

# Direct Examination of Patrick Bowman, Cam Osler & Gerry Forrest

On behalf of the Manitoba Industrial Power Users Group (MIPUG)  
January 24, 2018

# Introduction

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- ▶ Evidence comprises MIPUG Exhibits:
  - ▶ MIPUG-13 Pre-filed Testimony of Patrick Bowman
  - ▶ MIPUG-14 Pre-filed Testimony of Cam Osler and Gerry Forrest
  - ▶ MIPUG-15 Supplementary Background Papers
    - ▶ Background Paper A: Manitoba Hydro Debt Levels
    - ▶ Background Paper B: Needs For and Alternatives To (NFAT) Update
    - ▶ Background Paper C: Uncertainty Analysis and Risk Scenarios
  - ▶ Interrogatories from PUB (PUB-36), Manitoba Hydro (MH-47, MH-48), Business Council (BCM-6), Consumers Coalition (CC-25), Green Action Centre (GAC-13), GSS-GSM (GSS-GSM-11)
- ▶ Comment on new issues arising from process – no new analysis.
- ▶ Longstanding MIPUG Assignment – Review Hydro proposals and plans in light of regulatory principles appropriate for Crown hydro utility – long-term perspective
  - ▶ Fundamental perspective – interests of customers and Hydro should not be viewed at odds. Customers need financially sufficient Hydro, Hydro needs customer loads, competitive rates, reliable service.
    - ▶ Not like regulation of private sector utility, or a quasi-private utility with government investment

# Key issues

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- ▶ Fundamental change in perspective from Hydro.
  - ▶ Why does 10 versus 20 years matter so much to rate increases?
    - Under 10 year target, paying 25% of Keeyask, Bipole III, MMTP overrides every other issue (\$3.5B above costs within otherwise difficult 10 year period). Every other issue is subverted.
- ▶ What is the representative IFF today if keeping a consistent perspective of financial plan?
  - ▶ Keep 3.95%/year path?
    - Provided **PUB/MH I-34 Attachment 2** - Still has issues with regulatory accounting policies (depreciation, overheads) not conforming to PUB directed principles.
  - ▶ Recalculate based on “20 year” outlook for 75:25?
    - Exhibit **MH-93**. Now need 3.57% sustained increases. (75:25 met 13 years after Keeyask ISD, consistent with MH14)
    - Addresses regulatory accounting, but still does not include adjustments for “conservatism” (e.g., Daymark evidence).
- ▶ This issue is on top of normal GRA scope.

## Link to last GRA (MH14) – MIPUG evidence

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- ▶ Last GRA, Bowman recommended rate increases in the range of 2-3%, potentially at the higher end.
- ▶ IFF14 was described – given the context – as Hydro doing spectacularly well.
- ▶ Hydro was trying to adopt a financial “N minus 5” (analogy to transmission planning, where look to “N-1” to protect against one severe impact and not lose operation)

### MH14 - Absorb five big impacts

- In-service of Keeyask
- In-service of Bipole III
- Massive reinvestment in existing assets
- Invest in large DSM program and absorb lost revenues it causes
- Plus impacts of major accounting changes

### Being achieving with:

- No gov’t support of projects (pile on)
- Finance all ongoing operations over 10 years with operating cash flow (including effects of Keeyask and Bipole interest and O&M coming on line) plus all sustaining capital
- Keeping retained earnings levels near or above estimate of 5 year drought (more protection than ever had in last 20 years)

# C.F. Osler & G.D Forrest Direct Testimony

Pre-Filed Written Testimony MIPUG-14

# C.F. Osler & G.D Forrest Evidence (MIPUG-14) - Focus

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- ▶ Focus: Hydro's new financial goal – to recover a 25% equity level by 2026/27
  - ▶ New goal drives requested rate path plan increases of 7.9% per year
  - ▶ Material timing change from Hydro's long standing financial plans and goals
  - ▶ Presumes major change in PUB principles for Hydro rate change approvals
  
- ▶ Focus: to assist the PUB by providing relevant historical & regulatory context
  - ▶ 1988-1996 period of major development for Hydro rate regulation
  - ▶ MIPUG first appeared in 1988 proceeding for special PUB report to Minister
  - ▶ PUB's current mandate to approve Hydro rate changes started in 1989
  - ▶ Hydro's financial goals evolved during 1984-1995 era (emergence of 25% equity target)
  - ▶ 1989-96 PUB decisions set out key principles re: rates and target reserves for Hydro

# Hydro Mandate - Reserves and Rates

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- ▶ Crown utility with customer-funded reserves
  - ▶ Hydro's "equity" bears no relation to investor funds in privately-owned utility
  - ▶ Special challenges for setting financial targets and required rates
- ▶ Manitoba Hydro Act provisions (sections 39(1), 40(1) and 40(2))
  - ▶ Prices payable for power to cover full costs, including provision for "reserves"
  - ▶ "Reserves" to help fund operating expenses, protect against adverse events, help stabilize rates
  - ▶ Primary objective of Hydro's reserves – allow for stabilization of rates, provide for funding of sinking funds, and help fund new or replacement construction
- ▶ KPMG 2014 review of Hydro's mandate – unique financial objectives
  - ▶ Retained earnings = reserves [no expectation of shareholder equity funding or dividend]
  - ▶ Private-sector utility financial targets not applicable
  - ▶ Focus on recovering costs from consumers over time

# Hydro Financial Targets – Evolution from 1984 to 1995

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- ▶ 1984/85 – New Hydro reserve policy:
  - ▶ build \$180-\$200 million for 2-yr drought, no time target
  - ▶ 1986 rate increase (2.8%) solely to build reserves [Brennan, p12 in Board's 1988 report]
- ▶ Sept. 1989 – Hydro's new ST and LT financial targets include:
  - ▶ ST: minimum retained earnings target [MRET]: 1984 drought-target + self insurance – by 1995
    - ▶ Total min. reserve target \$210 M in 1990 and \$370 M by 1995 [D/E 93:07]
    - ▶ \$130 million reserve forecast fiscal 1990 [97:03 D/E]
  - ▶ LT: min. debt/equity[D/E] 85:15 while maintain rate stability – 10 yrs after achieve min. res.
    - ▶ IFF 89-3: 85:15 in 2009 [\$1.4 billion reserve: 8 yrs losses (Limestone, Conawapa), rate inc. 3-5%/yr]
    - ▶ IFF 89-3 version with MEFA repeal (March 1990) – achieve 85:15 by 1998 with same rate increases
- ▶ Sept. 1995 - Hydro's new financial targets includes 25% equity ratio:
  - ▶ Achieve and maintain new min D/E ratio target of 75:25 by 2005/06
  - ▶ March 31/96 projected reserve \$343 million, only 53% of updated drought/self ins. cost (\$650 M)

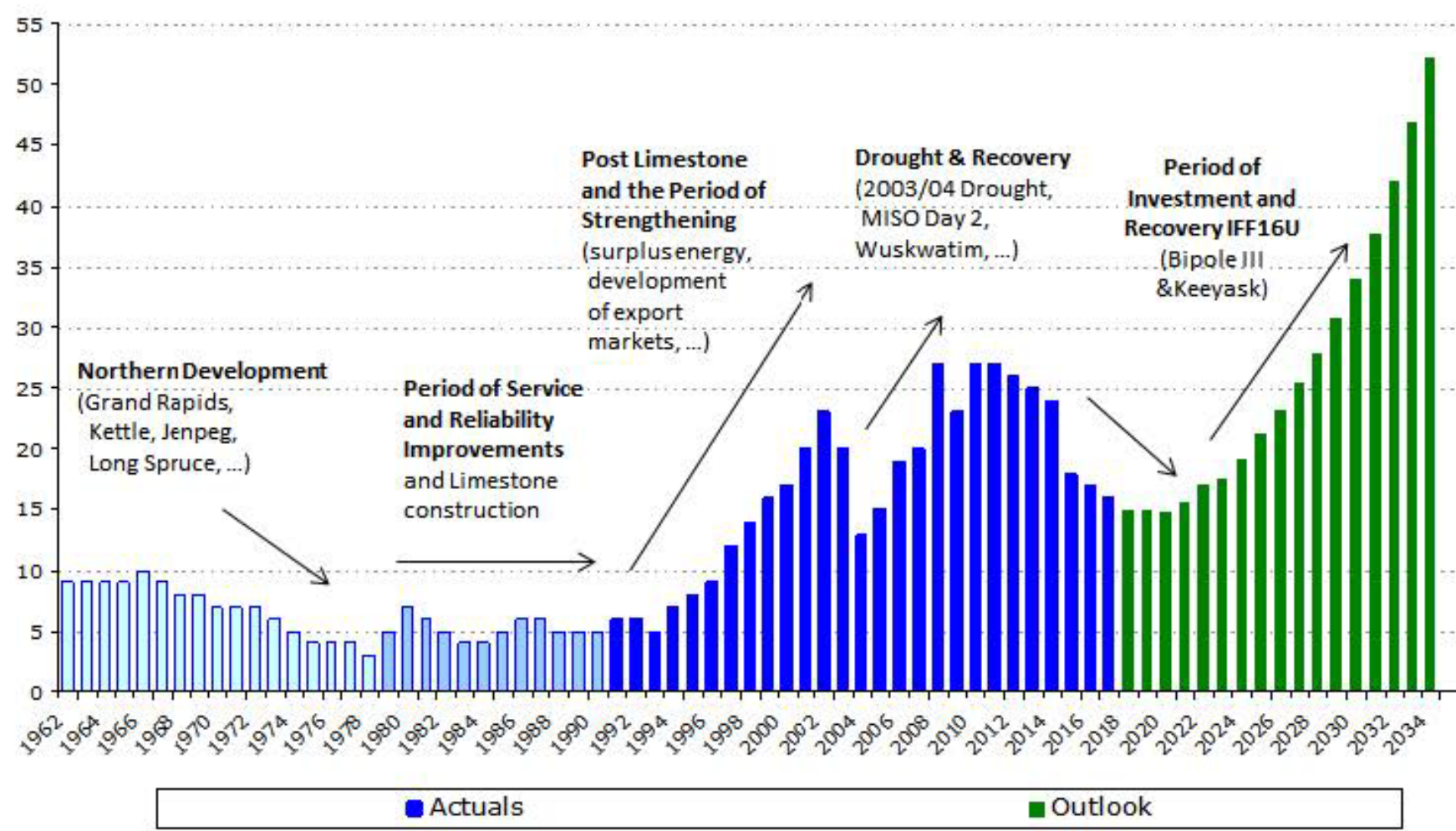


# Hydro Reserves and LTD – 1960s to 2010

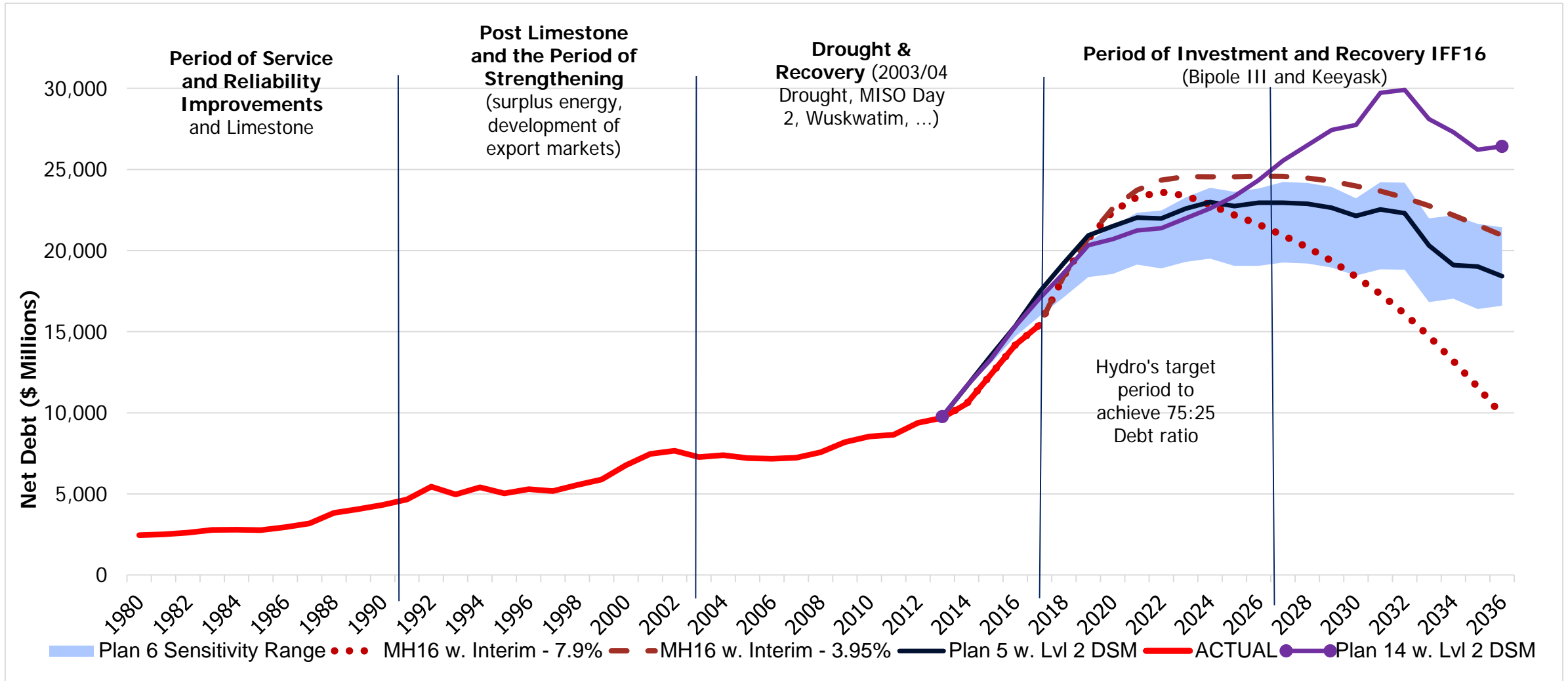
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- ▶ **1960s-1996:** Hydro's "equity" (reserves) ratio < 10% from late 1960s until after 1997 (see next slide) – fall to 5% range by mid 1970s to early 1990s
  - ▶ Era of major northern Hydro development (60s), and then Limestone (late 80s)
  - ▶ Includes periods with severe low water, & major Provincial charges escalation
  - ▶ LTD up 125% from 1980 to 1992 (\$2.4 to \$5.4 billion)
  - ▶ Hydro's reserves: \$42 to \$57 million (1970-1978), \$80 to about \$140 million 1980-90; in 1996 proceeding projected at \$343 million by March 31, 1996 (equity ratio 9%).
- ▶ **After 1996:** Sustained reserves growth after 1996 to 2002, then again 2005-2008
  - ▶ Achieve MRET (>\$370 M) in 1997, 85:15 D/E in 1999, & approach 25% equity ratio by 2002
    - ▶ Fiscal 2001 retained earnings \$1.1 billion with D/E 80:20 (versus IFF 95-2 forecast of \$516 million)
    - ▶ After drought & recovery, achieve 25% equity ratio in 2008, 2010-13 (5 years)
  - ▶ Export price improvements key shortly after mid-1990s
  - ▶ Minimal LTD repayment, minimal reliance on rate increases
    - ▶ No rate increase 1998-2004; cumulative rate increase 2005-2009 averages less than 3%/yr

# Manitoba Hydro's Equity Ratio from 1962-2034 Updated for IFF16 Update with Interim (MIPUG/MH I-2(h-i), pg. 9)



# Manitoba Hydro Net Debt Under NFAT Scenarios and Updated Scenarios at 3.95% and 7.9% (MIPUG-14, page 4-4)



# PUB Mandate – Relevance of 1989-1996 Period

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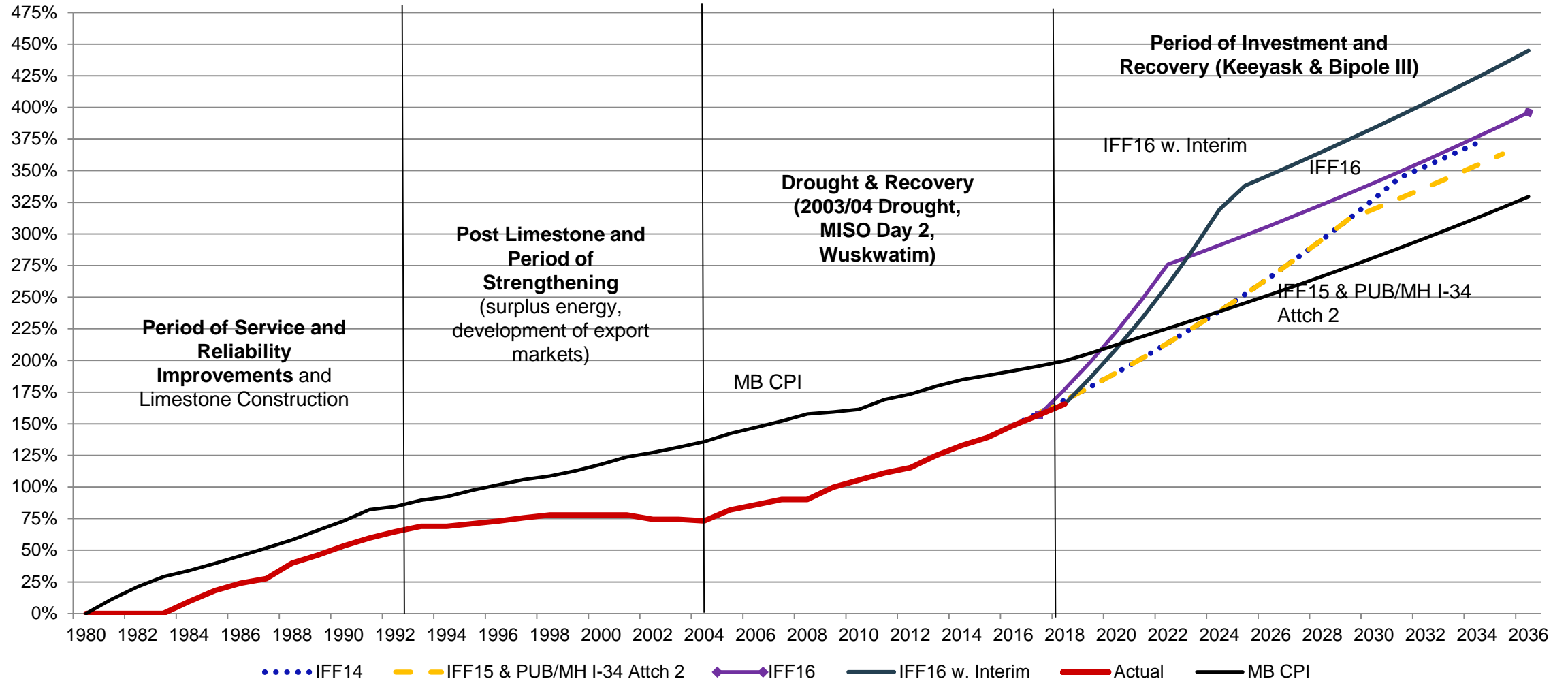
- ▶ **Early 1989 – Start of PUB’s current mandate re: Hydro rates**
  - ▶ *Crown Corporations Governance and Accountability Act - Section 25(4)*
  - ▶ PUB approval needed for any change to Hydro’s domestic rates
  - ▶ Consider “reserves” as well as expenses and other required payments
  - ▶ Consider “any compelling policy considerations” and “any other factors that the Board considers relevant to the matter”
- ▶ **Context for PUB rate decisions from 1989 to 1996**
  - ▶ Rate turmoil of prior decade
  - ▶ Increasing Manitoba Government water rental & other charges
  - ▶ Limestone coming into service, low water periods, low Hydro financial reserves
  - ▶ Evolving Hydro financial targets to increase financial reserves
  - ▶ High inflation in 70s and 80s/early 90s (by today’s standards)

# Hydro Rates - Late 1970s until 2003

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- ▶ **Pre 1989 – No PUB Rate Regulation - Rate Turmoil**
  - ▶ 1978-1979: 2 years of big increases (14.5-14.9%)
  - ▶ Rate freeze (April 79 to May 83) and ERSA
  - ▶ May 83 to April 88: 6-yr rate growth [9.5%, 7.9%, 5.0%, 2.8%, 9.8%, 4.5%]
- ▶ **1989-1996 - PUB rate approvals**
  - ▶ 1989: approved 5.0% (vs 6.0% applied for)
  - ▶ 1990: approved 4.0% (vs 4.5%)
  - ▶ 1991: approved 3.1% (vs 4.1%) – disallowed rate increases in 2<sup>nd</sup> and 3<sup>rd</sup> years
  - ▶ 1992: approved 2.65% (vs 3.5%)
  - ▶ 1994: approved 1.2%/yr for two years (vs 1.5% per year)
  - ▶ 1996: approved 1.5% for 1996/97 and 1.3% for 1997/98 (vs 2.0% for each year)
- ▶ **After 1996-97 until after 2004 - Rate Change Hiatus**
  - ▶ No rate increases 1998-2004 – absence of PUB review process
  - ▶ Decrease of 1.92% November 2001 as a result of uniform rates legislative change; minor rate decrease implemented on April 2003.

# Rate Increases 1980 – 2036 to CPI (MH-MIPUG (Bowman)-3)



# Summary Rate Principles: PUB Decisions 1989-1996

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- ▶ Balance interests of current and future domestic ratepayers:
  - ▶ Current day rates/ ratepayers - target for rate changes at or under inflation
    - ▶ This priority was retained by PUB even when MRET (including drought) not yet met
  - ▶ Future rates and ratepayers – target longer term rate stability & predictability
    - ▶ Smoothing of rates over time - intergenerational fairness, stable & predictable changes
    - ▶ Equity / retained earnings are customer reserves to address longer-term rate stability
      - High priority to specific MRET and reserves for worst drought and self-insurance
      - Equity ratio targets support added reserve cushion when feasible without rate increases > inflation
    - ▶ Timing to achieve short and long-term financial targets adjusted as needed
      - patient & calm approach rather than sharp rate change response to new events or targets
      - Message to financial markets and customers of rate stability and sustainable Hydro operations
      - Regular update, review and readiness to adjust if and when needed to address a clear, current and specific new challenge to Hydro's ability to fund its cash obligations



# Observed PUB Concerns re: Decisions 1989-1996

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- ▶ Consistent PUB concern about “moral hazards” to domestic customer rates
  - ▶ Do not want higher reserves to stimulate even higher Provincial charges
  - ▶ Do not want higher rates to reduce Hydro incentive for efficient operation
- ▶ PUB saw consistent increase in Provincial charges from mid-80s to mid-90s
  - ▶ Initial charges: low water rental rates, debt service fee at 1/8 of 1%, no capital tax
  - ▶ Saw continued escalation of water rental rates until freeze in Sept. 1989
  - ▶ Also saw jumps in debt service fee, and 1994 rescinding of exemption from capital tax
  - ▶ Total water rental, guarantee fee and capital tax total \$82.8 million in 1994/95
- ▶ By fiscal 2014, ratepayers funding \$341 million/year for capital, debt & water
  - ▶ Capital taxes at 0.5% of paid-up capital (\$117 million), Debt Guarantee at 1% of outstanding debt (\$99 million), \$125 million balance for water rentals charges



# Relevance of 1989-1996 PUB Rate Principles Today

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- ▶ Earlier PUB rate principles retained in NFAT review and recent GRA decisions
  - ▶ Stable, predictable rate changes over long-term – accept 20+ years to regain 25% equity ratio
- ▶ Summary review: Hydro’s new financial goal to recover 25% ratio by 2026/27
  - ▶ Proposal presumes PUB deviates from long-established rate review & approval principles
    - ▶ Asserts hard date needed within 10 yrs to recover 25% equity ratio – ignores prior 20+ years timing
    - ▶ Asserts rate path needed at 4 times expected inflation for six years – ignores impacts, stability, predictability
    - ▶ Ignores moral hazards for ratepayers when the \$3.5 billion added “equity” is collected
  - ▶ Proposal asserts NFAT+ submissions, reviews and recommended plans not credible
    - ▶ Ignores 3.95% rate path ability to pass basic MRET tests for 5 or 7 year drought impacts
    - ▶ Fails to establish any credible new threat to justify need for this wholesale change
- ▶ Recommendations for PUB review of this Hydro application:
  - ▶ Retain PUB’s long established rate principles - avoid hard dates to achieve 15 to 25% equity ratios
  - ▶ Re-establish consideration of relevant MRET as key reserve requirement (PUB-MIPUG-14)
  - ▶ Recommend 10-yr deferral capital tax & debt guarantee fees (Bipole III/Keeyask) (PUB-MIPUG-16 – based on PUB/MH 1-21, reduce Hydro costs by \$130 M in 2018 and \$198 M in 2022 [about 10.6% of revenues with 3.95% rate path])

# Patrick Bowman Direct Testimony – Revenue Requirement

Pre-Filed Written Testimony MIPUG-13

# Outline

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- ▶ Pre-filed Testimony organized into sections (MIPUG-13):
  - ▶ 2.0 Summary of Application
  - ▶ 3.0 Principles of Rate Regulation
  - ▶ 4.0 Rate Increase Plan Doubling from 3.95%/year to 7.9%/year
  - ▶ 5.0 The Performance of the PUB/MH-I-34 Att. 1 Average Increase Scenario
  - ▶ 6.0 Issues with Inputs and Assumptions in the 3.95% Scenario
  - ▶ 7.0 Cost of Service and Rate Design
  
- ▶ Supplementary Background Papers line up with multiple sections of the pre-filed testimony (MIPUG-15)

# Summary of Recommendations (updated)

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- ▶ Finalize previous 2 interim rate increases (2016/17 and 2017/18) at the 3.36% level.
- ▶ Implement an average rate increase for 2018/19 consistent with 20 year outlook, in range of 3.36% or 3.57% (at August 1, 2018 – one year after previous increase)
- ▶ Model IFF scenarios with consistent interest rate forecasts (e.g., WATM principles at 12 year vs 20).
- ▶ Fully pursue O&A expense reductions
- ▶ Confirm \$20 million capitalization of overheads indefinitely, amortized over 30 years
- ▶ Confirm use of ASL depreciation with no assumed reversion to ELG. Do not explicitly amortize difference – manage through natural attrition.
- ▶ Approach DSM consistent with Integrated Resource Planning – much lower spend than assumed in IFF. Only spend deferred \$48.8 million if justified as part of IRP program.
- ▶ Set rate increase for industrials 1-2% lower than average, to address Revenue:Cost Comparison (RCC) Ratio.
- ▶ Calculate RCC based on measured costs (net of export revenues)
- ▶ Review and pursue optional Time of Use rate for GSL (customers opt in if they see benefits).

# Other MIPUG witness - Colaiacovo

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- ▶ MIPUG Testimony over this hearing and past hearings consistent with Mr. Colaiacovo on many points:
  - ▶ Equity for Hydro is not the same as for a private Corporation
  - ▶ Reserves is the only concept embedded in the Manitoba Hydro Act – reported “equity” is only a mechanism for this purpose
  - ▶ Reserves are appropriate for some types of risks – notably drought. Not appropriate for risks of unexpected but sustained ongoing changes in items like interest rates or export markets
  - ▶ Growing reserves, positive net income, sustaining 75:25 on existing assets is evidence customers have not been underpaying. Bipole III account is over and above this contribution.
  - ▶ PUB could help define refined rate setting mechanisms to increase clarity and confidence
    - ▶ new uncertainty analysis tools help move in this direction. But specific proposals not yet developed and need work.
  - ▶ Issue of self-sufficiency overstated – ratepayers are always responsible for covering all of Hydro’s reasonable costs (per Hydro Act) – no concept that they won’t be covered.
    - ▶ Similar to what Hydro witness Mr. Schulz called “capital ‘H’ hypothetical” – page C-3 of Bowman testimony

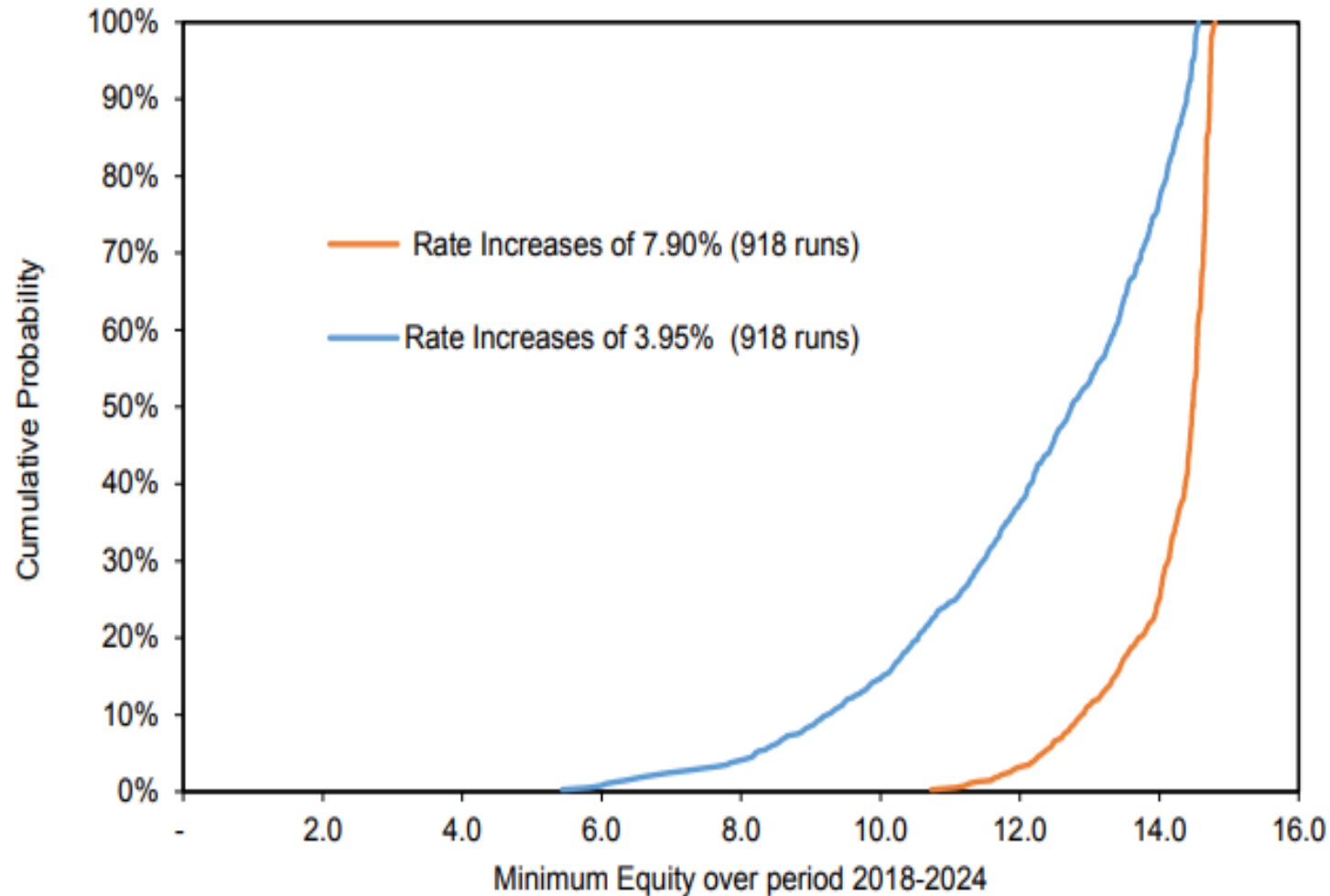
## 2.0 Summary of Application - MH16 compared to MH14 (last GRA), MH15 (interim rate application) - Net Income Comparison 2017-27 (sum of 11 years)

2016/17 - 2026/27 (\$ Millions)	MH16 Update with Interim	MH16	MH15	MH14
Domestic Revenues (at MH15 rates, includes BPIII)	20,865	21,115	22,265	22,066
Extraprovincial	6,833	6,961	8,402	8,474
Other	359	358	344	171
<b>Total Revenues</b>	<b>28,057</b>	<b>28,435</b>	<b>31,011</b>	<b>30,711</b>
O&M	5,899	5,899	6,693	6,693
Finance Expense	10,333	9,903	11,070	12,007
Finance Income	(246)	(232)	(233)	-
Depreciation & Amortization	6,531	6,536	6,590	7,019
Water Rentals & Assessments	1,372	1,361	1,369	1,364
Fuel & Power Purchased	1,543	1,564	2,292	2,662
Capital & Other Taxes	1,750	1,741	1,671	1,637
Other Expenses	1,302	1,301	942	90
Corporate Allocation	89	89	90	29
<b>Total Expenses</b>	<b>28,573</b>	<b>28,161</b>	<b>30,484</b>	<b>31,501</b>
Net Income before Net Movement in Reg. Deferral	(515)	274	525	(791)
Net Movement in Reg Deferral and Gain	723	684	79	-
<b>Net Income (at MH15 Rate Increases)</b>	<b>208</b>	<b>957</b>	<b>604</b>	<b>(791)</b>
2027 Equity Ratio	12%	14%	14%	10%
Additional Domestic Revenue (over MH15 Increases)	3,157	2,530	-	-
Financing and Capital Tax Savings	528	544	-	-
<b>Revised Net Income (with 7.9% Rate Plan)</b>	<b>3,893</b>	<b>4,031</b>	<b>604</b>	<b>(791)</b>
<b>Net Income Attributable to Man. Hydro</b>	<b>3,868</b>	<b>4,011</b>	<b>607</b>	<b>(771)</b>
Non-Controlling Interest	25	21	(2)	(20)
Revised 2027 Equity Ratio	25%	25%	14%	10%

- ▶ Summary of Hydro's forecasts, progression MH14 to current.
- ▶ \$208 million Net Income in MH16 Update with Interim - \$1B better than MH14.
- ▶ 12% equity versus 10%
- ▶ MH16 Update with Interim - still does not address conservatism, regulatory accounting issues.
- ▶ Shows only base case forecast (lower than P50)

Per Bowman page 2-3; Data from Coalition/MH-60a-g; Coalition-MFR-2; Tab 3, pg. 8

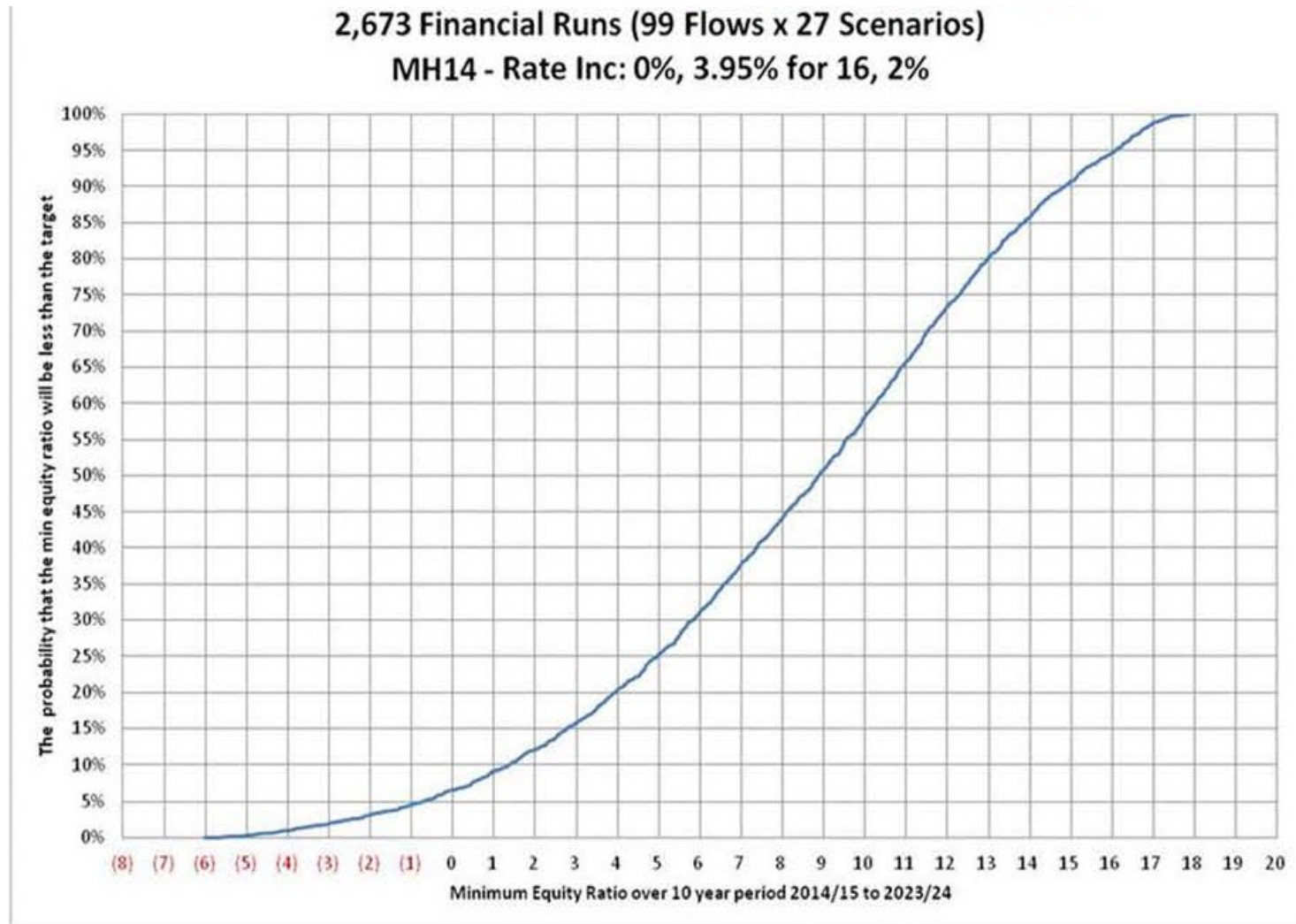
# Uncertainty perspective for MH16 (from Background Paper C)



- ▶ KPMG material (App. 4.5, pg. 75). Shows minimum equity from MH16 Uncertainty runs (was not updated to MH16 Update with Interim)
- ▶ Deals with multiple overlapping risks – drought with adverse export prices and adverse moves on interest rates.
- ▶ Period through 2024, with 3.95% increases (blue line), lowest equity at P50 is 12%. At P01, equity could drop to between 5% and 6% if no rate response.
- ▶ P10 is about 9-10% equity.
  - ▶ Note that 2017/18 equity is 14-15% so no scenario can have a “minimum” higher than that. (reason for vertical line)



# Uncertainty perspective for MH14 (from Background Paper C)



- ▶ Also KPMG material (App. 4.1, pg. 116). Shows minimum equity from MH14 Uncertainty runs.
- ▶ Same overlapping risks – drought, exports, interest rates.
- ▶ Shows through 2024, lowest equity at P50 level is 9% (MH16 at 12%).
- ▶ At P01, equity could drop to negative 6% if no rate response. (MH16 at positive 5-6% equity)
- ▶ P10 is 1% equity (MH16 at 9-10% equity)
- ▶ 30% of scenarios led to equity dropping below 6% - under MH16, that is now the worst outcome modelled (P01).
- ▶ In short - MH16 risk profile is much improved from MH14.



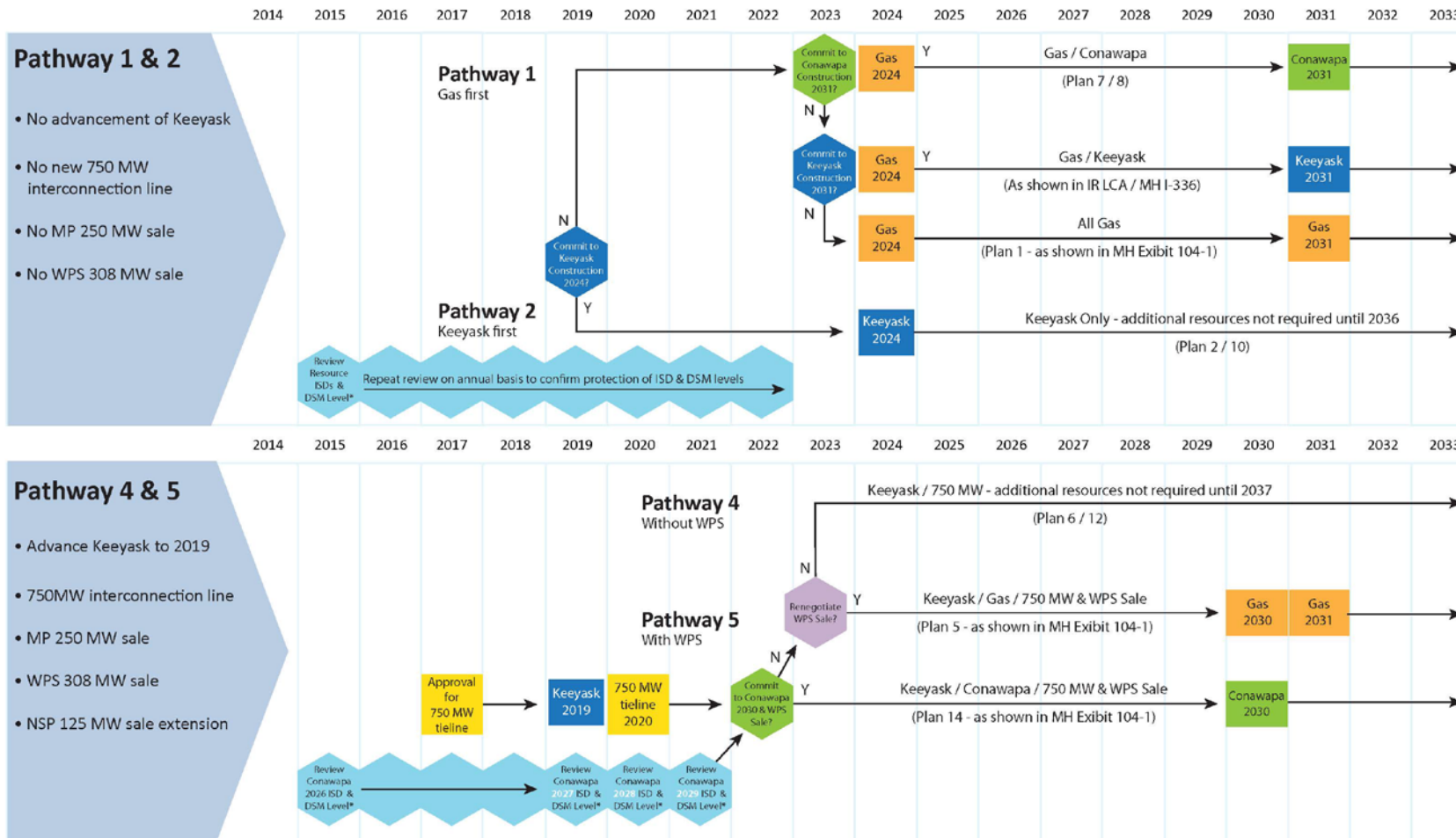
## Section 3.0 Principles of Rate Regulation

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- ▶ Reviews many concepts already covered – role of Crown, role of customer equity/reserves in Manitoba Hydro, need for patient capital, the “used and useful” test. Also how to undertake and finance major new capital projects.
- ▶ Two items covered here – drought risk, and claims of failure of the old plan.
- ▶ On drought risk, every time export prices fall, it should be understood that any reduced financial performance (at the mean) typically comes with significantly reduced financial risk of drought. For example, 5 year drought impacts from the respective IFFs are as follows (including compounding interest effects):
  - ▶ IFF07 - \$2.8 billion
  - ▶ IFF09 - \$2.4 billion
  - ▶ IFF11-2 - \$1.6 billion
  - ▶ IFF14 - \$1.7 billion
  - ▶ IFF15 - \$1.9 billion
  - ▶ IFF16 - \$1.2 billion

# Section 3.0 – Principles - Claims that old plan has “failed” (per MH-64, pg. 4)

Exhibit MH-192 from NFAT.



\*ISD protection contingent on additional export contracts, export prices, load growth, DSM, etc.

▶ Covers decision framework through at least 2024. Too early to conclude anything has failed.

▶ Many similar hasty conclusions proven wrong in utility/regulatory history. E.g., Ontario Conawapa, EIIR.

▶ Also note – key NFAT decision was not about Keeyask – it was about 750MW MMTP/GNTL

▶ Transmission has undisputed ongoing value

## Section 4.0 - Rate Plan Doubling - 3.95%/year to 7.9%/year

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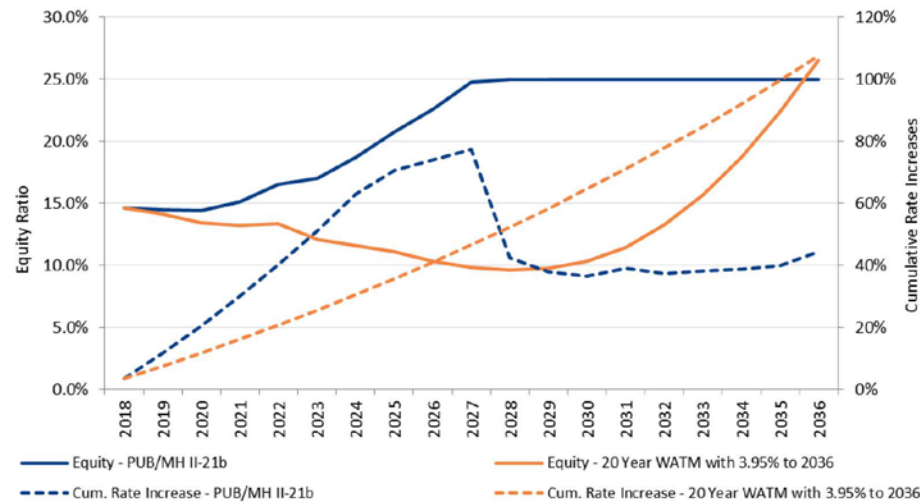
- ▶ Evidence reviews perspectives on (i) self-supporting definitions, (ii) the customer interests, and (iii) impacts on the province.
- ▶ In short, 7.9%/year increases are vastly beyond any analytical justification.
  - ▶ The only way to justify the 7.9% is to focus solely on generating extra \$3.5 billion in revenues above costs within 10 years (2027), to fully fund 25% equity component of Keeyask, Bipole III and MMTP/GNTL (25% of \$14B).
- ▶ This is not needed to achieve normal definitions of self supporting, e.g.:
  - ▶ **KPMG definition:** “Hydro would be deemed to be no longer self-supporting once it reaches a position of near zero retained earnings and rates have increased in real terms such that Manitoba can no longer be considered a cost-competitive jurisdictions with respect to electricity rates” (emphasis in original) [Appendix 4.1, pg. 7]
    - ▶ No prospect of either of these outcomes occurring, much less both at the same time.
  - ▶ **Hydro definition:** “Manitoba Hydro's near term objective is to be able to meet all of its financial obligations including debt service and capital reinvestment out of the revenues of the Corporation. This is the definition of “self-supporting” that the Corporation endorses.” [MIPUG/MH-II-17d – contrasting to S&P definition]
    - ▶ Hydro exceeds Capital Coverage (cash) ratio of 1.0 in all years – exceeds target of 1.2 in all or almost all years, depending on scenario.

# Section 4.0 - Rate Plan Doubling - 3.95%/year to 7.9%/year

▶ On customer interests, Hydro uses scenario to calculate NPV of rates:

## Why Are We Doing This?

- Ensuring service, reliability, preparedness
- Managing risk
- Rate stability with potential for lower rates and bills in the long run



- ▶ Blue scenario (used by Hydro for analysis) is inconsistent with regulatory principles, including rate stability.
- ▶ Orange scenario pessimistic about equity ratio:
  - ▶ Fails to address regulatory accounting issues
  - ▶ Includes AOCI (reduces equity ratio by approx. 2 percentage points)
  - ▶ Includes conservative assumptions
- ▶ Also, re: social discount rate, Hydro’s blue scenario is more risky for customers (not less) – the NPV of “investment” (higher early rates) may never see any “return” (later rate decreases). [rate reductions not favoured by Hydro. Also note: “moral hazard” concept]

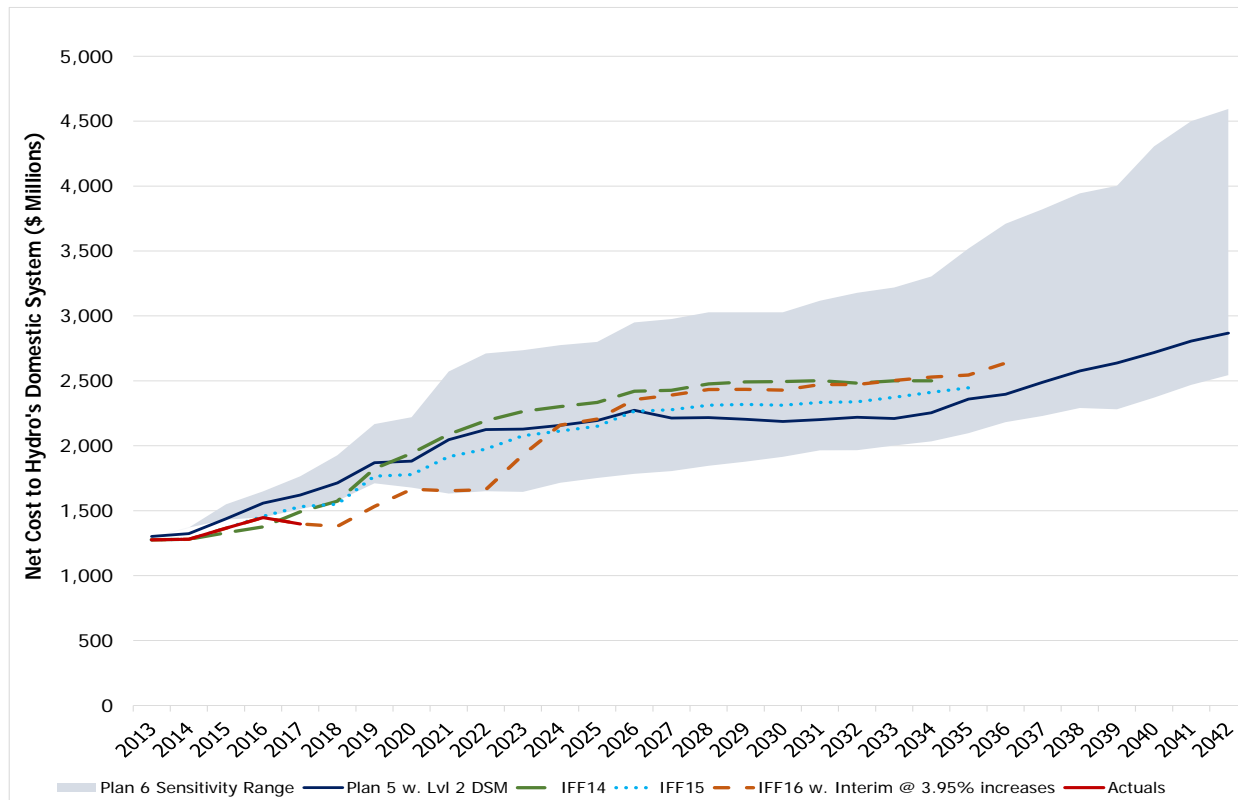
## Section 5.0 – the PUB/MH-I-34 Att. 1 scenarios

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- ▶ In assessing the scenarios with 3.95%/year rate increases, this uses various Hydro IFF runs.
- ▶ These runs have not yet adjusted for appropriate updates that are addressed in Section 6.0:
  - ▶ Ensure cost forecasts reflect appropriate levels:
    - ▶ O&M appears to include the savings being targeted, but difficult to confirm reasonableness.
    - ▶ DSM activities benchmarked much too high, based on Integrated Resource Planning considerations. Affects both costs and loads.
  - ▶ Also ensure appropriate Accounting and Regulatory policies being applied:
    - ▶ Depreciation and Administrative Overhead calculations not consistent with PUB decisions
- ▶ Issues are further discussed in section 6.0 of Pre-Filed Testimony
- ▶ With these considerations included in MH16 Update with Interim, the orange line in the following slides would be improved.

# Section 5.0 – the 3.95%/year scenarios as presented – how do they look (screening)? – Net Costs (Background Paper B – page B-6)

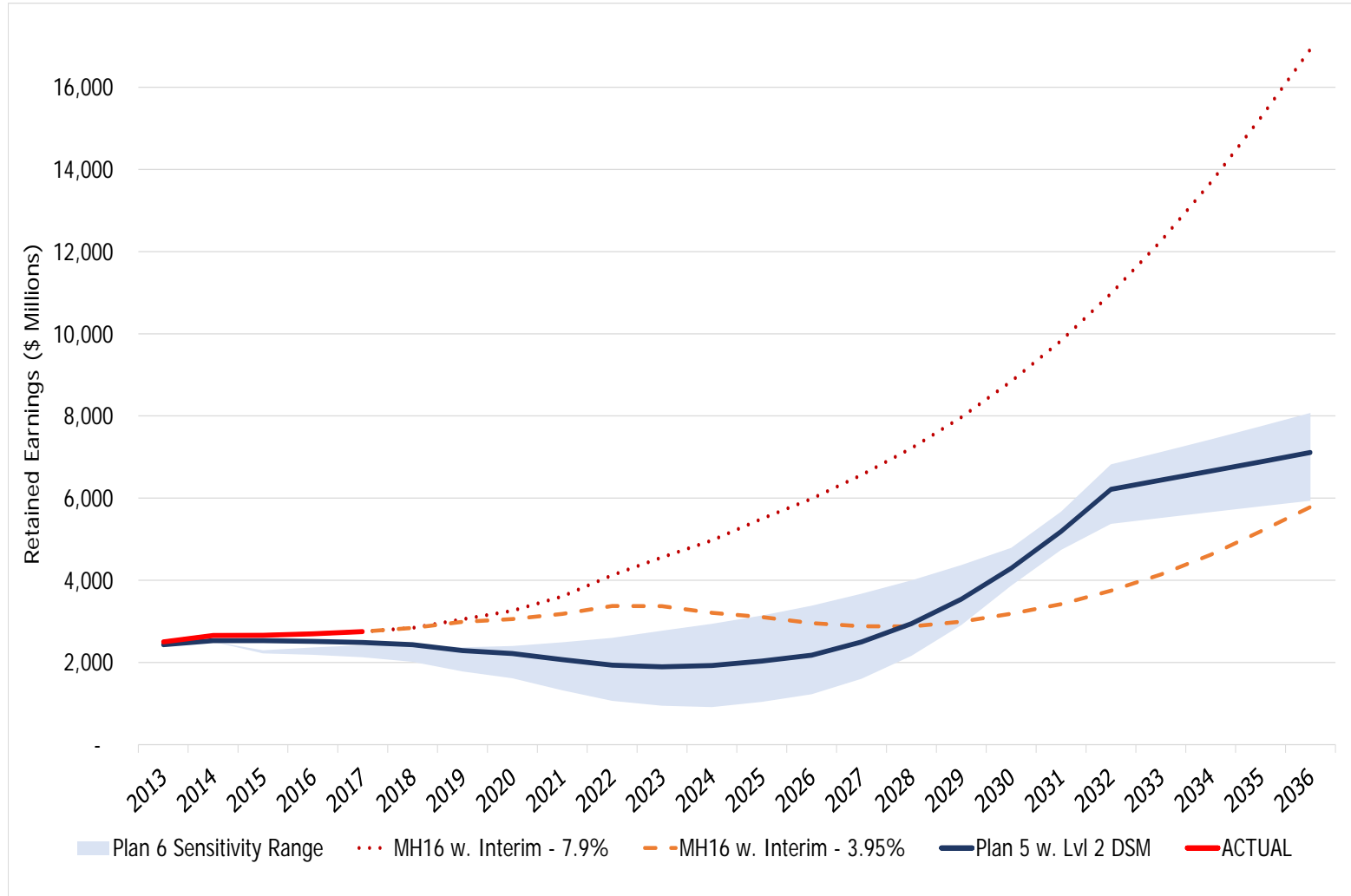
- ▶ In assessing the 3.95%/year scenarios today, the adverse effects of higher capital costs and lower export prices must be recognized, along with positive variances.



- ▶ Graph compares NFAT (dark blue lines, and shading for high/low scenarios) versus newer scenarios (in \$millions):
  - ▶ MH14 – green
  - ▶ MH15 – light blue
  - ▶ MH16 Update with 3.95%/year increases – orange
- ▶ Values include all IFF costs as presented, but no contributions to reserves.
- ▶ Values still within NFAT high/low range
- ▶ Emphasizes why ratepayers must first absorb the project costs, before loading on extra equity contributions (chart is before reserves)

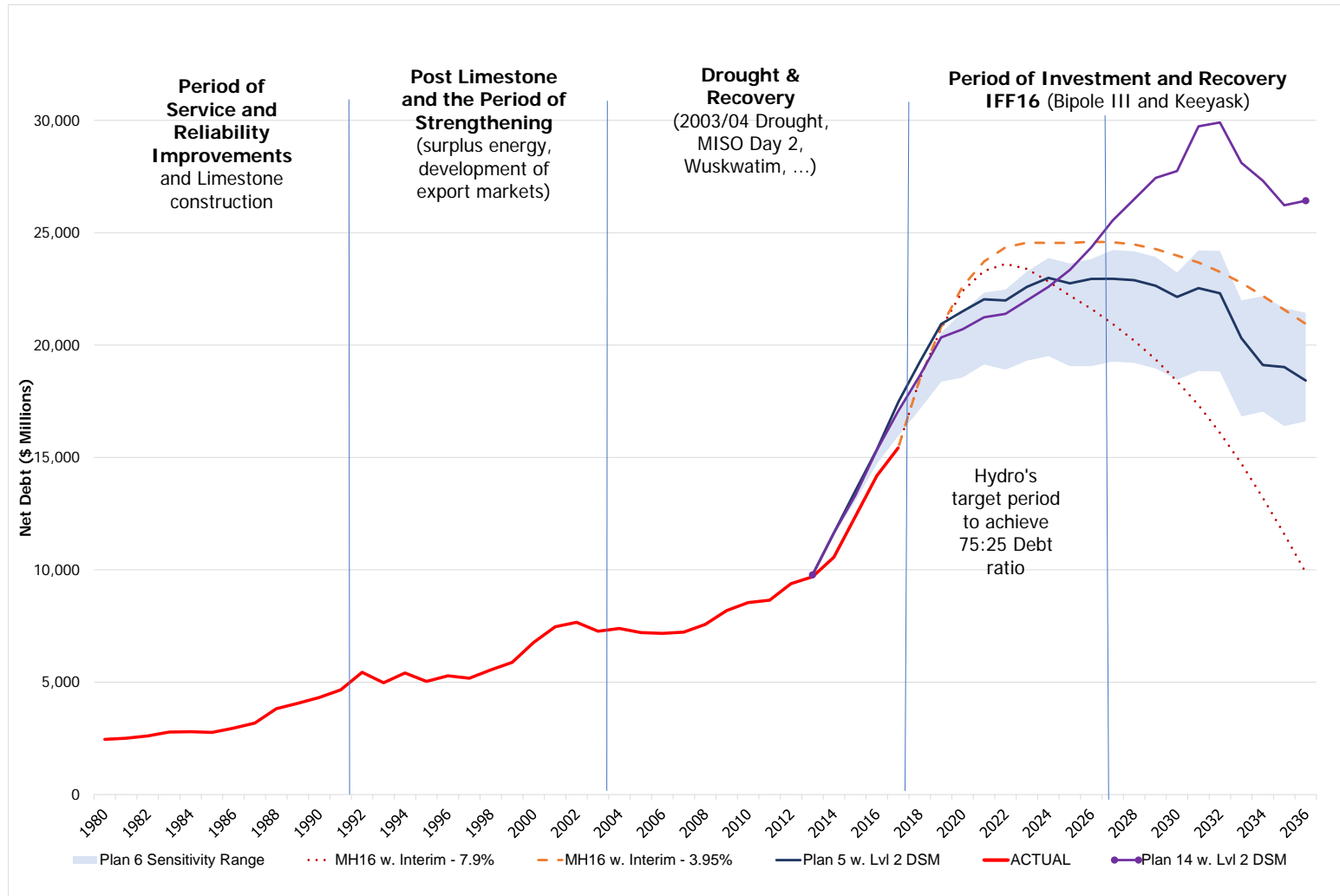


# Section 5.0 – the 3.95%/year scenarios as presented – how do they look (screening)? – Retained Earnings (MIPUG-13, pg. 5-6)



- ▶ Includes:
  - ▶ NFAT Plan 5/6 dark blue lines & blue shading
  - ▶ MH16 Update with Interim 3.95%/year increases - orange
  - ▶ MH16 Update with Interim 7.9%/year – red
- ▶ Retained earnings now significantly higher at minimum than NFAT scenario
- ▶ Delay of Keeyask evident in orange line versus NFAT (blue)
- ▶ Note: Hydro indicates red line may not be future path if 23% rate decreases are pursued in year 11.

# Section 5.0 – the 3.95%/year scenarios as presented – how do they look (screening)? – Maximum Debt (MIPUG-13, pg. 5-8)



- ▶ Note start of graph in 1980
- ▶ Includes:
  - ▶ NFAT Plan 5/6 dark blue lines plus shading
  - ▶ MH16 Update with 3.95%/year increases - orange
  - ▶ MH16 Update with Interim 7.9%/year – red
  - ▶ NFAT Plan 14 (Preferred Plan (purple))
- ▶ Net debt peaks higher than NFAT Plan 5/6, as expected
- ▶ Delay of Keeyask evident in orange line versus NFAT (blue)
- ▶ Note: Hydro indicates red line may not be future path if 23% rate decreases are pursued in year 11.



## Section 5.0 – What about Weighted Average Term to Maturity (WATM)?

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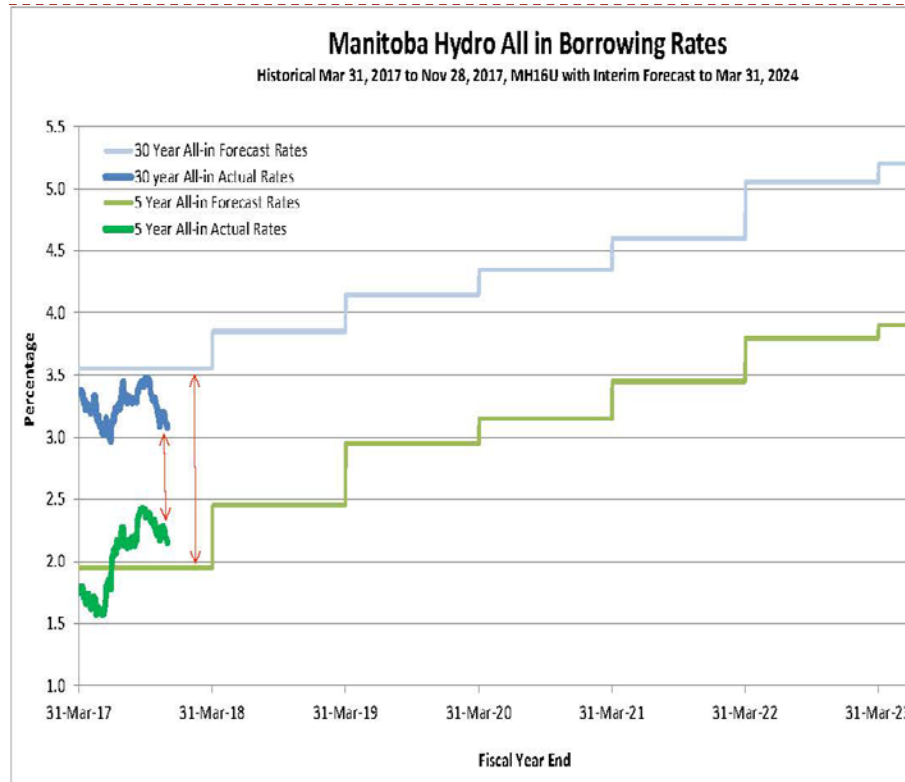
- ▶ The ‘weighted average term to maturity’ issue is overstated.
  - ▶ Effect over 20 year forecast moves annual rate change by only 0.15%/year (per MH-93).
  - ▶ Per MH Rebuttal (Ex. MH-52) the updated impact is half this amount.
- ▶ This is not a reason to distinguish between a 7.9% versus 3.95% rate path
- ▶ At the core, the issue is whether Hydro should include in the IFF forecasts projections achieving 0.25% lower average interest rates from adopting the 7.9%/year rate path.
  - ▶ For the IFF, this issue is not when the debt comes due, its the interest rate used to calculate forecast finance expense.
- ▶ Hydro has done a good job with treasury activities to date, and has well developed policies, endorsed by the regulatory process. This includes the principle that there should be a degree of debt turnover routinely.
  - ▶ In the next few years, the utility moves into a stronger cash position under any rate scenario, and has to actively plan to achieve this turnover.

## Section 5.0 - WATM Recommendation focuses on IFF

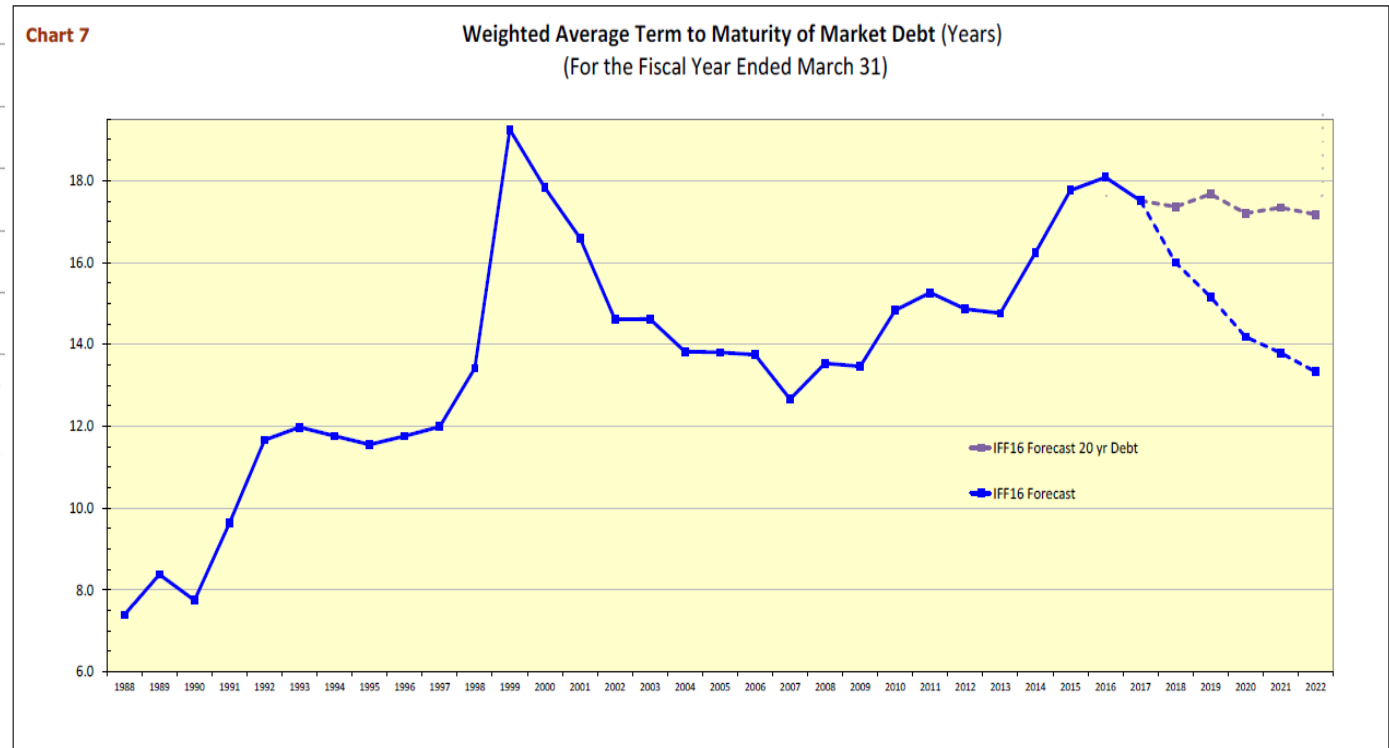
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- ▶ The conclusion in the Pre-Filed Testimony:
  - ▶ A WATM shorter than 20 years is needed in the next few years regardless as to the rate path pursued, due to ending of major capital spending and to meet existing policies re: interest rate exposure
  - ▶ The interest rate forecast should be consistently applied in the IFF rather than trying to convey a high likelihood of speculative savings (MH Rebuttal Evidence, pg. 14, notes the 12/20 year gap has already materially closed since GRA filing – long-term debt rates lower than forecast, short-term higher).
- ▶ For clarity – this is not a treasury recommendation regarding WATM – this is a recommendation on long-term interest rate forecasting for rate setting.
  - ▶ In practice Hydro's treasury will react to conditions in real time – has noted already used 18 year WATM in practice this year.

# Updated WATM info [MH-68 page 64; MIPUG/MH-I-13a-b]



▶ Absent terming, failure to return to Hydro's typical average blended WATM (1988-2022)



▶ Reflects flattening yield curve – less benefit from pursuing shorter term debt (green)

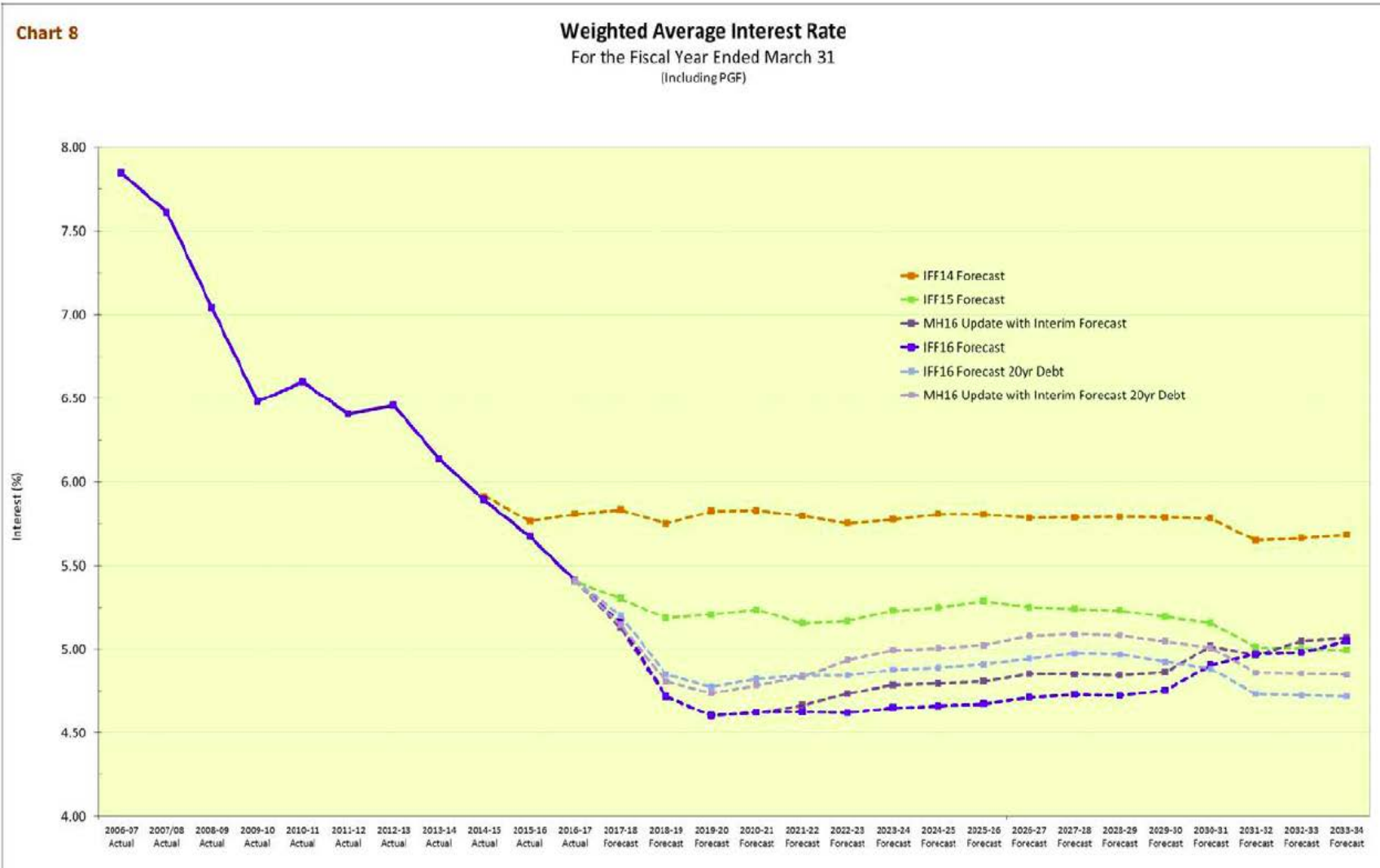
# Section 5.0 WATM – 14 years at 3.95% scenario MIPUG/MH-I-20f

**Table 5-3: Values for Borrowing Requirements and Surplus Cash 2022/23 to 2034/35 under 3.95%/year rate increase (\$ Millions CAD)<sup>131</sup>**

Fiscal Year	Refinance Underlying Debt with Ongoing Swap	Refinance LTD Maturities	New Borrowings	Potential 2018-2020 Terming	Surplus Cash	Net New Borrowings
2022	-	653	547	159	-	1,359
2023	-	296	504	1,752	-	2,552
2024	-	300	-	1,854	150	2,004
2025	-	412	-	1,439	247	1,603
2026	215	750	-	159	179	945
2027	-	1,178	-	111	265	1,024
2028	-	150	-	1,078	340	888
2029	-	60	-	1,218	430	848
2030	131	10	-	853	513	482
2031	-	796	-	-	527	268
2032	-	10	-	-	628	(618)
2033	-	30	-	-	707	(677)
2034	-	-	-	-	822	(822)
2035	-	10	-	-	866	(856)
	<b>346</b>	<b>4,655</b>	<b>1,051</b>	<b>8,624</b>	<b>5,674</b>	<b>9,001</b>

- ▶ From 2022 to 2035, under 3.95%/year increases, \$9B in new borrowings needed.
- ▶ If no terming (\$8.6B), there is effectively no net new borrowings needed over this period (other than for timing).
- ▶ Worst year required \$2.5B borrowing, with portfolio over \$20B – only 10-11%. Well within policy guidelines.

# Effect of WATM issue – Hydro asserts more certainty than is appropriate (MH-82, 2006-2034)



- ▶ From MH14 to MH15 to MH16, average corporate-wide interest rates dropped 0.5% each subsequent forecast.
- ▶ Long-term rates as of MH-68 (previous page) were 0.5% below MH16 forecast.
- ▶ WATM gap narrowed since the forecast in this exhibit.

## Section 6.0 – Reasons the 3.95%/year scenarios require revision

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- ▶ Regulatory Deferral Accounts - Capitalization of Overheads
  - ▶ Over a number of years, Hydro shifted almost \$120 million/year from what was considered “capital” expenses (capitalized) to no longer be capitalized (instead expensed).
  - ▶ The PUB directed that the last \$20 million of this not be expensed, but capitalized (PUB Order 73/15, pg. 35 – 36).
  - ▶ Scenarios in the 2015 Interim Rates hearing focused on permanently capitalizing \$20M/year, amortized over 30 years (Attachment 46, Financial Information MFR 1 - Alternate Scenario, in 2016/17 Interim Rate Proceeding).
  - ▶ In the current GRA, Hydro only capitalizes the \$20M/year expenses to 2022/23, amortized over 20 years (despite the average length of asset lives >30 years)
  - ▶ These costs are “used and useful” in relation to the assets being built – should be treated as capital permanently. Defer each year indefinitely, amortize over 30 years.
  - ▶ Hydro claims such approach “results in intergenerational inequity and poses a risk to rate stability for future ratepayers” (PUB/MH I-1b). This is not correct. The \$20 million is as much a part of Keeyask or Bipole as any concrete or turbine, etc. and should be amortized as such.



## Section 6.0 – Reasons the 3.95%/year scenarios require revision (2)

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### ▶ Regulatory Deferral Accounts – Depreciation

- ▶ Board ordered Hydro to continue to determine Depreciation Expense on its existing ASL procedure until such time as the Board can compare a depreciation study which Hydro considers to be IFRS-compliant ASL with ELG. Until such time, Hydro is not to use ELG for rate-setting purposes (PUB Order 73/15 pg. 45 – 46).
- ▶ Hydro has not done the study, and indicated no current plans to do so. In MH16, Hydro has:
  - ▶ deferred the difference between ASL and ELG during the period 2015 to 2023. Starting 2024, MH16 uses ELG depreciation.
  - ▶ The deferred balance in the account is amortized starting 2020.
- ▶ The principle of the deferral should be to achieve an ASL cost profile, unless and until the Board approves ELG (which is not recommended). Since both methods yield the same total costs over time on any given asset (i.e., the full capital cost of the asset), the balance deferred from each year should be naturally amortizing.
  - ▶ As long as Hydro records by vintage, the balances will increase then decline as expected – not ever-growing as asserted.

# Section 6.0 – Reasons the 3.95%/year scenarios require revision (3)

## IFF16 Forecast Depreciation Expense (ELG vs. ASL) MIPUG-12, page 6-12

Regulatory Deferral - Change in Depreciation Method (\$ Millions)	Actual	Actual	Actual										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
1 Opening Balance	-	28	59	91	125	164	201	236	272	315	298	281	263
2 Additions	-28	-31	-31	-34	-40	-43	-45	-48	-56	0	0	0	0
3 Amortization	0	0	0	0	0	6	9	12	14	16	18	18	18
4 Closing Balance	28	59	91	125	164	201	236	272	315	298	281	263	245
5 Net Movement	-28	-31	-31	-34	-40	-36	-35	-36	-42	16	18	18	18
6 IFF16 Depreciation Expense (i.e. ELG)	352	367	375	396	471	515	555	597	689	714	726	739	752
7 <b>Depreciation IFF16 &amp; Net Movement</b>	<b>324</b>	<b>336</b>	<b>344</b>	<b>362</b>	<b>431</b>	<b>479</b>	<b>520</b>	<b>561</b>	<b>647</b>	<b>730</b>	<b>744</b>	<b>757</b>	<b>770</b>
8 <i>Derived 'ASL' Depreciation Expense**</i>	324	336	344	362	431	472	510	549	633	655	666	678	691

Total excess depreciation over first 10 years - \$352M.

By 2027, totals \$80M/year (carries into 2028-2037 period).

ASL outcome

Higher than ASL (due to amortizing)

Much higher than ASL – higher than ELG (due to amortizing plus use of ELG)

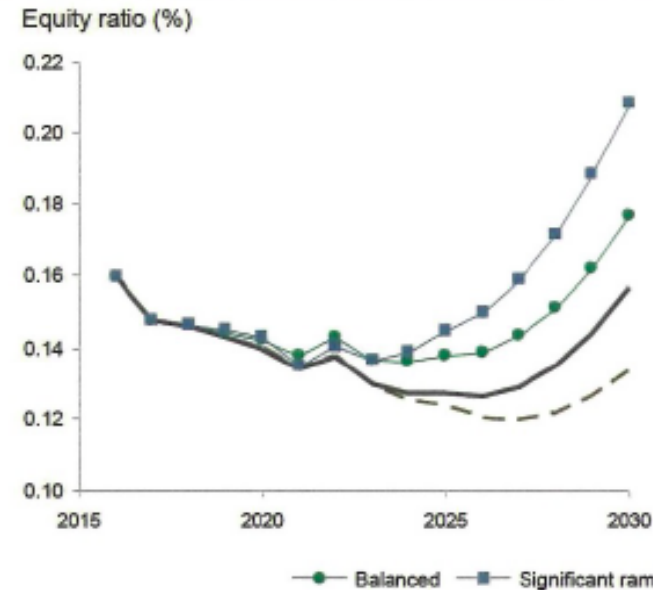


## Section 6.0 – Reasons the 3.95%/year scenarios require revision (4)

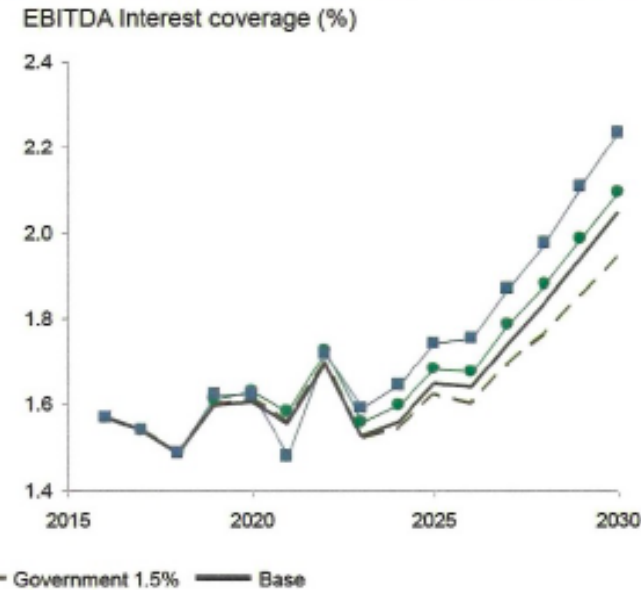
- ▶ DSM spending in MH16 still at high levels effectively unchanged from MH15
- ▶ Boston Consulting Group showed significant benefits from reducing DSM to a “balanced” or “ramped down” level (PUB-MFR-72, pg. 280 of 615):

Figure 6-4: DSM Adjustment Impact on Financial Ratios<sup>192</sup>

### Equity ratio rebound can be accelerated



### Interest coverage kept at healthier levels



- ▶ Report was prepared before latest reduction in export market forecast, and marginal values.
- ▶ Latest revision to marginal values dropped generation value by 1/3.
  - ▶ Should lead to reduced levels of cost-effective DSM

## Section 6.0 – Reasons the 3.95%/year scenarios require revision (5)

Fiscal Yr Ending	Incremental Increase/(Decrease) in Retained Earnings (in millions of dollars)			
	MH16	MFR77i	MFR77ii	MFR77iii
	100% of proposed DSM investment 100% of expected savings	50% of proposed DSM investment 50% of expected savings	100% of proposed DSM investment 50% of expected savings	0% of proposed DSM investment 0% of expected savings
2019	3 083	4	4	7
2020	3 427	25	18	39
2021	3 921	64	42	123
2022	4 594	124	82	241
2023	5 094	196	125	385
2024	5 466	275	171	548
2025	5 898	363	222	731
2026	6 265	460	277	930
2027	6 705	572	340	1 157
2028	7 193	699	411	1 415
2029	7 759	836	486	1 694
2030	8 411	983	570	1 989
2031	9 138	1 150	667	2 316
2032	9 979	1 326	770	2 671
2033	10 929	1 506	876	3 035
2034	12 002	1 689	976	3 416
2035	13 200	1 879	1 081	3 803
2036	14 470	2 057	1 174	4 203

- ▶ PUB MFR-77 shows importance of DSM hampering revenue
- ▶ Note MFR-77ii (3<sup>rd</sup> column) – what if spend the entire DSM budget but are unsuccessful and only achieve half the savings? Yields \$667M more retained earnings by 2031.
- ▶ This is only to achieve 1.1-1.2% savings of load – suggestion new agency may want 1.5%.
  - ▶ Entirely delinked from PUB priority on Integrated Resource Planning (IRP).

# Patrick Bowman Direct Testimony– Cost of Service and Rate Design

Pre-Filed Written Testimony MIPUG-13

## Section 7.0 – Cost of Service

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- ▶ Cost of Service study largely follows Order 164/16.
- ▶ Only remaining allocation issue is Customer Service (C10).
- ▶ Evidence does not support allocating “Contact Center - outages”, “Marketing R&D”, “Line locates” or “Building moves and safety watches” to the industrial classes in any material way.
  - ▶ Totals \$2.6 million allocated to the 3 GSL classes that is not supported – about 1% of total GSL costs.
- ▶ Also calculation issue re: Revenue:Cost Comparison ratios. Consider GSL >100kV:
  - ▶ Per Hydro’s model, class pays \$180M, has costs of \$160M.
  - ▶ Excess is \$20M/year. On a revenue base of \$180M, this is well over 10% above costs.
  - ▶ Hydro’s calculation approach indicates class is only over by 8.6% - not make sense.

## Section 7.0 Rate Design – RCC ratios (fairness)

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- ▶ In designing rates, attention should be paid to Cost of Service. This is a normal and appropriate regulatory practice for measuring fairness of rates.
  - ▶ The “long and often judicially approved practice of basing rates on cost carries a substantial presumption of validity which places a heavy burden on those who would refute it” [Shell Oil vs. FPC (quoted in Goodman)]
- ▶ GSL 30-100kV and GSL >100kV classes have been well above Zone Of Reasonableness (ZOR of 95-105) for very long time, with perpetual claims that adjustments not appropriate since COS study was “in flux” or needed review.
- ▶ Acknowledge Bipole III may help close this gap – but same claims made about Wuskwatim and that did not occur.
- ▶ Also note, ZOR is to reflect imprecision and other rate design criteria like stability – should not be opening to ignoring classes perpetually sitting at 104.9% or 95.1%.
  - ▶ Classes should vary about 100%, not stay at outer bounds.
- ▶ Room to give GSL 30-100kV and >100kV rate changes 1-2% less than average (\$2.2-\$4.4 million less revenue). GSS-ND also problematic.
  - ▶ Unity in 10 years requires -1.2% for GSL [PUB/MH-I-137a-b]

## Section 7.0 – Optional Time of Use Rates

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- ▶ Challenging issue:
  - ▶ Delays from Hydro; also refusal to address optional programming, as exists in other jurisdictions
  - ▶ Now, significant change in marginal costs
- ▶ Not recommend force TOU on all customers – particularly at present time
- ▶ As optional program, TOU could enhance fairness between GSL customers, whether load shifting occurs or not.
  - ▶ Customers with favourable TOU profile (e.g. more off peak use) already drive less costs for system, but receive no recognition for this.
  - ▶ Lost revenue of \$1.5M would be less than 1% reduction from class. Absorbed within current class RCC overage (almost same size as just the C10 overallocation).
- ▶ If can drive load shifting, can yield systemwide benefits for all customers. But not needed to justify program.
- ▶ Clearly further analysis needed to reflect significant change in marginal costs. Only practical option from this hearing is direction to design optional program.