the next number of years will place considerable pressure on Manitoba Hydro's key financial ratios. Recognizing this situation, it was important that Manitoba Hydro's financial targets be externally reviewed to determine their continuing applicability during this period of significant capital investment.

In the first phase of the review of Manitoba Hydro's current financial targets, KPMG was retained in November 2014 to provide recommendations with respect to appropriate financial targets which align with the mandate of Manitoba Hydro and the interests of its stakeholders considering its operating and business outlook and associated risks.

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KPMG's financial target recommendations considered the objectives of maintaining rate stability for customers while at the same time maintaining safe and reliable service, the period of significant capital investment and infrastructure renewal that Manitoba Hydro is entering into, and the maintenance of Manitoba Hydro's self-supporting status for credit rating purposes.

KPMG's observations and recommendations can be found in its report to Manitoba Hydro which is dated May 2015 provided in Appendix A of this report.

Manitoba Hydro's understanding of key factors and observations that influenced KPMG's recommendations are as follows:

- Relative to other Crown utilities with a significant base of hydro-electric generation, Manitoba Hydro faces a number of heightened risks including a larger capital investment program, greater hydrology risks, significant reliance on export revenues, and higher assets and debt on a per capita basis. These risks suggest that Manitoba Hydro should have financial targets that provide a significant amount of equity cushion.
- Manitoba Hydro's target equity ratio is at the low end of those maintained or forecast by other power utilities and a number of those utilities plan to strengthen their financial ratios in the longer term.
- Loss of self-supporting status would have very detrimental effects on the Province and the utility. Uncertainty with respect to when self-supporting status would be lost suggests that financial targets should err on the side of caution.
- Additional rate increases in the early years of the forecast horizon can result in a significant improvement in Manitoba Hydro's financial metrics in later years reducing the impact of interest compounding on the additional debt that is required when rate increases are lower.
- Manitoba Hydro has limited ability to restrain a drop in financial ratios during adverse conditions such as drought which highlights the risk of having an equity ratio that approaches 10%.
- Manitoba Hydro's capital investment program is characterized by periodic "bumps" or "hills" of large magnitude which magnify the challenges associated with Manitoba Hydro's limited levers with which to adjust its equity cushion.
- Manitoba Hydro's current electricity rates for its domestic consumers are among the lowest in North America which gives the Corporation additional ability to raise rates in the event of financial distress.
- Government guarantees enable government-owned utilities such as Manitoba Hydro to have lower equity ratios in their capital structure and to have lower financial metrics than averages observed for investor-owned utilities.

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KPMG's overall finding was that the current financial targets used by Manitoba Hydro are appropriate. The following is a summary of KPMG's key findings and recommendations to Manitoba Hydro:

Debt/Equity: The current debt to equity ratio of 75:25 is a reasonable long-term target but 70:30 would provide additional financial strength and address unique financial challenges and risks. KPMG recommended that the debt to equity ratio in the long term should fall within the range of 75:25 to 70:30. KPMG also suggested that it would be desirable to maintain a minimum equity ratio near 15% during major capital expansions.

Interest Coverage: If Manitoba Hydro continues with the current EBIT (earnings before interest and taxes) interest coverage ratio, a minimum target of 1.20 is reasonable. KPMG recommended Manitoba Hydro adopt an EBITDA (earnings before interest, taxes, depreciation and amortization) interest coverage ratio with a minimum target of 1.80.

Capital Coverage: The capital coverage ratio is a unique and important financial target to Manitoba Hydro. KPMG found that the current minimum target of 1.20 is reasonable.

In Section 5 of this report, Manitoba Hydro provides its recommendations on financial targets to the Manitoba Hydro-Electric Board (MHEB) considering the findings and recommendations of KPMG and the additional quantitative analysis undertaken by Manitoba Hydro which is summarized in the following sections of this report.

2.0 Manitoba Hydro Uncertainty Analysis

In the final phase of the financial target review, Manitoba Hydro has undertaken additional quantitative analysis and updated for IFF15 assumptions to develop and support recommendations to the MHEB in conjunction with the approval of IFF15 in December of 2015.

Traditionally, as part of the Integrated Financial Forecast (IFF) process, Manitoba Hydro has produced a reference case financial forecast and analyzed the sensitivity of financial results to changes in a number of key assumptions.

To date, the 2013 Needs For and Alternatives To (NFAT) uncertainty analysis has been the most comprehensive analysis undertaken by the Corporation. The NFAT analysis introduced the evaluation of financial metrics under a range of risk factors and then assigned probabilistic weightings to the results to determine an expected value for each metric. The NFAT analysis has been expanded for the Financial Target Review to encompass a broader range of uncertainty with respect to the key risk factors analyzed. The Financial Target Review supports and confirms the findings of the NFAT analysis that water flow variability and drought dominate all other risk factors and that export prices and interest rates are also significant risk factors.

The Financial Target Review combines these risk factors, some of which have offsetting impacts, to generate 15,300 financial projections. The financial metrics evaluated, including projected equity ratio, net income and losses and retained earnings, are given equal probabilistic weightings to produce a statistically significant sample for each of the metrics evaluated.

In Order 43/13, the PUB directed Manitoba Hydro to file a detailed quantitative and probabilistic risk assessment and review of its operating and financial risks in order to allow it to assess the adequacy of the Corporation's reserves. The additional quantitative analysis undertaken by Manitoba Hydro along with the scenario analysis contained in the KPMG report is intended to satisfy the directive from the PUB.

Section 3 of the report discusses the risk factors incorporated into the Financial Target Review and Section 4 reviews the results of the uncertainty analysis on the key financial metrics.

3.0 Discussion and Analysis of Manitoba Hydro’s Key Risks

3.1 Water Supply Variation and Drought Risk

The IFF is produced based on a forecast of interchange revenues and generation costs, generally referred to as net extraprovincial revenue, based on the average of all historic stream flows. A review of the chronology of the 102 historic stream flow record reveals the stream flow variability from year to year, as well as trends over various periods of time. Much of this water flow variability is dampened when average revenues are assumed in the IFF. Figure 3-1 shows the annual energy (in TW.h) from inflows over the period from 1912 to 2013.

Figure 3-1

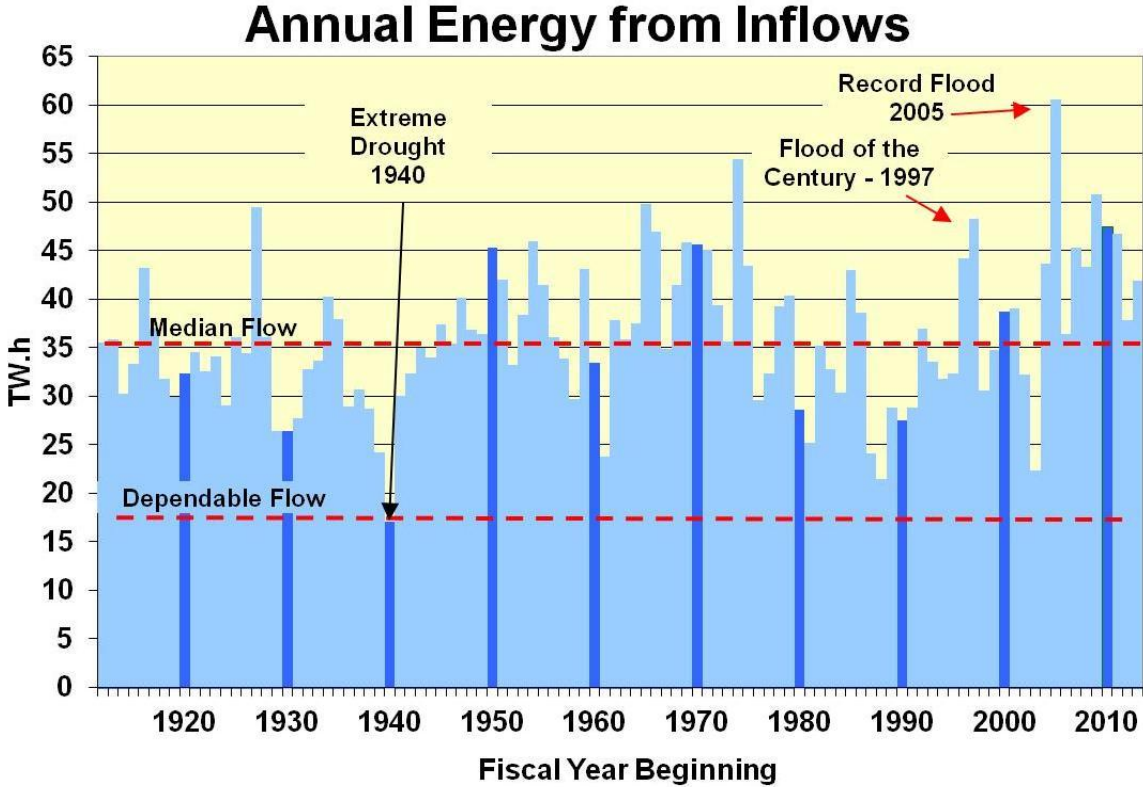


Figure 3-2 shows the year over year change of the annual energy (in TW.h) over the same time period and demonstrates that the change in energy from one year to the next can be extreme. As water flow conditions are the main driver of net extraprovincial revenues and net income has a strong relationship to the level of net extraprovincial revenues, it follows that net income can be very volatile.

Figure 3-2

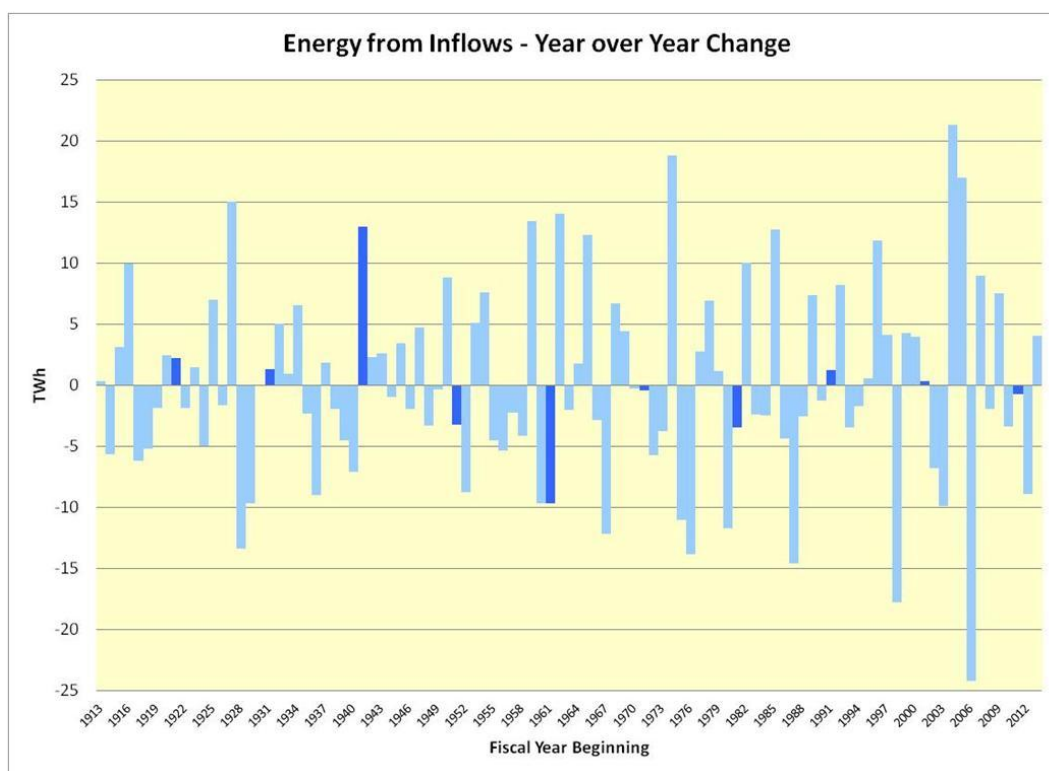
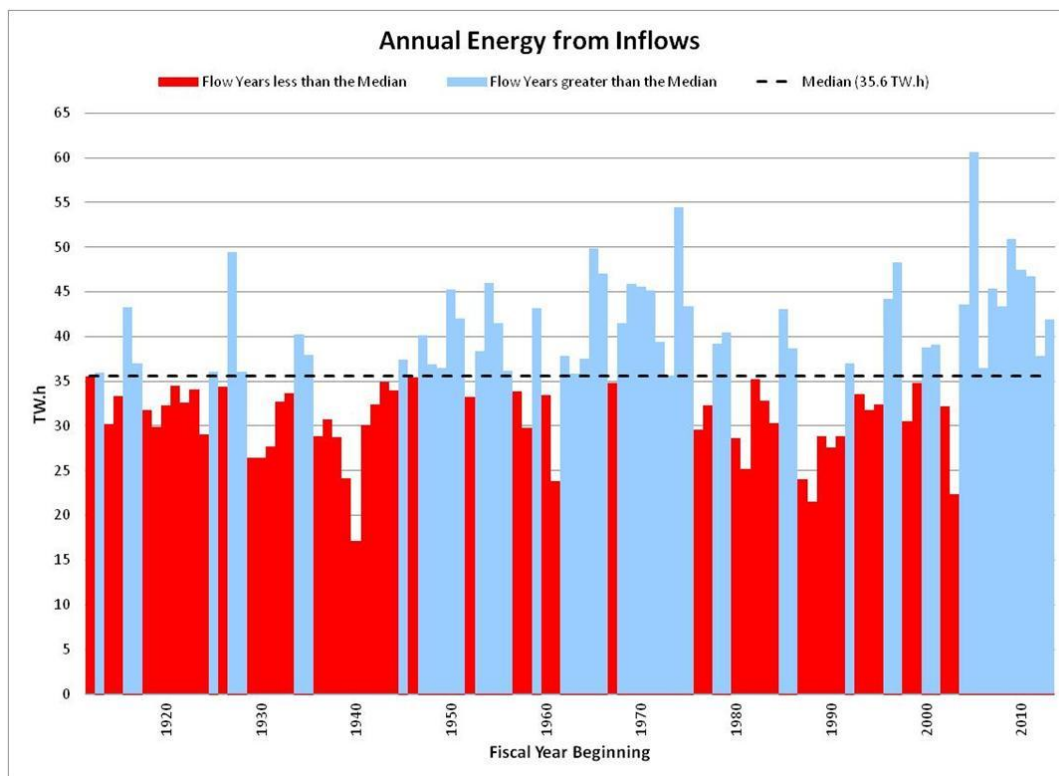


Figure 3-3 contains the same data points as in Figure 3-1; however, in Figure 3-3 the years that were below the historic median of 35.6 TW.h are denoted in red and the years above the historic median are denoted in blue. This colour coding highlights trends or patterns of extended periods where the annual energy remained above or below the historic median level. For example, the period in the 1920's to 1940's had predominantly lower than median energy. The following period in the 1950's to 1970's had predominantly higher than median energy. The 1980's to early 2000's was a period of lower than median energy. Now, mid 2000's to present day, energy has been well above median.

If historical water flow cycles are repeated, it is reasonable to expect a period of lower than median energy in the near term. For this reason, it is important to understand the potential variability of financial results from average in order to determine the appropriate financial targets for the Corporation.

Figure 3-3



To incorporate both the annual flow variability and the cycles, 102 'flow cases' were constructed each beginning with a different historical 'flow year' (i.e. 1912 to 2013) followed by a repeat of the chronological flow history. The 102 'flow cases' were run through the SPLASH production costing model to produce time series forecasts of flow related revenues and costs which were then incorporated into the financial forecast model to produce 102 financial projections.

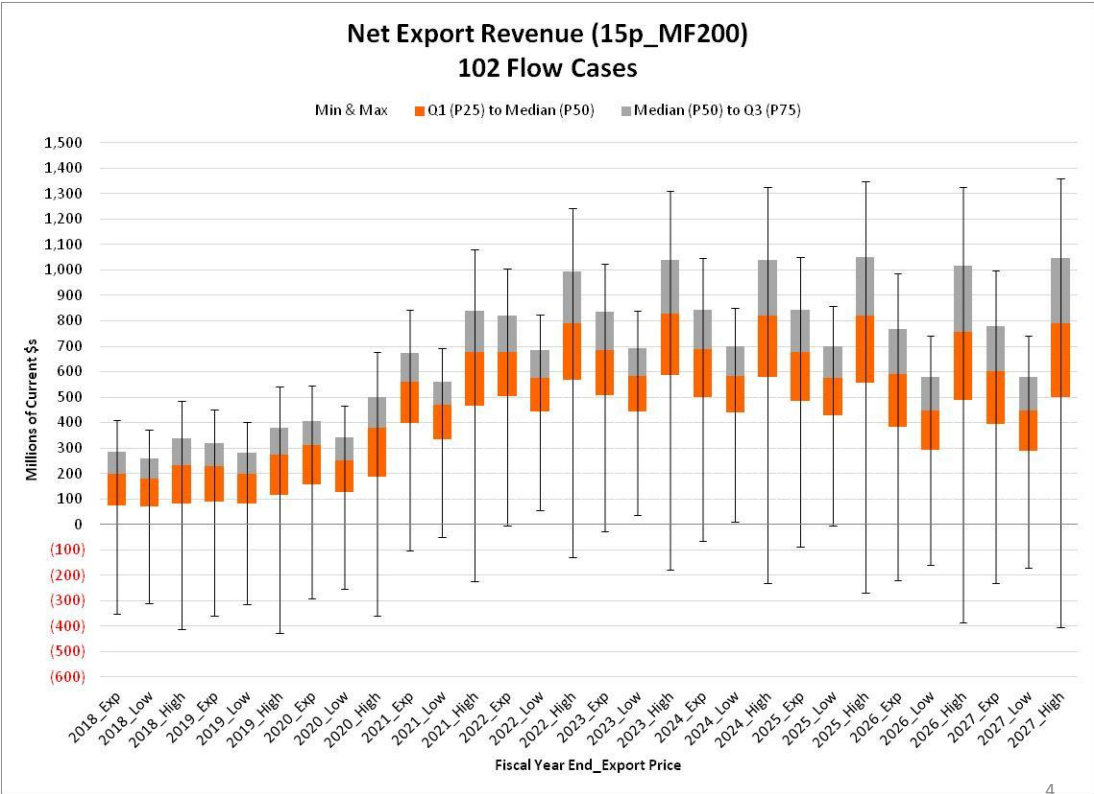
3.2 Electricity Export Prices

The 2015 Electricity Export Price Forecast contains three price forecasts (described below) and each price case was used in the SPLASH model to generate 306 distinct forecasts (102 flow cases x 3 price cases) of net export revenue.

- i. “Reference” Case – consultant’s best estimate of the future
- ii. “High” Case – a plausible scenario reflecting the upper limit of prolonged pricing
- iii. “Low” Case – a plausible scenario reflecting the lower limit of prolonged pricing

Figure 3-4 provides a sample set of data showing the annual variability of net extraprovincial revenues factoring in both water flow variability and export price uncertainty for the period 2018 to 2027. For each fiscal year, three box and whiskers are shown reflecting 102 flow cases for each of the three export price cases.

Figure 3-4



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From Figure 3-4, it can be observed that:

- The downside risk of net extraprovincial revenue is greater than the upside risk potential to higher thermal and import costs as well as lost revenue under low flows and limitations on the maximum amount of generation under high flows before plants must spill water.
- Higher export prices have greater variability relative to expected and low export prices due to the corresponding higher costs of imports and thermal generation.
- Net extraprovincial revenues are more favourable and have greater variability after Keeyask in-service as demonstrated by the longer box and whiskers post-2020 due to the surplus energy available from Keeyask being exposed to water flow and price risk.

3.3 Interest Rates

The IFF includes a consensus projection of interest rates from various external forecasters. Both short and long-term interest rates over the next five to ten years will have a substantial impact on financial performance as the Corporation proceeds on the construction of the \$4.6 billion Bipole III Reliability and the \$6.5 billion Keeyask projects. For the purposes of uncertainty analysis, the consensus forecast of interest rates has some limitations. Sources for the interest rate forecasts tend to assume a prolonged, steady state interest rate environment that rapidly reverts to the historical mean. As an enhancement to the interest rate analysis, the uncertainty analysis examines a slower convergence to the historical mean which is consistent with the historical downward trend in benchmark interest rates as well as a slow economic recovery.

Manitoba Hydro undertook significant additional work to develop and validate the interest rate scenarios used in this uncertainty analysis. A publically available stochastic interest rate generator developed by the American Academy of Actuaries and the Society of Actuaries was used to produce the interest rate forecasts used in this analysis. This model is based on historical U.S. interest rates (Treasury Bills), and produces a time series going forward for bonds of different durations (3-month, 1-year, 10-year etc.) and captures both longer-term multi-year trends and shorter-term intra-annual variation. Manitoba Hydro engaged the Berkeley Research Group (BRG) to recommend an approach that made use of available data on current futures and options prices to establish and calibrate an appropriate range of interest rates emerging from the stochastic interest rate generator. BRG's scope of work, methodology and findings are discussed in Appendix B of this report.

The stochastic interest rate generator produces annual yield curves for 10,000 interest rate cases. The uncertainty analysis incorporates a representative sample set of 50 interest rate cases and examines the impacts of different interest rate scenarios that encompass rising and declining paths, interest rate shocks as well as steady-state scenarios that are consistent with history. Figures 3-5 and 3-6 show the mean and upper and lower bounds of the 50 Canadian short term and long term interest rate cases assumed for the analysis and compares these to the consensus forecast assumed in IFF15.

Figure 3-5

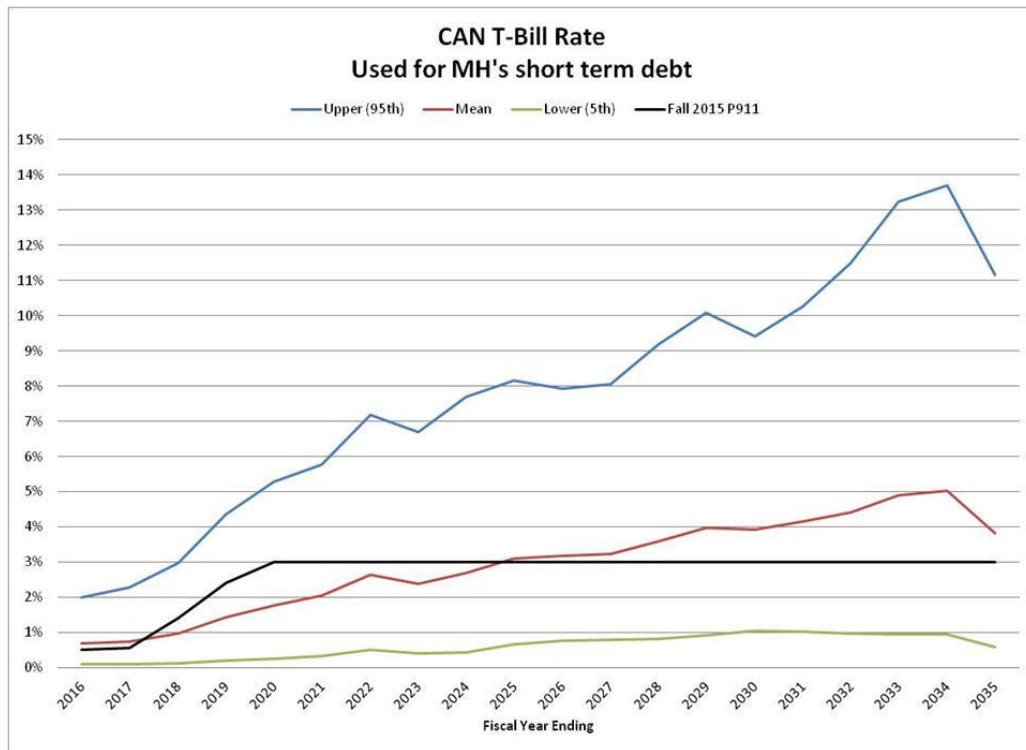
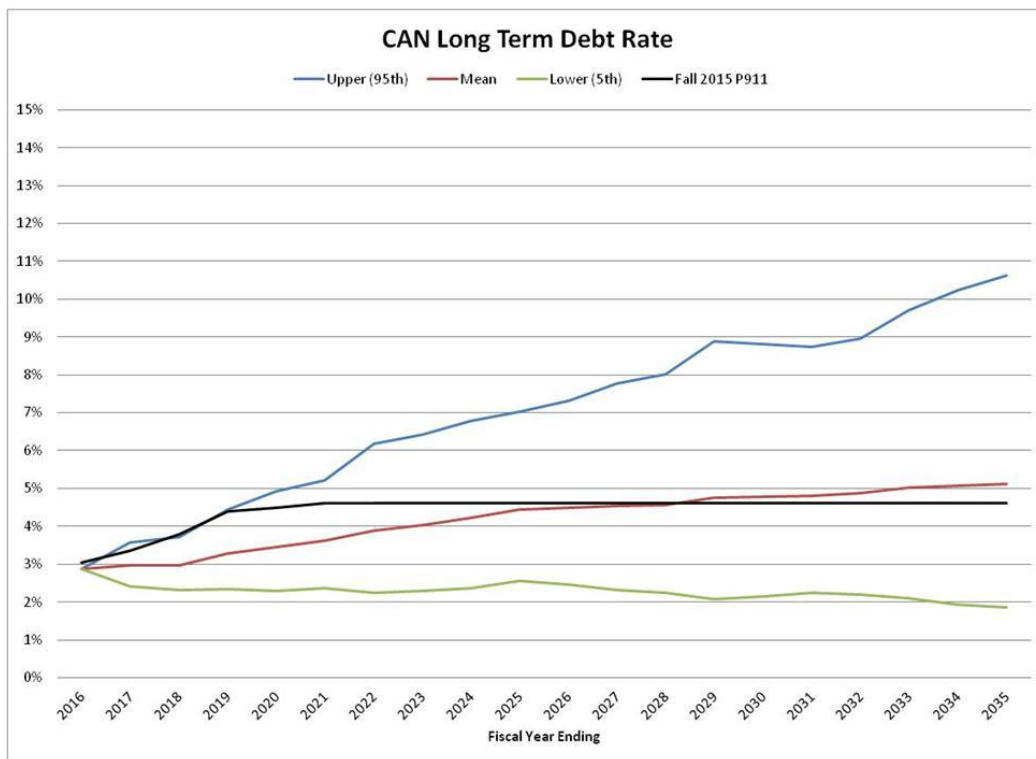


Figure 3-6



4.0 Results of the Uncertainty Analysis

The uncertainty analysis focuses on three key financial metrics from the pro forma financial statements – the annual equity ratio, net income and cumulative retained earnings for each projection generated.

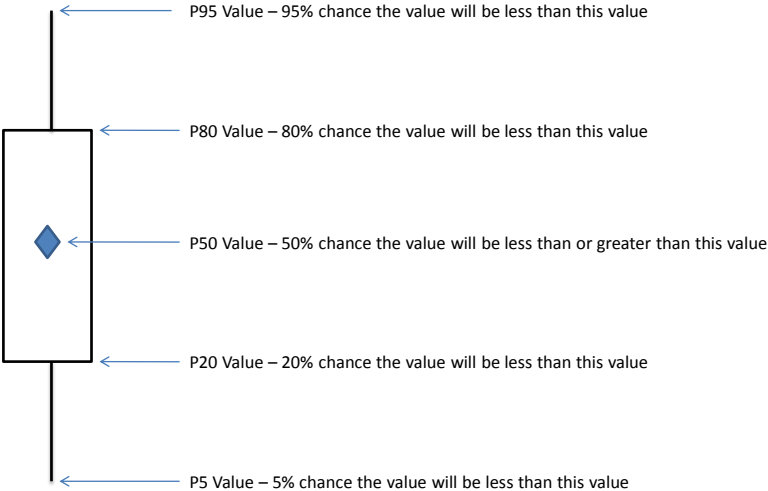
The following sections outline the financial results of 15,300 discrete financial projections incorporating the following:

- 102 water flows, multiplied by
- 3 export price cases, multiplied by
- 50 interest rate cases

It is important to note that all of the financial projections include the indicative 3.95% rate increases that are projected in IFF15.

The results for each of the three financial metrics in each year have been graphically depicted in a box plot. The box plot is a convenient way of showing groups of numerical data through their 20th and 80th percentiles. In other words, the box represents 60% of possible outcomes in a fiscal year with 20% of outcomes which can be higher and 20% can be lower than the box. Box plots also have lines extending vertically from the boxes (whiskers) indicating variability outside the 80th up to the 95th percentile and 20th down to the 5th percentile. Box plots display variation in samples of a statistical population without making any assumptions of the underlying statistical distribution. The following diagram explains how to interpret the figures in the report.

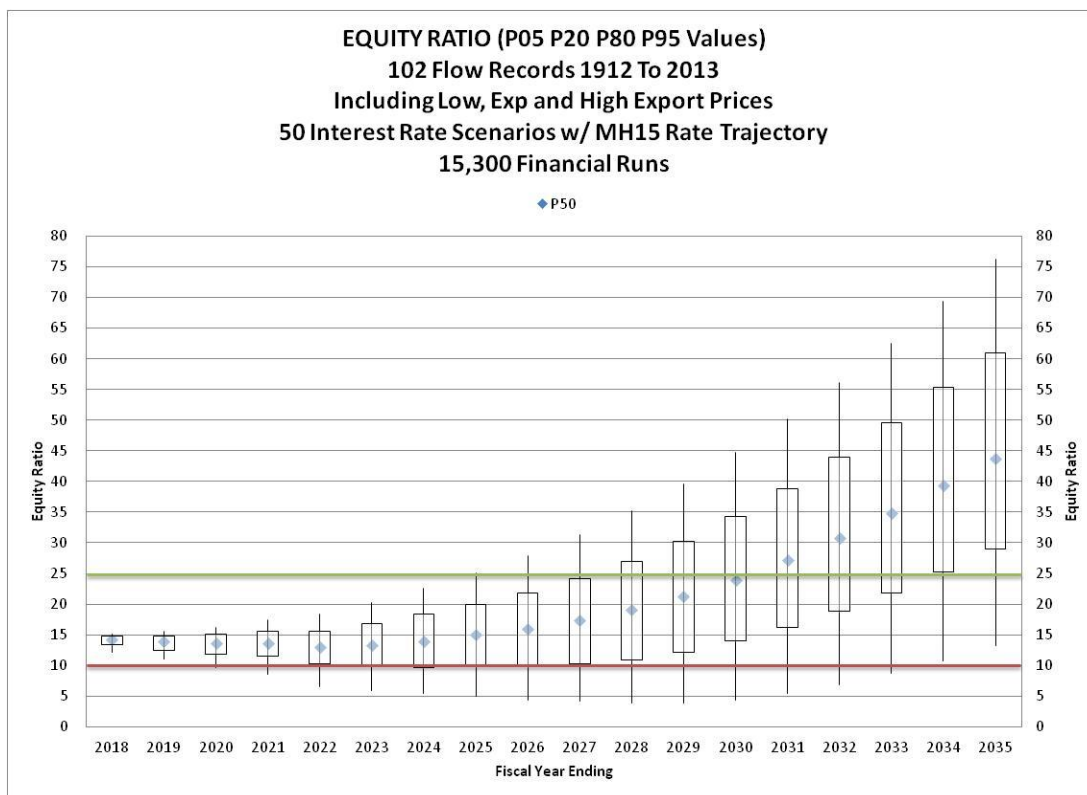
Box and Whisker Plot



4.1 Projected Equity Ratios

Figure 4-1 shows the equity ratios under the financial projections incorporating water flow, export price and interest rate risks.

Figure 4-1



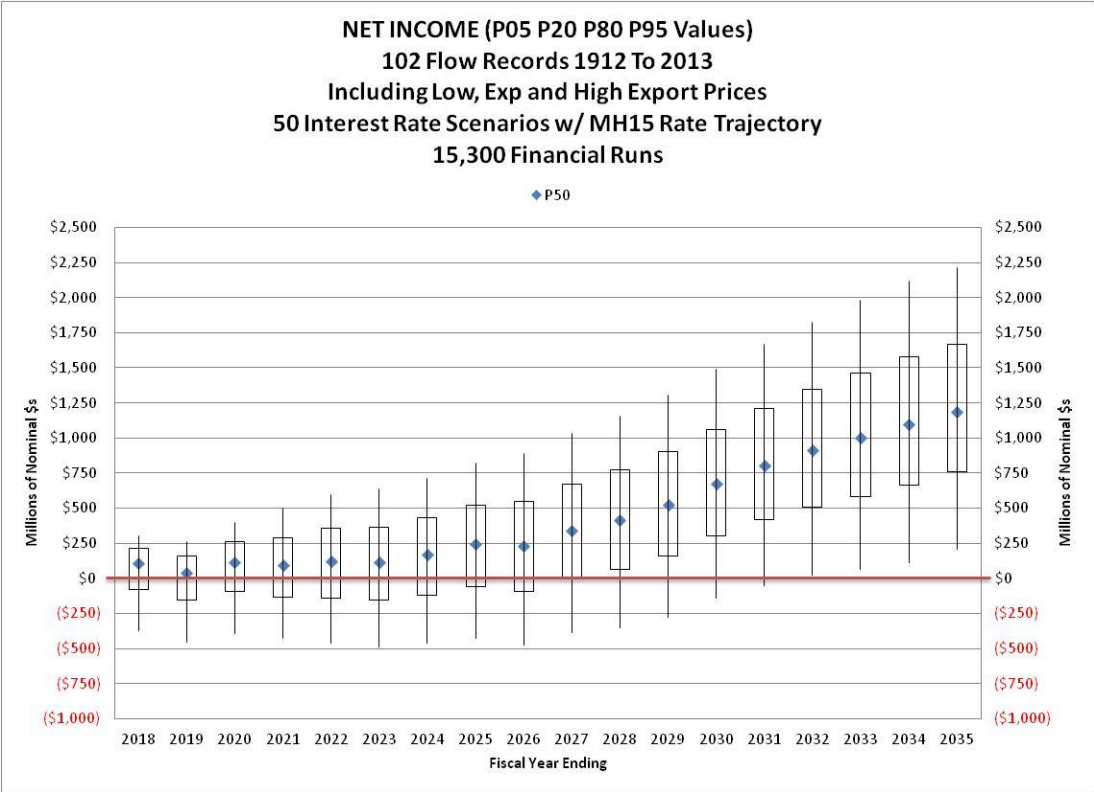
From Figure 4-1, it can be observed that:

- By 2018, the equity ratio is lower than 15% in 91% of the projections and is lower than 15% in 50% of the projections until 2025.
- The equity ratio is higher than 10% in approximately 80% of the projections from 2022 to 2027. During this timeframe, there is a relatively low likelihood that the projected equity ratio will fall below 5%.
- With regard to a longer term equity ratio target, approximately 50% of the projections reach the current target of 25% by 2031 and approximately 85% reach 25% by 2035. Nearly 80% of the projections reach 30% by 2035.

4.2 Projected Net Income or Losses

Figure 4-2 shows the annual projected net income under the range of projections.

Figure 4-2



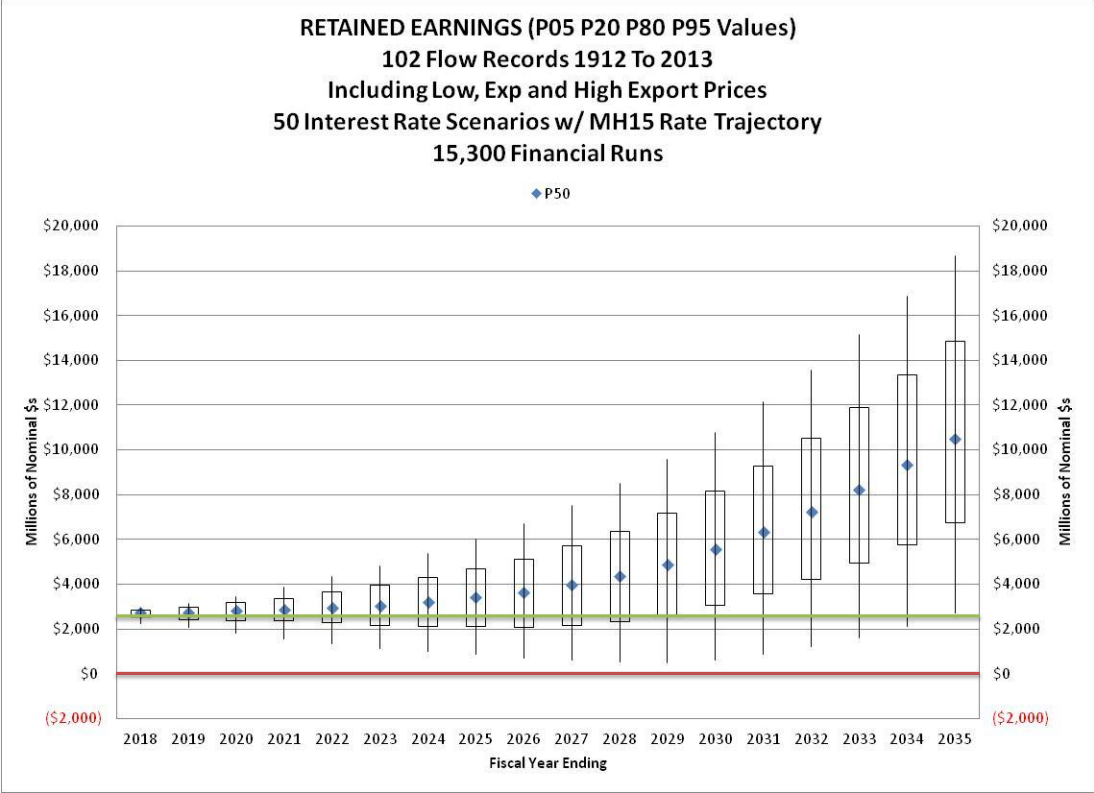
From Figure 4-2, it can be observed that:

- In 2018, 28% of the projections show a net loss and more than 40% show a net loss for 2019.
- From 2020 to 2026, approximately one third of the projections show a net loss for any given year.
- Cumulative net losses occur over the 7-year period from 2019 to 2026 in approximately one third of the projections.
- From 2018 to 2022, there is an approximate 10% likelihood in any one year that the projections result in a net loss greater than \$300 million, and from 2023 to 2026 an approximate 10% likelihood that the projections result in a net loss greater than \$400 million.

4.3 Projected Retained Earnings

Figure 4-3 summarizes the retained earnings results for the range of projections.

Figure 4-3



From Figure 4-3, it can be observed that:

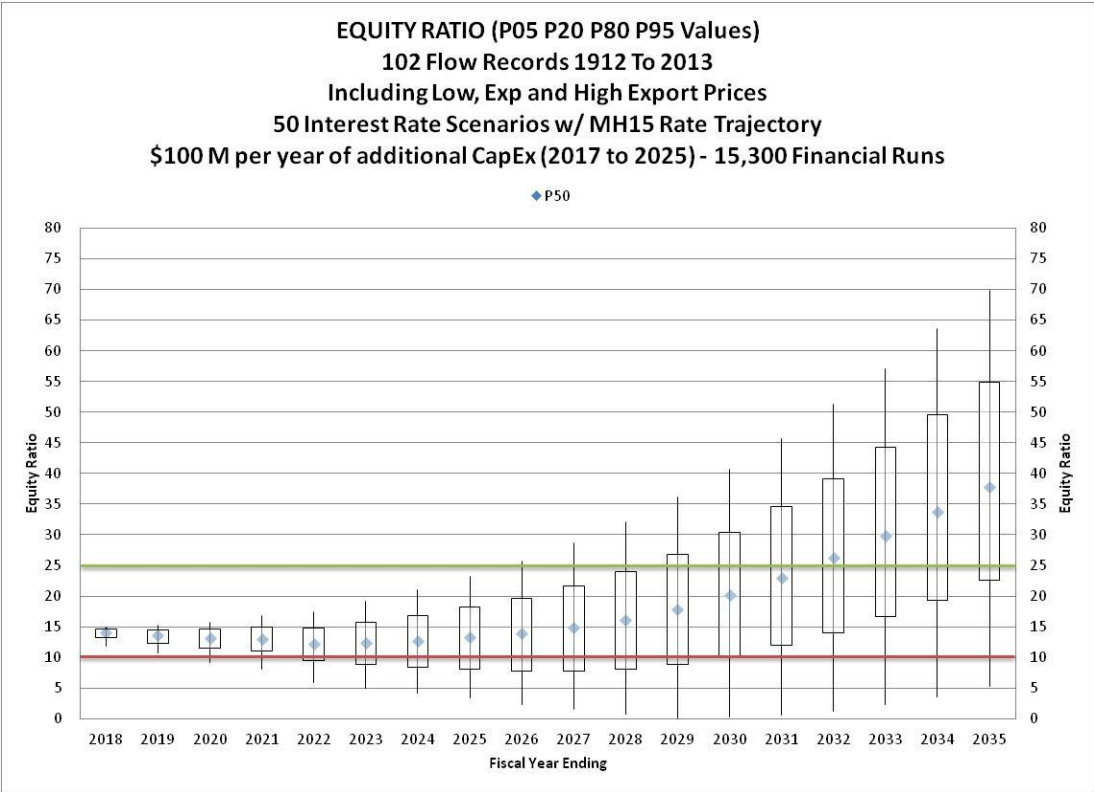
- Retained earnings are projected to deteriorate from current levels of \$2.8 billion in about 30% of the projections by 2026 before there is some level of improvement.
- From 2022 to 2027, retained earnings remain above \$2 billion in 80% of the cases.

4.4 Capital Expenditure Increase Sensitivity

Over the 10 year period (2016 to 2025), Manitoba Hydro plans to invest approximately \$17 billion to meet the growing energy needs of the Province and to renew existing infrastructure. This analysis tests the impact of potential increases to the capital costs or the addition of projects to the capital portfolio. Without attributing the capital expenditure increases to a specific project or projects, the uncertainty analysis was prepared with an additional \$100 million per year in spending during the first 10 years of the forecast. The additional approximate \$1 billion in capital spending represents approximately a 6% increase to the 10 year plan.

Figure 4-4 shows the equity ratio for projections assuming water flow variations, export price risk, interest rate risk and an increase of \$1 billion in capital expenditures.

Figure 4-4



From Figure 4-4, it can be observed that:

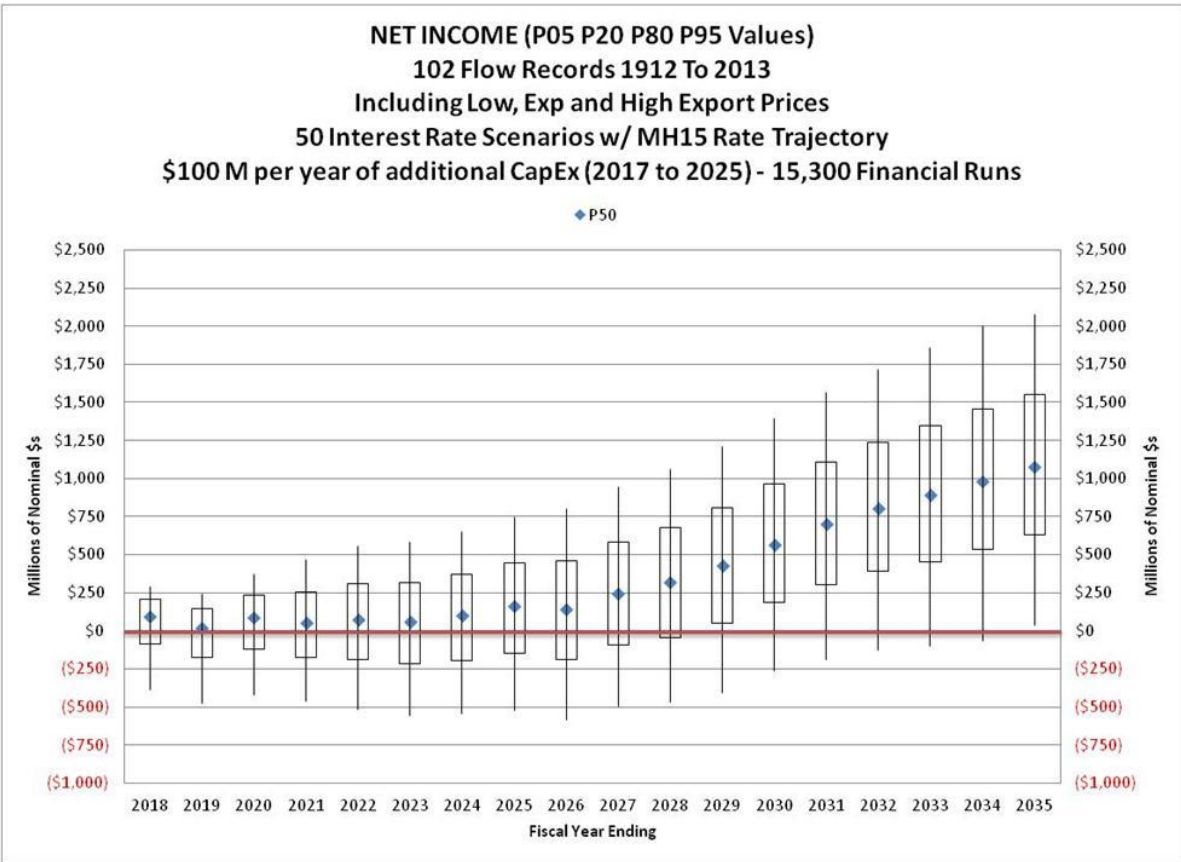
- The increase in capital expenditures results in significant downward pressure on the equity ratio.
- In 2018, the equity ratio is less than 15% in 96% of the projections (compared to 91% under CEF15 capital expenditures)

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- By 2026, the equity ratio is less than 10% in 30% of the projections (compared to 20%)
- During the 2019 to 2026 timeframe, the equity ratio fell below 5% in 12% of the projections (compared to 7%).
- With regard to a longer term equity ratio target, approximately 50% of the projections reach the current target of 25% by 2032 and approximately 75% reach 25% by 2035. Approximately 65% of the projections reach 30% by 2035.

Figure 4-5 shows the net income and loss impacts under the range of uncertainty assumptions and an increase of \$1 billion in capital expenditures.

Figure 4-5



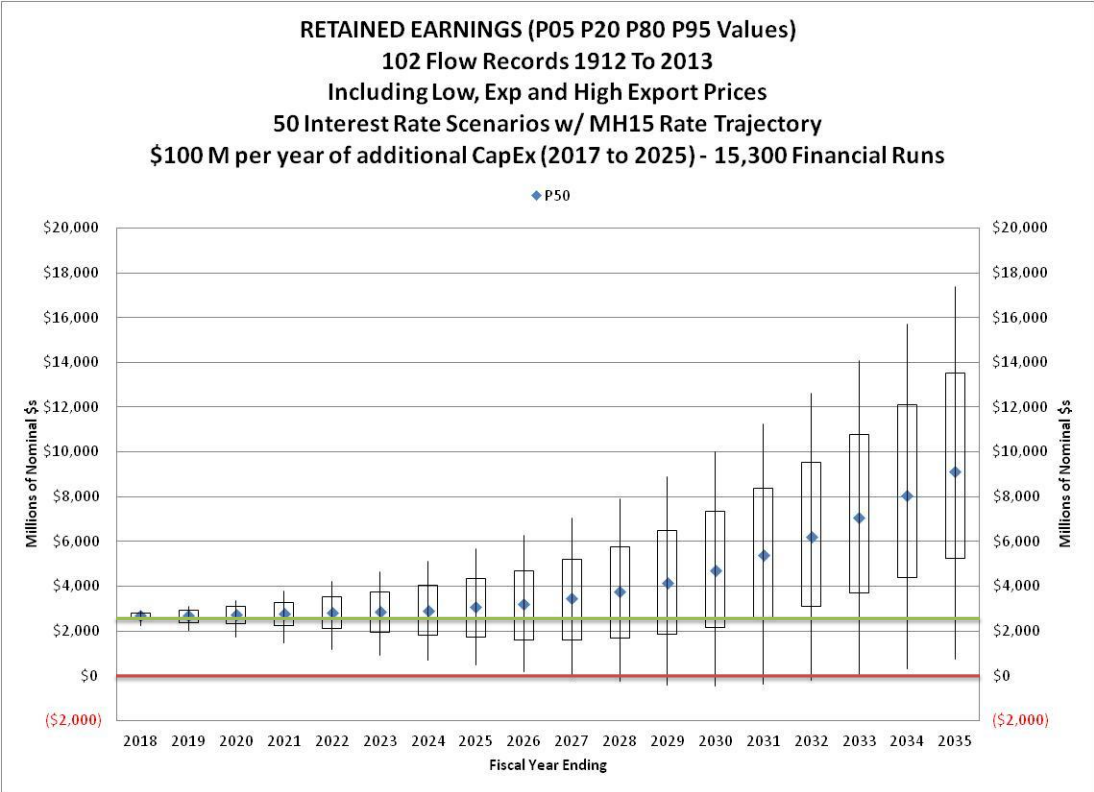
From Figure 4-5, it can be observed that:

- In 2018, there is a 29% chance of a loss.
- In 2019, there is a 46% chance of a loss.
- Between 2020 and 2026, there is on average a 38% chance of a loss in any given year.
- During the 2019 to 2026 timeframe, cumulative net income is zero or less in 38% of the projections.

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Figure 4-6 shows the retained earnings impacts under the range of uncertainty assumptions and an increase of \$1 billion in capital expenditures.

Figure 4-6



From Figure 4-6, it can be observed that:

- Increased capital expenditures also places downward pressure on retained earnings which are projected to deteriorate from current levels of \$2.8 billion in about 30% of the projections by 2031 before there is some level of improvement.
- From 2022 to 2029, retained earnings remain above \$2 billion in 65% of the cases.

5.0 Conclusions and Recommendations

KPMG's overall finding was that the current indicators used by Manitoba Hydro to measure its financial position are appropriate. Manitoba Hydro agrees with this finding. The following sections outline KPMG's key findings and recommendations as well as Manitoba Hydro's recommendations to the MHEB.

5.1 Debt/Equity Ratio

KPMG found that the current debt to equity ratio of 75:25 is a reasonable long-term target but that 70:30 would provide additional financial strength to address Manitoba Hydro's unique financial challenges and risks. Manitoba Hydro's financial ratios are weaker relative to other utilities, which generally have lower relative risk but have plans to strengthen their ratios in the longer term. KPMG recommended that the debt to equity ratio in the long term should fall within the range of 75:25 to 70:30, but acknowledges that Manitoba Hydro would need to depart from any target during periods of large capital investment or periods of financial stress, such as drought.

Manitoba Hydro does not disagree with KPMG's rationale that the Corporation's higher risk profile would conceptually place it at the higher end of 75:25 to 70:30 debt/equity range. However, Manitoba Hydro is of the view that it would be impractical to adopt the 70:30 target at this time. The uncertainty analysis shows that Manitoba Hydro is projected to achieve the current 75:25 debt/equity ratio target in 5% of the projections by 2025 demonstrating that the likelihood of achieving the current target within in the next decade at current projected rates is very small. Over the longer term to 2035, there is a greater likelihood of the Corporation achieving debt/equity ratios of 75:25 or higher. However, the variability in the equity ratio by 2035 is significant. If Manitoba Hydro committed to strengthening its debt/equity ratio target to 70:30, it is likely that sustained rate increases higher than the current projected 3.95% would be required to ensure achievement of the revised target.

Additionally, Manitoba Hydro does not believe that maintenance of the 75:25 debt/equity ratio target places customers in undue risk of rate instability. Over the 20-year forecast period, the uncertainty analysis shows that the equity ratio remains above 10% in 80% of the projections. In terms of net earnings, there is a somewhat higher risk that Manitoba Hydro will experience losses in the next decade (about 30% to 40% of projections). Given that Manitoba Hydro's current level of retained earnings is \$2.8 billion, there is some cushion for the Corporation to absorb losses without the need to immediately recover these from customers. However, it will be important for the Corporation to make annual contributions to retained earnings even in times of high water flows to balance out the reductions to retained earnings in times of low water flows so that rates are set at appropriate levels for average water levels. In this manner, customer rates are stabilized and reduce the risk to customers of large or sudden rate increases in the event of low water flows.

Manitoba Hydro recommends that the current minimum debt/equity ratio target of 75:25 be retained as its long-term financial target during the current period of extensive capital investment

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in major new generation and transmission assets. Once this period of extensive capital investment is largely completed, Manitoba Hydro can reassess the merits of further strengthening its debt/equity ratio target, considering industry trends and capital market expectations.

KPMG further recommended that it would be desirable to maintain a minimum equity ratio near 15% during major capital expansions due to the fact that the Corporation must rely on retained earnings as the sole source of its equity. Manitoba Hydro's ability to adjust its earnings stream in the near term is limited by the objective of providing rate stability to customers as noted above.

The uncertainty analysis shows that by 2018 more than 90% of the projections have debt/equity ratios lower than 85:15. In order to maintain 85:15, significantly higher rate increases would need to be imposed in the near term. It is Manitoba Hydro's view that such increases are impractical for customers and unnecessary as the debt/equity remains above 90:10 in 80% of the projections. If an adverse event occurs, the level of Manitoba's electricity rates is sufficiently low that Manitoba Hydro could seek compensatory rate relief, if required.

As a result Manitoba Hydro does not recommend adopting a minimum debt/equity ratio of 85:15. However, it is Manitoba Hydro's view that the Corporation should not target a debt/equity ratio at or below 90:10 and take all necessary measures to maintain the debt/equity ratio in excess of 90:10.

5.2 Interest Coverage Ratio

KPMG found that if Manitoba Hydro continues with the current EBIT (earnings before interest and taxes) interest coverage ratio, a minimum target of 1.20 is reasonable. KPMG recommended Manitoba Hydro adopt an EBITDA (earnings before interest, taxes, depreciation and amortization) interest coverage ratio with a minimum target of 1.80. The EBITDA interest coverage ratio is widely accepted and used by lenders, credit rating agencies and most utilities in the electric industry. KPMG's review of recent historical and forecast data concluded that Manitoba Hydro's EBITDA is approximately 50% higher than its EBIT interest coverage on an average annual basis. As a result, KPMG recommended the minimum be set at 1.80.

Manitoba Hydro accepts that the EBITDA is a superior measure of how much cushion the Corporation has on a cash flow basis before it is necessary to borrow to make interest payments, as well as allowing for better peer and credit rating comparisons. Manitoba Hydro recommends that an EBITDA interest coverage ratio with a minimum target of 1.80 be adopted to replace the current 1.20 EBIT interest coverage target.

5.3 Capital Coverage Ratio

KPMG found that the capital coverage ratio is a unique and important financial target to Manitoba Hydro and that the current minimum target of 1.20 is reasonable. KPMG concluded that the capital coverage ratio is a good measure of the ability of the Corporation to fund its sustaining capital from cash generated by current operations, without the need to access external sources of funding.

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Manitoba Hydro concurs with KPMG's conclusions on the capital coverage ratio target. Manitoba Hydro recommends that the current capital coverage ratio with a minimum target of 1.20 (excepting major new generation and transmission) be retained.

APPENDIX A

KPMG REPORT TO MANITOBA HYDRO
FINANCIAL TARGETS REVIEW
MAY 2015

APPENDIX B

A publically available stochastic interest rate generator developed by the American Academy of Actuaries and the Society of Actuaries was used to produce the interest rate forecasts used in this analysis. This model is based on historical U.S. interest rates (Treasury Bills), and produces a time series going forward for bonds of different durations (3-month, 1-year, 10-year etc.) and captures both longer-term multi-year trends and shorter-term intra-annual variation.

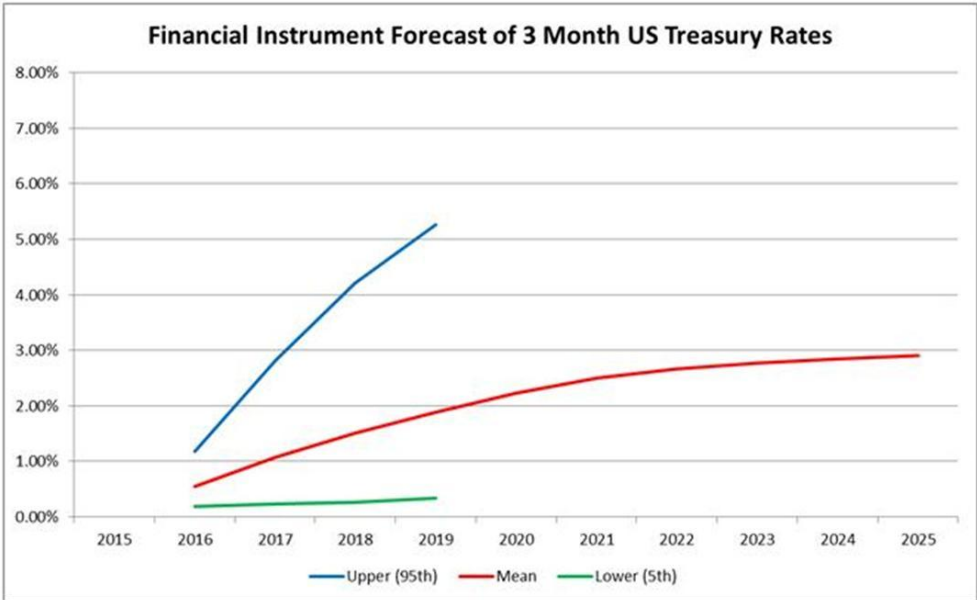
Manitoba Hydro engaged the Berkeley Research Group (BRG) to recommend an approach that made use of available data on current futures and options prices to establish an appropriate range of interest rates emerging from the stochastic interest rate generator. Scope of work for BRG included the following:

1. Review and verify that the American Academy of Actuaries stochastic Interest Rate Generator model (AIRG) provides a good flexible platform that can be calibrated for MH's use in the FINFOR model
2. Develop calibration criteria using available data on financial instruments – futures and options
3. Calibrate the AIRG model using the calibration criteria ensuring the dispersion in the model is consistent with the distribution of future interest rates
4. Develop a methodology for converting the US T-Bill rates to Canadian T-Bill rates

BRG collected data on Eurodollar futures and options which reflect what market participants anticipate the 3-month LIBOR rate will be in the future. The London Interbank Offered Rate (LIBOR) is a benchmark for short-term interest rates at which banks can borrow funds in the London interbank market. Eurodollar futures and options were selected for the calibration procedure because of their high volume/ high liquidity and because the Eurodollar futures are quoted quarterly and extend 10 years into the future and Eurodollar options are also quoted quarterly and extend 5 years into the future. These quotes 5-10 years out into the future are valuable for developing the range of interest rate over time as the uncertainty analysis incorporates a 20-year planning period.

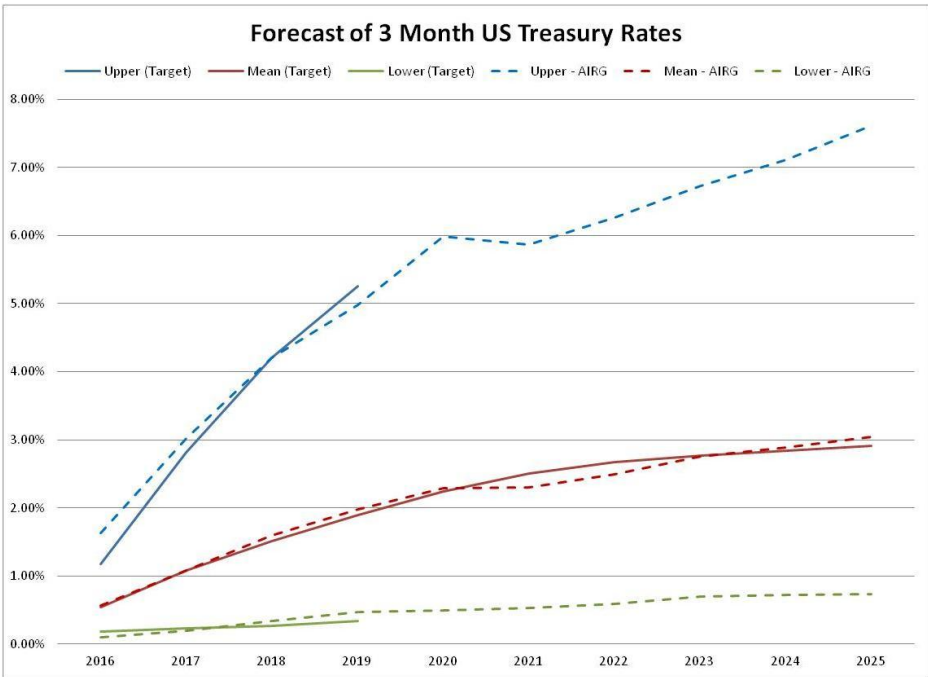
The Eurodollar futures serve as the mean and the implied volatility of the Eurodollar options help form the upper and lower bounds of the calibration criteria. Since the AIRG model forecasts Treasury Bills and not LIBOR, the most recent 3-year historical average spread (TED spread) between the 3-month T-Bill rate and the 3-month LIBOR rate was used for conversion. **Figure 5** summarizes the calibration criteria for the 3-month US T-Bill rate based on data collected on September 29, 2015.

Figure 5



BRG adjusted two key parameters in the AIRG model so that the forecast of 3-month US T-Bill rates closely matched the mean and spread derived from the futures market data. The parameters were adjusted by minimizing the mean square error (the square of the differences between the means and standard deviations of the forecast interest rates generated by the AIRG model and the futures market). Figure 6 summarizes the fit of the model results to the calibration criteria.

Figure 6



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With the forecast 3-month US T-Bill calibrated, the AIRG model automatically generates the rest of the term structure or yield curve (6-month, 1-year, 10-year etc.). The next step is to convert the USD yield curve to a CAD yield curve. BRG recommended the following conversion formula where “i” refers to interest rate, superscript “f” refers to “forward” and superscript “m” refers to “AIRG model”:

$$i_{CAD}^m = \frac{(1 + i_{CAD}^f)}{(1 + i_{USD}^f)}(1 + i_{USD}^m) - 1$$

The current USD and CAD yield curves are used to derive the USD and CAD forward rates. Interpolation and extrapolation of the yield curves are necessary to derive forward rates far enough into the future to satisfy the 20-year planning period. The ratio of the CAD forward rate to the USD forward rate is used to convert the AIRG model output.

With a forecast of both USD and CAD benchmark T-Bill rates, the Manitoba credit spreads are added to arrive at the rates used in the uncertainty analysis. The credit spreads incorporated in the fall 2015 P911-1 were applied to all 50 interest rate scenarios. The uncertainty analysis incorporates five different interest rates:

1. CAN T-Bill Rate
2. CAN BA Rate
3. US LIBOR Rate
4. US 10 year Rate
5. CAN 10 year+ Rate (average of 10 and 30 year rates)