Post-NFAT:

Headwinds, Windmills and Manitoba Consumers

Closing Submissions of the Coalition

Chapter 1: Overview (Recommendation 1)

Headwinds

- Thank you
  - PUB
  - Mr. Colton
    - energy inclusiveness agenda
  - Ms Lee
    - folksy - common sense approach to depreciation
  - Mr. Bowman
    - reminder of how we got here
    - suggestions for managing headwinds in the context of strengths and opportunities of the Corporation
    - call for calm

Windmills

- Our client finds it difficult to echo Mr. Bowman's call for calm
  - David and Goliath (Mr Hacault)
  - Hydro five panels – same message – significant detail
- Tilting at Windmills
  - Hydro's new affection for a 5% solution
- Concern that consumer and PUB efforts over the last decade in vain
- Concern that the promise of the NFAT compromise has been undermined

This is not a narrative of prudence

- Hydro's consistent message:
  - Fair and Balanced
- Implicit in assertion of fairness is claim of prudence:
  - That the costs we face today and in the future incurred in a reasonable and prudent manner
- This is not a narrative of prudence
  - It is a story of questionable choices made despite good advice
- It raises a profound question - if we accept the Hydro 3.95% solution or Mr. Rainkie's new 5% solution
  - **Have we acquiesced?**
  - **Have we authored a blank cheque for future questionable expenditures?**

The Coalition's narrative - Hydro was warned

- Significant progress in hydro's equity level as compared to 2004/05 (drought and dividend)
- Consumers substantial contributors through significant rate increases (PUB 5-12, p. 25)
- For many years, Manitoba consumers, the PUB and external experts have advised Manitoba Hydro that:
  - their capital costs were being underestimated
  - their export revenues were being overestimated
  - their capital plans were too ambitious
  - their day to day capital expenditures needed to be brought under more rigorous scrutiny
  - overall O, M and A including construction needed to reined in
  - Hydro was missing the bus on DSM (mitigate load growth, capital costs and bill impacts)
  - ratepayers including vulnerable Manitoba ratepayers were going to pay the price

Hydro said it could be managed

- Manitoba Hydro has consistently told us that these risks can been managed:
  - 2010-2012
    - decade of investment and a decade of returns
      - *Board Order 5/12*, pages 25 – 28
    - IFF2013
      - sunny view of export prices
    - NFAT
      - Bipole III = $3.2 B
      - pipeline growth = Keeyask needed
      - could manage 3.95% even with Conawapa

The promise of the NFAT

- Our client did not support approval of Keeyask at the time of the NFAT
- But saw the NFAT recommendation as a thoughtful, reasonable and well intentioned decision:
  - stop Conawapa for the time being
  - modernize resource planning and DSM programming and
  - look for ways to mitigate rate impacts
- The NFAT compromise was focused on consumer protection

But now Hydro has changed its tune

- Bipole III = $4.65 Billion (PUB/Hydro 1-17 c)
- Export revenue pessimist (PUB 1-10 b)
- Pipeline load growth now roughly half of the NFAT claim:
  - "The pipeline load increase for 2023/24 in the 2014 forecast was 824 GW.h lower (1,478 GW.h – 655 GW.h) than the NFAT 2013 forecast. This lower forecast was for the pipeline load reflecting updated information on the expected load increases anticipated in this sector."
  - PUB/MH 1-57b)
- 5% rate increase sounding pretty good to Mr. Rainkie on Monday

Do not enable Hydro

- Hydro listens best – when it is given a rate signal not a rate reward
- Better financial position today than envisioned in IFF11-2 (last GRA)
- Significant market and financial strengths
- Has not demonstrated creative management in a cost effective way through headwinds
- Many of the rate pressures are self-inflicted
- 3.95% validates questionable choices in the face of good advice

This is the year to send a signal

Coming back to the call for calm

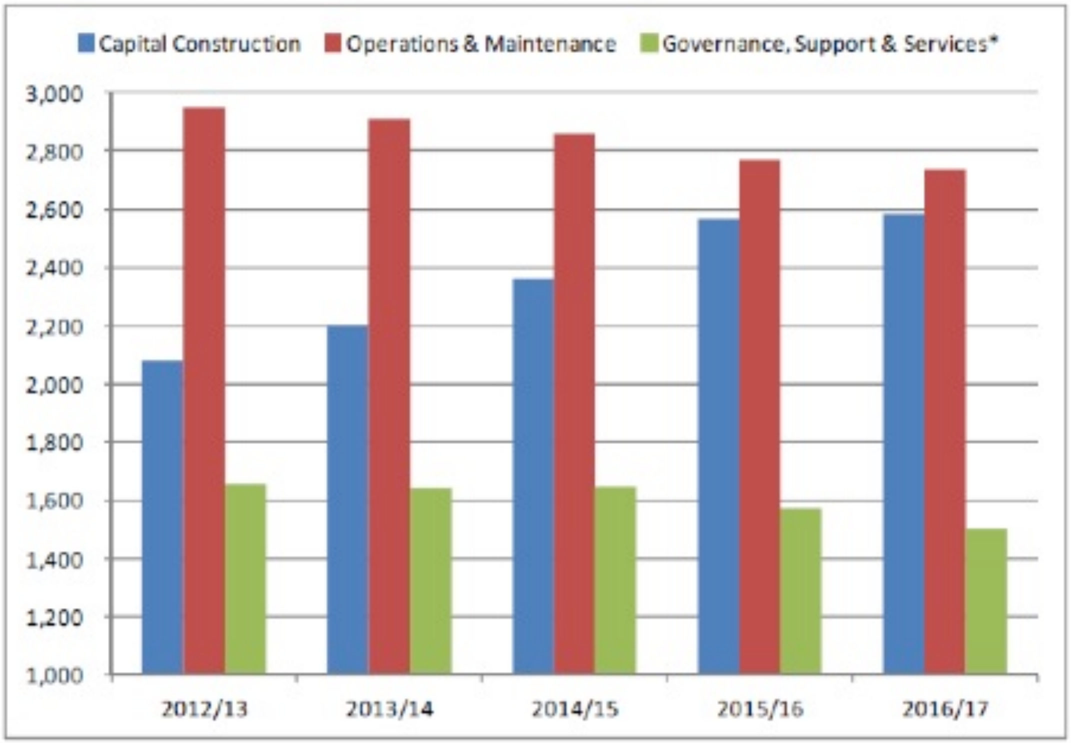
- Hydro is a corporation in transition:
  - still learning about integrated resource planning
  - DSM program in flux and state of transition
  - Affordable Energy Program starting to get off ground after some uncertain steps
  - has not demonstrated the sophisticated sustaining capital planning process found in other jurisdictions

Coming back to the call for calm (cont'd)

- little evidence shown of O, M and A expenditure control on the capital side of the Corporation
  - Hydro's commitment is to manage operating cost increases to 1% per annum focused on operational costs.
  - staff reductions focused on operational positions
    - (Tab 5, pg 45; PUB/MH 1-34; Appendix 5.5, figure 5.5.3)
  - No similar targets or staff level containment on the capital side.

Coming back to the call for calm (cont'd)

Figure 5.5.7 Straight-time and Over-time EFTs by Category



Appendix 5.5, pg 8

Coming back to the call for calm (cont'd)

- consistently overstates interest rates
- admitted challenges in export price estimates

RECOMMENDATION 1

- **Give Hydro a roadmap for 2015/16**
  - Set out your expectations for Manitoba Hydro over the next year
  - If Hydro wants their 3.95% or his 5% in 2016/17, let them earn it:
    - demonstrate good choices in the face of good advice
    - demonstrate necessary financial and economic circumstances with a view to the test year and the longer term
  - Approve 2.75% interim (2014/15)
  - Approve in the range of 2.5% (2015/16) recognizing that rate approval may not be given until July 1 or August 1, 2015

The homeowner and their credit card

- Discussion between the Chairperson and Mr. Rainkie regarding “borrowing for a period of... eight (8) years to cover interest”
  - Transcript, June 3, 2015, pgs2041 – 2042

The homeowner and their credit card (cont'd)

- Response:
- Important question but (as the Chairperson suggested) not a choice we have to make today.
- First issue – do I have my numbers right?
- It would be important to know – when I was deciding whether to "borrow to pay interest" four things:
  - Have I carefully reviewed my budget – and is this truly what the future necessarily holds for me?
  - Are there uncertainties in my budget that – with the breathing room I have – can be firmed up – before I consign myself to austerity?
  - What is my alternative - If it means not having drink at the local bar or going out for supper to nice restaurant once a month – that's different than if it means I cannot put decent food on the table for my family
  - Is the situation temporary – If there is no "light" at the end of tunnel then borrowing digs a hole I don't see myself getting out of. However, if there are good prospects for my future then I may consider such borrowing.

The homeowner and their credit card (cont’d)

- With respect to item (i) and the parallel to MH’s situation -There are a number of places where the budget (interest rates, modern capital asset planning) may appear excessive. Before I ask my family to eat mac & cheese I need to revisit these items
- With respect to item (ii) and MH’s situation – time may allow for better insight into interest rate forecasts, DSM needs/plan for future, improved capital planning and prioritization, etc.)
- With respect to item (iii) and the parallel to MH’s situation – Rate increases to avoid having to borrow to pay interest are not “cost” free. There are real impacts on consumers – particularly low income consumers.
- With respect to item (iv) and the parallel to MH’s situation – there does appear to be “light” at the end of tunnel – i.e. after Keeyask is operating and export revenues increase.

The homeowner and their credit card (cont'd)

- The situation that MH faces is not really comparable to a household deciding to not pay interest on his/her VISA bill and let it compound. VISA are typically used to pay for consumable goods.

- The significant investments that MH is making are more comparable to the homeowner:
  - Further mortgaging our home in order to do major work required on the roof to ensure "viability" in the event of a heavy hail storm (BP III),
  - Having decided to expand our home 10 years from now is the best way to address housing needs when we have a family – decides to the undertake the expansion now on the premise that the rents receivable over the next 10 years will more than pay for the earlier construction and further mortgages his home to finance it.
  - Having decided to proceed with both options – subsequently finds out that <u>both</u> will cost more than originally expected and current lifestyle cannot afford to make the mortgage payments during the initial years

- With the circumstances having changed the first thing that a "savy" homeowner would do is reassess where original decisions to undertake the roof repair AND undertake the expansion at this time make sense. (It is not at all clear that this reassessment took place for Manitoba Hydro).

- If there was an overall benefit, but concern about what early sacrifices might be involved to reach that longer term benefit, the homeowner also has the option of taking out a slightly higher mortgage. This would allow earlier payments without having sacrifice as much in the short-term. However, the downside is that less borrowing room if a future unforeseen emergency arose.

Chapter 2: Hydro was warned (Recommendation 2)

This is not a revisionist history

- The Coalition's narrative is not revisionist history
- It is the Board's advice in the Board's words

Hydro was warned in 2008

- **Export prices may be over-optimistic**
  - "MH's plans for capital expenditures may involve the expenditure of $18 billion or more over the next 15 years, expenditures predicated in part on what may or <u>may not be overly optimistic export prices</u> – this level of capital expenditure will result in significantly increased debt levels, export commitments and general business risks.
    - (90/08, p. 4, emphasis added)
  - The Board expresses concern, not to be confused with opposition, with the unprecedented capital expenditure levels, and questions <u>whether the export revenue stream</u> from new generation and transmission projects <u>will be sufficient</u> to cover the financial obligations related to these works, given the inherent risks that are present and lie ahead.
    - (90/08, p. 18, emphasis added)

Hydro was warned in 2008 (cont'd)

- **Be Careful about O, M & A Capitalization - You need to benchmark**
  - The Board notes MH defends its level of OM&A expenditures on the basis of 'need' and has argued that it has successfully 'controlled OM&A cost per customer account'. The Board is of the view that this premise will remain not fully substantiated, given the <u>enormous amount and percentage of total OM&A costs</u> that have been and are <u>forecast to be capitalized</u>, at least until adequate peer <u>benchmarking</u> has been performed and the results reviewed.
    - (116/08, p. 93, emphasis added)

Hydro was warned in 2008 (cont'd)

- **Where is an articulated and demonstrably justified capital asset strategy?**
  - The Board has, as interveners have noted, expressed concern with MH's debt growth in previous orders. In Order 143/04, the Board noted:
    - "The Board continues to be concerned with the progressive substantial growth in capital expenditures and accompanying debt. The Board accepts that many of the capital expenditures are related to reliability and safety, and therefore are may [sic] be prudent to incur. The Board also recognizes that many of the forecast capital expenditures are related to or the equivalent of generation expansion, such as supply side enhancements, Wuskwatim, Gull, Conawapa, and may be justified individually when considering each project's purposes and forecast results over the long term.
    - However, collectively these projects negatively impact MH's debt to equity ratio and net income in the initial years, placing increased strain on the financial stability of MH and adding additional risk for existing ratepayers. The Board is concerned that MH has not developed a threshold for capital expenditures and associated debt growth that considers all projects, together with the health and financial stability of the Company."
      - (116/08, p. 156, emphasis added)

Hydro was warned in 2008 (cont’d)

- The warning was accompanied by a rate increase higher than Hydro sought:
  - MH sought general rate increase of 2.9% for all customer (except ARL with was 1%). In Order 90/08 (page 10), received across-the-board increase 5% July 1, 2008, except for ARL.
  - See also Order 116/08.

Hydro was warned in 2011

- **Spending without approval is risky**
  - MH has expended hundreds of millions already on its "preferred development plan", a plan yet to receive regulatory approval on either side of the Canadian-U.S. border. MH continues to spend to "protect" the in-service dates required to meet the obligations of its new export sales contracts. . . . <u>expending massive funds ahead of final regulatory approval</u> appears to represent <u>speculatio</u>n, and, given the hundreds of millions that have been spent and the ongoing spending, a degree of speculation rarely found with private utilities, let alone Crown Corporations. If the plans do not work out, then the pre-spending may well have to be <u>"written off"</u>, with implications for rates and the current generation of ratepayers.
    - (99/11, p. 80, emphasis added)

Hydro was warned in 2011 (cont'd)

- **Benchmarking Needed**
  - The Board is convinced that domestic ratepayers will benefit from the developments of appropriate metrics to assess the reasonableness of the level of current and future OM&A expenses, in advance of, if not particularly because of, the proposed <u>major capital expansion</u> program (that program "driving" OM&A expenses).
    - (90/11, p. 84, emphasis added)

Hydro was warned in 2011 (cont'd)

- **Danger of OM&A "Write Off"**
  - The Board remains concerned with the escalation of operating expense, of which a large portion is being deferred (to be borne by future ratepayers). Such deferral has muted the OM&A increases reflected in MH's annual accounts, its GRA rate requests and domestic rates.
  - OM&A costs have increased in part due to MH engaging hundreds of new employees involved, in one capacity or another, in implementing – <u>ahead of regulatory approval</u> - the Utility's development plans. OM&A period costs are being accumulated and that accumulated amount, which grows by the day, faces the risk that it may have to be <u>"written off"</u> if the development plans now proposed by MH are either significantly amended or rejected.
    - (90/11, p. 84, emphasis added)

Hydro was warned in 2012

- **Warnings of BP3 and Keeyask Driven Rate Increases**
  - There still remains doubt as to whether the Bipole III budget, with its current cost estimate of $3.2 billion, will prove accurate, or whether the forecast costs will again increase, to, say, $3.9 billion or $4.1 billion, or even higher.
    - (Order 5/12, p. 54, emphasis added)
  - It would appear obvious that Bipole III costing $3.2B instead of $2.3B would require an additional rate increase in 2019, and Bipole III costing $4.0B instead of $2.3B would require an even larger rate increase in 2019.
  - Similarly, the Board is of the view that Keeyask costing $5.64B instead of $4.59B would require an additional rate increase in 2019 . . .
    - (Order 5/12, p. 64, emphasis added)

Hydro was warned in 2012 (cont'd)

- **Delaying Capital Cost Updates is Imprudent**
  - The Board views, with considerable concern, MH's lack of a defined approach to updating major project costs. Delaying the use of updated cost estimates for administrative process reasons reflects poorly on the validity of MH's recommendations for future power resource developments.
    - (Order 5/12, p. 65, emphasis added)
  - **Projected OM&A Savings of $13 M annually are not enough**
    - The Board notes that the Corporation has shown some interest in undertaking cost containment measures. However, such measures are far too modest and short-lived. MH's annual operating costs top $700 million, with targeted measures expected to deliver only $13 million of savings, or 2% of the total.
      - (Order 5/12, p. 100)

Hydro was warned in 2012 (cont'd)

- **Export Revenue Forecasts are not reliable**
  - In the Board's view the IFF09-1 and IFF10-2 export revenue assumptions are not reflective of the current and near term energy market. As such, the suggested_progression of rate increases would be inadequate to cover MH's CEF09 Major Capital Expenditure Program. When the major project cost escalation is also considered, the insufficient revenue is substantially magnified. The Board would suggest that the cumulative rate increase requirements by 2025/26 would be significantly greater than the 57% forecast by MH, and quite possibly roughly double MH's forecast.
    - (5/12, p. 84, emphasis added)

Don't let project costs get "out of whack"

- MH must take a careful approach to future development to take advantage of the opportunities available based on Manitoba's hydrologic resources. MH must ensure that costs of the development plan "**don't go way out of whack**", make sure good prices are achieved in the final long-term export contracts, and make sure that the benefits flow back to Manitoba ratepayers and are not shared too widely with other parties.
  - (KPMG, Risk Report on Manitoba Hydro, cited in Board 5/12, pg 192, emphasis added)

Financial targets reached early

- Financial targets reached 4 years early:
- Since 2004, the Board has continually approved rate increases for MH that have been in excess of inflation and also in excess of MH’s own rate increase requests. These rate increases have in large measure contributed to the annual Net Income of the Utility and therefore to the Retained Earnings of MH. The rate increases further enabled MH to achieve its financial target of a <u>75:25</u> debt-to-equity ratio a <u>full four years ahead</u> of the target date sought by MH’s Board of Directors.
  - (Order 5/12, p. 25, emphasis added)
- Hydro's self inflicted wounds were anticipated by PUB
- current ratepayers have already paid into reserves in anticipation of BP3/Keeyask

Operating results better than 2010 & 2011 forecast

- **Hydro's Results were better than the forecast in 2010 and 2011**
  - While MH has not made its case for the higher rate increases it requested, its <u>financial position</u>, arising from its Operating Results for the years ending March 31, 2010, 2011, and 2012 is <u>significantly better than when MH filed its GRA</u> in both MH's own assessment and the assessment of the Interveners. For the fiscal year ending March 31, 2010, MH was forecasting $121 million of Net Income. Actual Net Income was $43 million greater, at $164 million. For the fiscal year ending March 31, 2011, MH was forecasting $78 million of Net Income. Actual net income was $65 million greater, at $143 million.
    - (Order 5/12, p. 28, emphasis added)
- Likewise, Hydro performed better in 2012/13 and 2013/14 than projected in IFF11-2 (2013 GRA)
- Recent history suggests Hydro tends to outperform GRA forecasts with water flows and interest rates being contributing factors

Future rate pressures reflect self-inflicted wounds of MB Hydro

- **Export prices forecasts were too optimistic**
  - (Coalition/MH 1-24 c)
  - The higher IFF14 export revenues in most of the years are due to volume and exchange rate changes between forecasts – export prices are lower. This can be seen from the following variance analysis from CAC/MH I-24 d)

Future rate pressures reflect self-inflicted wounds of MB Hydro (cont'd)

- The higher IFF14 export revenues in most of the years are due to volume and exchange rate changes between forecasts – export prices are lower. This can be seen from the following variance analysis from CAC/MH I-24 d)

(Millions of Dollars)

	MH14 compared to MH13				MH14 compared to MH12				MH14 compared to MH11-2				MH14 compared to MH10-2			
	Price	Volume	US Exchange & Other	Total	Price	Volume	US Exchange & Other	Total	Price	Volume	US Exchange & Other	Total	Price	Volume	US Exchange & Other	Total
2015	(4)	11	25	32	(43)	104	37	98	(95)	122	29	56	(174)	111	13	(51)
2016	(58)	107	56	104	(56)	109	50	103	(147)	123	42	18	(234)	120	21	(92)
2017	14	5	38	57	4	23	32	58	(97)	39	21	(38)	(159)	34	2	(123)
2018	(1)	(17)	33	15	1	9	31	40	(118)	43	20	(56)	(167)	26	1	(140)
2019	(11)	13	34	36	(25)	54	32	60	(132)	66	21	(46)	(172)	52	1	(118)
2020	(8)	17	32	40	(38)	83	29	74	(154)	84	17	(52)	(229)	53	(4)	(180)
2021	(22)	36	58	72	(43)	138	28	123	(166)	173	10	17	(254)	184	(24)	(94)
2022	(18)	53	49	83	(46)	133	19	106	(173)	198	(1)	24	(198)	133	(41)	(105)
2023	(26)	58	58	89	(49)	121	29	101	(182)	209	9	36	(202)	127	(32)	(106)
2024	(22)	82	57	117	(60)	175	30	145	(154)	215	10	71	(157)	(42)	(32)	(231)
2025	(18)	107	57	145	(64)	212	30	178	(202)	70	10	(122)	(203)	(361)	(32)	(597)
2026	(16)	114	52	150	(42)	14	28	(1)	(210)	(257)	8	(459)	(321)	(420)	(31)	(772)
2027	(23)	(59)	52	(30)	(31)	(255)	28	(258)	(218)	(334)	8	(544)	(353)	(403)	(31)	(787)
2028	(8)	(356)	50	(315)	(33)	(336)	27	(341)	(211)	(363)	8	(566)	(360)	(413)	(31)	(804)
2029	(12)	(443)	49	(406)	(54)	(326)	27	(353)	(217)	(349)	8	(558)	(377)	(409)	(30)	(816)
2030	(11)	(436)	48	(398)	(59)	(319)	27	(351)	(210)	(350)	8	(553)	(377)	(407)	(30)	(815)
2031	(13)	(450)	41	(421)	(65)	(338)	22	(382)	(208)	(377)	3	(582)				
2032	(12)	(473)	40	(446)	(66)	(353)	21	(398)								
2033	(14)	(483)	38	(459)												
Total	(284)	(2,113)	864	(1,534)	(770)	(754)	527	(997)	(2,893)	(689)	229	(3,353)	(3,938)	(1,614)	(279)	(5,831)

Future rate pressures reflect self-inflicted wounds of MB Hydro (cont'd)

- Capital Cost estimates were understated

Manitoba Hydro

Manitoba Hydro 2014/15 & 2015/16 General Rate Application
PUB/MH-I-17c (Revised)

Progression of Project Costs in $ M												
	CEF-03	CEF-04	CEF-05	CEF-06	CEF-07	CEF-08	CEF-09	CEF-10	CEF-11-2	CEF-12	CEF-13	CEF-14
Wuskwatim G.S.		846	935	1 094	1 275	1 275	1 275	1 275	1 375	1 449	1 449	1 449
Wuskwatim Transmission		199	200	257	320	316	316	291	298	323	320	320*
Wuskwatim Total Project	988	1 045	1 135	1 351	1 595	1 591	1 591	1 566	1 673	1 771	1 768	1 768
Herblet Lake Transmission	57	55	54	54	95	93	93	75	75	77	76	76*
Bipole III	360(E)	388(E)	1 880	1 880	2 248	2 248	2 248	3 280	3 280	3 280	3 280	4 653
Riel C.S.	96	101	103	103	105	268	268	268	268	268	330	330
Kelsey G.S.	121	121	166	166	184	190	190	302	302	302	302	340
Kettle G.S.		61	61	61	61	76	76	166	166	166	166	192
Pointe du Bois Spillway							318	398	398	560	560	575
Pointe du Bois Trans.					83	86	86	86	86	86	114	114
Pointe du Bois Rebuild	421	288	692	834	818	818		1 538	1 538	1 538	1 538	1 852
Slave Falls G.S.				179	192	198	198	223	230	230	126	126
Conawapa G.S.		4 050	4 516	4 978	4 978	4 978	6 325	7 771	7 771	10 192	10 492	397
Keeyask G.S.						3 700	4 592	5 637	5 637	6 220	6 220	6 496
500 KV Dorsey U.S. Border						205	205	205	205	205	350	350
Total	2 043	6 109	8 607	9 606	10 359	14 451	16 190	21 515	21 629	24 894	25 322	17 270

*Wuskwatim Transmission and Herblet Lake Transmission Projects are in-service and have no further capital spending. These projects were removed from CEF14 but included in this table for completeness.

RECOMMENDATION 2

- The PUB find that many of the pressures faced by current and future ratepayers are the consequences of questionable choices in the face of good advice
- The PUB recommend the Province review relevant legislation with a view to the question of whether the PUB should be granted approval authority relating to major capital projects

Chapter 3: Capital Asset Planning

A Pitch without a Plan?

(Recommendation 3)

Rapid evolution of practices in certain jurisdictions

- Issue dates to PUB in 2004 (see slide 25) – projects that may be individually desirable but not collectively sustainable from the perspective of:
  - budget
  - performance
  - risk
- Over ensuing years - rapid development in sophistication of practices in jurisdictions such as Ontario:
  - more regulatory rigour
  - not about process for process sake
  - about – improving cost effective performance
  - in integrated fashion
- As Mr. Morin acknowledges:
  - their process in Ontario is a very rigorous process of [looking at] asset management strategies.
    - (Tr pgs 1331-1336, May 29, 2015)

Manitoba developments

- **Original 2008 Order**
  - 7. MH to undertake and file with the Board an Asset Condition Assessment Report by June 30, 2009, that defines:
    - a) major assets and categories of assets;
    - b) the estimated remaining economic life of each major asset and category of asset;
    - c) an indication of the implications for OM&A costs related to required and scheduled maintenance;
    - d) a listing of scheduled, planned or anticipated major upgrading/ decommissioning of major assets and/or categories of assets;
    - e) forecast expenditures for planned renovations and/or replacements with respect to now available energy supply and transmission; and
    - f) Dam Safety Condition Assessment and Maintenance requirements.
      - (Board Order 116/08, pgs 345-346)

Manitoba developments (cont'd)

- **Varied 2008 Order**
  - In its 150/08 Decision the PUB stated:
    - The Board requires additional information as to the dates, timelines, and functionality of the planned Enterprise Asset Management System.
    - The Board will vary the existing Directive, by requiring MH to file proposed Terms of Reference for a future Asset Condition Assessment Report by June 30, 2009. The Terms of Reference filing will provide MH with the opportunity to flesh out its timelines and functionality of the proposed Enterprise Asset Management System in completing a detailed Asset Condition Assessment Report.
      - (Board Order 150/08, pg 26)

Five years later

- **Board Order 43/13**
- That Manitoba Hydro complete and file with the Board an Asset Condition Assessment Study no later than the filing of the next updated depreciation study with the Board. (p. 5)
  - in house distribution study prepared late 2012 (Appendix 40)
  - Kinetrics report (transmission) prepared late 2012 (but not filed during GRA) (not filed in 2015/16 GRA until requested by Coalition)
  - no comparison between the studies:
    - Kinetrics – externally and expertly prepared robust assessment of parameters and factors
    - Appendix 40 – honest in house first try (primarily reliant on aging)

What a modern capital asset strategy involves

- See table from Coalition opening statement

What a modern capital asset strategy involves (cont'd)

- **Optimizing decisions against risk, performance targets and financial constraints**
  - generally accepted goal for a mature and effective assessment management plan - assist in making optimal maintenance and capital investment decisions measured against an assessment of **risk, performance targets, and financial constraints**.
    - (Tr, Thompson, May 26, 2015, pgs 551 – 558, emphasis added)
- **Tied to Reliability Objective**
  - often tied to express performance objectives as represented in terms such as SAIDI and SAIFI
    - (Power Stream, Coalition Exhibit 20, p. 34 and 35 of 38)
- **Assesses both the Probability of Failure and the Criticality of Failure**
  - includes better insight into the condition or health of the equipment that's operating (AHI)
  - involves understanding the importance or criticality of equipment for the operations of the system
    - (Tr, Thompson, May 26, 2015, pgs 551 - 558)

What a modern capital asset strategy involves (cont'd)

- **Integration of capital expenditure activities with operational and maintenance activities**
  - helps the Corporation to understand if there are any operational or maintenance activities that could be undertaken to mitigate equipment degradation
  - help to decide which assets need to be replaced and which can be repaired
  - may involve robust vegetative management plan
    - (Tr, Thompson, May 26, 2015, pgs 551 - 558)

- **Requires priorization and pacing at business unit and corporate level**
  - should improve the ability of the Company to make objective and prudent investment decisions
  - can give insight into the pace of repairs
  - in terms of prioritizing, enables comparison of different assets in a consistent matter
  - part of the push towards modern capital asset management practices, to give better decision-making tools to senior executives to prioritize decision
  - one (1) of the objectives cited in support of enhanced asset management practices is to enable fact-based decision making at the asset portfolio level across the Company.
    - (Tr, Thompson, May 26, 2015, pgs 551 - 558)

What a modern capital asset strategy involves (cont'd)

- **Requires insight into mechanism of degradation and health of asset:**
  - age is not enough
    - Using chronological age instead of "effective age" would have resulted in almost doubling the actual replacement rate for wood poles.
      - (II-53, Attachment 2, p. 39/64)
- **Goes Beyond Age**
  - So historically, things were very --**very time-based**. You -- you had a standard. You --you replaced the part after a certain period of time expired, which was suboptimal, because some parts would fail prior to their anticipated life, and **some would --would have lasted a lot longer and you've - you've wasted money. So, I mean, that's part of the evolution of -- of those practices.**
    - (Tr, Thompson, May 26, 2015, pgs 551 – 558, emphasis added)

We know what modern analysis should look like

- <u>Example 1 – Kinetrics</u>
  - does not rely on age alone:
    - Asset Condition is not only function of age of the asset
      - (Coalition II-53, Attachment 2, p. 8/64)
  - examines asset condition and mechanism of failure
    - (Coalition II-53, Attachment 2, p. 8/64)
  - considers not just probability of failure but criticality of asset
    - (II-53, Attachment 2, p. 10 and 12/64; II-53, Attachment 1, p. 86/172)
  - develops list of most likely to fail
    - (II-53, Attachment 2, p. 26/64)
  - considers optimization and deferral
    - (II-53, Attachment 2, 35/64, 40/ 64, 62/64; II-53, Attachment 1, p. 11/172)

We know what modern analysis should look like (cont'd)

- Example 2 – Power Stream
  - Asset Health Index – relies on more than age (Mr. Morin may be have inadvertently left wrong impression)
    - (PS, p. 6/38)
  - Undertakes optimization case and expressly articulates alternatives
    - (PS, p. 17, 23, 24, 25/38)
  - Expressly integrating maintenance including Vegetative Management – consideration of budget and trade-off
    - (PS, p. 26, 27, 28/38):
      - using Copperleaf 55 (not yet employed distribution side Hydro, Mr. Morin, Tr. 1278-80)
  - Assess Investment based on reliability outcome
    - (PS, 34, 35, 36, 37, 38/38)
  - Examines data carefully for matters that are susceptible to influence and those that are not
    - (PS, p. 34, 35, 36, 37, 38/38)

What do we know about Manitoba Hydro?

- We know that transmission assets that have been examined by an external third party have been found to be in very good shape:
  - Condition results indicate that MH's transformers and breakers have **considerably longer lives** than in other jurisdictions. This is due to a combination of **rigorous maintenance** practices combined with **colder than average ambient temperature and moderate loading.**
  - The "Effective age" of assets was in most cases less than the corresponding chronological age so much so that even using industry failure curves to relate condition with the corresponding probability of failure still resulted in relatively few future replacements.
    - (II-53, Attachment 2,page 37/64; see also TR, Dr. Swatek, May 29, p. 1307 -1310, emphasis added)
- We know that assets that have been examined by an external third party suggest that age is not a good proxy for effective life
  - Using chronological age instead of "effective age" would have resulted in **almost doubling the actual replacement rate** for wood poles.
    - (II-53, Attachment 2, p. 39/64)

Distribution appears to have a significant way to go in modernizing asset planning

- more robust parameters Generation and Transmission than for Distribution
  - (Coalition II-52)
    - p. 3/9 – parameters for wood poles for distribution
    - p. 5/9 – parameters for wood poles for transmission
- disparity in process does not lend itself to portfolio level analysis
- distribution heavily reliant upon age rather than robust parameters

Distribution appears to have a significant way to go in modernizing asset planning (cont'd)

MR. BYRON WILLIAMS: So, Mr. Morin, when we – when we look to the -- page 3 and -- of 9, we start to see the parameters used with regard to the distribution side. Is that correct, sir? Page 3 of 9 of COALITION-II-52(a) to (f)?

MR. MICHEL MORIN: That's correct.

MR. BYRON WILLIAMS: And we'll go into some detail about this later, perhaps, but we -- we see age as a parameter coming up fairly frequently with -- in terms of the distribution assets, sir?

MR. MICHEL MORIN: Yes.

MR. BYRON WILLIAMS: And at times, the weights assigned to age are 100 percent, sir?

MR. MICHEL MORIN: That's correct.

- (Tr, May 29, 2015, pgs. 1318 – 1319)

Distribution appears to have a significant way to go in modernizing asset planning (cont'd)

- Hydro is very defensive about the use of age as the primary parameter for distribution poles:
  - And -- and I think Mr. Williams was getting into age versus effective age. Well, their PowerStream is using age just like we are in the distribution side.
- But PowerStream gives little weight to age
  - (6/38)
- Similarly on the Transmission side, age is given little weight
  - (Tr, Dr. Swatek, pgs 1312 -1313)

Distribution appears to have a significant way to go in modernizing asset planning (cont'd)

- We know that lines of business such as distribution has never been subject to an external evaluation and have just recently retained Kinetrics
  - (Tr, May 29, cross examination)
- We know that distribution does not yet use the CoppperLeaf 55 tool used by Power Stream and by Generation

Distribution appears to have a significant way to go in modernizing asset planning (cont'd)

- We know that unlike PowerStream – distribution does not tie investments to reliability outcomes (Coalition 1-87)
  - compare to PowerStream pages 34 and 37/38
- We know that Hydro claims to have relied upon Appendix 40 (distribution study) for Budget purposes

  MS. SANDY BAUERLEIN: I believe my comment was in reference to the allocation of the overall sustaining capital investment dollars to each of -- whether generation, transmission, distribution, or corporate infrastructure. So when determining how much of the overall investment should be allocated to distribution we took into account the 2012 distribution asset condition report as one (1) of the inputs.

    - (Tr, May 29, 2015, pgs 1248-1250)
- Hydro had document in 2012 in plenty of time for IFF13

Distribution appears to have a significant way to go in modernizing asset planning (cont'd)

- We know that distribution asset study – not nearly the calibre of Kinetrics Analysis
- Kinetric relies on asset condition
  - Using chronological age instead of "effective age" would have resulted in almost doubling the actual replacement rate for wood poles.
    - (II-53, Attachment 2, p. 39/64)
- Distribution - heavy reliance on age
- Kinetrics robust consideration optimization and deferral
  - (II-53. Attachment 2, pgs. 35/64, 40/ 64, 62/64)
  - (II-53, Attachment 1, p. 11/172)
  - optimization for transmission wood poles see Tr, Dr. Swatek, p. 1320-1325

Distribution shows dramatic growth in sustaining capital budget

- dramatic growth in distribution budget
  - 2013/14 $185.747 M
  - 2014/15 $235.5 M
- $50 M increase in the absence of external review – heavily reliant upon age – substandard analysis
  - *Reference table based on PUB 1-22 c

Distribution shows dramatic growth in sustaining capital budget (cont'd)

- Significant concern for client:
  - line of business without external evaluation
  - without Copperleaf prioritization tool
  - without robust parameters
  - which relies heavily on age
  - shows largest growth of any line of business
- Significant concern for Coalition because Hydro cannot draw and does not draw the link between performance and investment

Why does the Coalition care so much about investments in human resources and corporate services?

- Another line with significant growth from $62.6 M to $75 M
- Notably building expenditure:
  - 22.4 M 2014/15
  - 24.3 M 2015/16
- Not mentioned in Appendix 4.2
  - (Tr, Mr. Rainkie, June 12, 2015, pgs. 3675 - 3679)
- Difficult to relate investments in buildings to improvements in SAIFI and SAIDI

It is hard to figure out what is going on with building investments?

- Original discussion – May 29 Hydro not sure if it had a Condition Assessment (Tr. 1289-1291)
  - there wouldn't be a specific asset health index
    - (Ms Baureleine)
  - "something that's in the works"
    - (Mr. Rainkie)
- Exhibit 81 appeared to say it had a Facilities Condition Index
- But Hydro appeared reluctant to share it
  - (Tr, Mr. Rainkie, June 12, 2015, pgs. 3675 - 3679)
- The picture became even more muddled on June 15, 2015 – when it was no longer clear whether the document existed or was just hard to reproduce

Why the Coalition cares

- pretty clear by now – Hydro has some challenges here in capital asset planning
- Appendix 4.2 does not approximate the quality of analysis found in Kinetrics:
  - generally presents conclusions without analysis
  - with rare exceptions does not outline key parameters
  - took the Coalition repeated efforts and two rounds of IRs to simply dig up parameters found in Coalition II-52
  - it is a stretch to call in an asset condition report

Why the Coalition cares (cont'd)

- Clear that Hydro unable to demonstrate a robust optimization process or strategy similar to PowerStream
  - no evidence of integration or trade-offs between maintenance (including vegetative maintenance) and capital investment expenditures (ie PowerStream)
    - yet tree contact is the second most prevalent contributor to SAIFI and SAIDI challenges
      - (Mr. Morin, pgs. 1320-1325)
  - no evidence of choice between optimized and deferred as displayed by Kinetrics
  - no identified relationship with performance outcomes (ie PowerStream)
  - little evidence of vigorous, evidence based alternatives analysis
  - difficult to envision "apples to apples" comparison across business units given disparate state of development

Why the Coalition cares (cont'd)

- much of the material insight into how Hydro manages this process was not filed
- has required considerable interrogatory efforts:
  - Kinetrics – II-53
  - Weighting and Parameters – II-52
  - Distribution Study 2012 – Coalition Exhibit
  - Risk Analysis – Coalition/MH-II-49
- interested in seeing buildings budget - because ample investment in buildings is a bit of a *non-sequitar* in an investment allegedly driven by performance objectives

Transmission issues

- while we have focused on distribution and buildings – we note other issues – with transmission:
  - transmission made a big deal about turnover rates being too slow but when asked to substantiate its calculation in information requests and oral questioning was unable to do so
    - 9 Coalition 1-Request 88(d); Tr, May 29, 2015, pgs 1299 – 1301)
  - transmission has not adopted the Kinetrics recommendation in terms of upgraded steel structure investigations despite the multi-billion dollar value of that asset ultrasonic inspections of buried footings or steel structure climbing inspections)
    - (Tr, May 29, 2015, pgs 1242 – 1244)

The evidence of robust pacing and prioritization is modest

- We know that Hydro was asked to provide examples of how it examined different expenditure scenarios between different lines of business (Undertaking 26) – to our knowledge a response has not been filed
  - UNDERTAKING NO. 26: Manitoba Hydro to examine the records that may reflect deliberations in terms of alternatives canvassed with regard to sustaining capital expenditures, both in terms of their magnitude and their mix

The evidence of robust pacing and prioritization is modest (cont'd)

- We know that Hydro filed Budgets in IFF11-2, 12, 13 that were significantly lower
  - PUB 1 – 19 g)
- We know that Hydro would never put the business operations of its units at material risk

A pitch without a plan

- We have not been provided an adequate explanation of:
  - the optimization process
  - the types of alternatives considered
  - how such a major increase was granted to distribution given the quality of its analysis
  - what the anticipated performance outcomes might be expected to be
- At this very late date, we still have a Pitch without a Plan

What do we know about Hydro systems performance?

- We know that Hydro continues to rank in top quartile in distribution performance: drop in top quartile – in SAIFI and SAIDI (distribution metrics)
  - The investment in electric infrastructure that Manitoba Hydro has made over decades has resulted in one of the most reliable, sustainable and affordable power systems in Canada. The following figures show that Manitoba Hydro has historically been in the first quartile of CEA member utilities as it relates to the System Average Interruption Frequency Index ("SAIFI") and the System Average Interruption Duration Index ("SAIDI") reliability indicators, on a calendar year
    - (Tab 2, pg 8)
- We know that larger generation assets on Nelson River continue to perform above the Canadian average but smaller units perform worse
  - (Coalition/MH 1 – 37 a); see also Tr, Mr. Read, May 29, 2015, pgs. 1355-1356)

What do we know about Hydro systems performance? (cont'd)

- We know that 2012 was a relatively bad year but that a significant element was weather and that the performance chart displayed by Hydro is not weather adjusted
  - (Coalition/MH-1-87 b)

How can a determination be made of the prudence of its investments?

- This is not to suggest that sustaining capital expenditures should be decimated
- But Hydro has been aware of its obligation to prove its expenditures in this regard since 2004
- It was first asked to produce AH assessment in 2008
- It has potential access to some of the best minds in the business
- Yet it comes unprepared to substantiate either its base expenditures of $470 M (2013/14) or the very significant growth in 2014/15

Hydro would never willingly put reliability at risk

- MR. BYRON WILLIAMS: Ms. Bauerlein, the Corporation would never put its business unit leaders in a position where they felt they couldn't manage the risk, would it

  (BRIEF PAUSE)

  MS. SANDY BAUERLEIN: Correct. The Corporation would not -- decisions that they make ensure -- it's not that really the Corporation – that the ratepayers -- the -- the Mani -- Man -- people of Manitoba, that the reliability that they expect to -- to have or -- is -- is what we can deliver on, balancing, again, that financial risk, the financial constraints.

  MR. BYRON WILLIAMS: And -- and you would never present, as a Corporation, a CEF, being capital expenditure forecast, that, in your judgment, put the risk of the public in peril, would you?

  MS. SANDY BAUERLEIN: Correct.

  MR. BYRON WILLIAMS: So when you presented CEF13, that was it -- with confidence that that was the best balance for that particular time, agreed?

  MS. SANDY BAUERLEIN: When we presented CEF13 or CEF14, at those points in time, that would be with the confidence and understanding at that point in time.

  MR. BYRON WILLIAMS: And presumably that would have been the case with CEF12, as well?

  MS. SANDY BAUERLEIN: With the information that we have available at that point in time, we make the best business decision, and the best decision for the ratepayers of Manitoba.

  - (Tr, May 29, 2015, pgs 1369 – 1371)

- **both distribution study and Kinetrics 2012 available to Hydro when IFF13 prepared**

- **Appendix 4.2 (methodology transmission, makes reference to third party consultant)**

RECOMMENDATION 3

- the Board should find that it is unable to conclude whether the proposed magnitude of investment in sustaining capital in fiscal 2014/15 and fiscal 2015/16 is prudent and reasonable
- Manitoba Hydro should be directed to provide a robust asset health assessment and robust capital asset management strategy for the next general rate application
- Manitoba Hydro should be directed to report the outcomes of any third party capital asset assessment on a timely basis for the next GRA

RECOMMENDATION 3 (cont'd)

Recommended filing requirements:

- In order to facilitate the review of future capital spending, the Board should impose a standard set of filing requirements on the Company for future GRAs in order to ensure that the Company's asset management process is transparent and readily understandable. These requirements should include, but not be limited to, the following:
  - A) <u>Asset Management Inputs</u>: Company should specifically list, quantify and fully explain how each risk, performance and budget target used in its asset management process was developed and employed. While the current GRA to a certain extent, and some discovery responses, provide glimpses and high-level discussion of some of these inputs, what is lacking is a cohesive narrative in the GRA with sufficient detail to specify how the trade-offs between each input variable was worked out by the Company and why. The Company filing should also include the alternative spending scenarios considered in the process and all supporting workpapers.

RECOMMENDATION 3 (cont'd)

- B) <u>Asset Management Flow Chart and Timeline</u>: The Company should provide a flow chart which depicts each department and working group within MH that contributes to the asset management process, and a timeline depicting when information from those departments and groups are considered in the resulting operations, capital and maintenance plans.

- C) <u>Asset Health Index</u>: The Company should file the complete AHI for each asset class, the variables used in each index, the weights assigned to each index variable and a discussion with supporting analysis explaining any change in variables or weightings used in the last GRA.

- D) <u>Asset Management Outputs</u>: The Company should file copies of the actual capital, operations and maintenance plans that resulted from the asset management process on a standardize basis from year to year. For the proposed spending in each asset class, including Sustaining Capital Expenditures, the Company should identify and discuss related operational considerations and the maintenance plan (including maintenance costs), associated with the asset class with sufficient detail to justify the expenditure as contributing to a least cost and reliable solution for customers

RECOMMENDATION 3 (cont'd)

- E) Models: Each model used by the Company in the asset management process should be identified by name and its use in the process described in detail, including how the model considers the AHI. To the extent that the models represent propriety information of third parties, the access to the models and information about parameters used in the modeling should be provided on a confidential basis, including through workshops or vendor presentations.

- F) Engineering Reports: The Company should file any internal or third party engineering reports, capital asset failure root cause analyses and asset management assessments performed since the last GRA.

These filing requirements should greatly increase the efficiency of future GRA proceedings by enabling the Board and interveners a better line of sight into the heart of the asset management process, and consequently may reduce the amount of discovery and resulting regulatory burden on the Company. For the most part, the filing requirements simply document the asset management process the Company should have already undertaken, or seeks reports or other information the Company already has on the shelf

Is it within the PUB's jurisdiction to implement pay assistance programming?

- The Public Utilities Board derives its power from statute
- All powers of the PUB must:
  - be found in its enabling statute
  - or exist by way of necessary implication from the wording of the statute

Is it within the PUB's jurisdiction to implement pay assistance programming? (cont'd)

- *The Crown Corporations Review and Accountability Act; The Manitoba Hydro Act*; *The Public Utilities Board Act*
  - Section 26(4) of *The Crown Corporations Review and Accountability Act* states
    - **In reaching a decision pursuant to this Part, The Public Utilities Board may**
      - (a) take into consideration
        - (viii) **any compelling policy considerations that the board considers relevant to the matter**
        - **(ix) and any other factors that the board considers relevant to the matter.**

Is it within the PUB's jurisdiction to implement pay assistance programming? (cont'd)

- Broad language of Act consistent with findings in *Advocacy Centre for Tenants-Ontario and Income Security Advocacy Centre v Ontario Energy Board*, 2008 CanLII 23487 (On S.C.D.C.), para 61:
  - *In our view, and we so find, the Board has the jurisdiction to take into account the ability to pay in setting rates. We so find having taken into account the expansive wording of s. 36 (2) and (3) of the statute and giving that wording its ordinary meaning, having considered the purpose of the legislation within the context of the statutory objectives for the Board seen in s. 2, and being mindful of the history of rate setting to date in giving efficacy to the promotion of the legislative purpose.*