

MANITOBA HYDRO  
2017/18 & 2018/19 GRA

EVIDENCE OF WILLIAM HARPER  
ECONALYSIS CONSULTING

PREPARED FOR THE  
“CONSUMERS COALITION”

JANUARY 17, 2018

# PURPOSE OF EVIDENCE

- FINANCIAL OUTLOOK
  - CLAIM RE: “SIGNIFICANT” DETERIORATION
- REGULATORY ASSETS
  - ROLE/PURPOSE -> MH USE
  - MANITOBA HYDRO’S SPECIFIC REQUESTS
- COST OF SERVICE STUDY
  - IMPLEMENTATION OF ORDER 164/16
  - ROLE OF COSS IN CURRENT GRA
- RESIDENTIAL RATE DESIGN
  - CONSERVATION / ELECTRIC HEAT / LOW INCOME RATES

# CHANGE IN FINANCIAL OUTLOOK

## MANITOBA HYDRO'S APPLICATION:

“Since the last GRA the financial outlook of MH has deteriorated significantly” (Tab 2, page 3)

## APPROACH

### •SCOPE

- RESULTS TO DATE (2016/17)
- USE MH15 RATE PLAN – FOCUS ON IFF16 (BASIS FOR INITIAL APPLICATION)
- LOOK AT IMPLICATIONS OF IFF16UPDATE/INTERIM AND 20 YEAR WATM @ MH15 RATE PLAN

### •RELIED ON MH'S FORECASTS (NO JUDGEMENT)

# CHANGE IN FINANCIAL OUTLOOK

## APPROACH (CONT.)

- RELIED MAINLY ON MH'S FINANCIAL METRICS
  - DEBT/EQUITY RATIO
  - EBITDA
  - LOOK AT A BROADER CAPITAL COVERAGE MEASURE (CASH FROM OPERATIONS LESS CAPEX)
- WHAT IS A SIGNIFICANT DETERIORATION?
  - > ON BALANCE ARE METRICS OUT OF LINE WITH PAST IFFS & IS A MATERIALLY DIFFERENT RATE PLAN NEEDED

# PREVIOUS OUTLOOKS KEY RESULTS

	NFAT – PLAN 5 @ 2X DSM (IFF13)		2015/16 & 16/17 GRA (IFF 14)		2016/17 INTERIM RATES (IFF15)	
Annual Rate Incr.	2015	3.95%	2016->31	3.95%	2017->29	3.95%
	2016->32	3.74%	2032 ->	2.0%	2030 ->	2.0%
Maximum Debt %	92%		90%		88%	
Debt @ 75% in	2032		2034		2032	
EBITDA (Avg.)						
2018-19			1.44		1.49	
2018-27	N/A		1.45		1.62	
2018-34			1.47		1.74	
Overall Capital Coverage (Avg-\$M)						
2018-19	-\$1,361		-\$2,209		-\$2,029	
2018-27	-\$ 324		-\$ 608		-\$ 454	
2018-34	-\$ 36		-\$ 107		\$ 29	

# CHANGE IN FINANCIAL OUTLOOK

## 2015-2017 CUMULATIVE RESULTS

ITEM	IFF14	IFF15	ACTUAL RESULTS
Revenues (\$ M)	\$ 5,767	\$ 5,715	\$ 5,595
Expenses (\$ M) (incl. Net Movm't)	\$ 5,534	\$ 5,607	\$ 5,464
Net Income (\$ M) (excl. NC)	\$ 276	\$ 139	\$ 185
EBITDA (\$M - Avg.)	1.69	1.60	1.59
Overall Capital Coverage (\$M-Avg.)	-\$1,945	- \$1,969	-\$1,728
Debt Ratio (2017)	84%	85%	84%
Retained Earnings (2017)	\$2,837 M	\$2,641 M	\$2,749 M

Conclusion: Interest Coverage Slightly Off/Capital Coverage Improves  
Debt Ratio in Line  
-> No Significant Deterioration Evident

## MH EXHIBIT #64 - SLIDE #44

MH CLAIM: NET INCOME RESULTS NEED TO BE NORMALIZED:

- BP III INTEREST CAPITALIZATION RATE > NEW DEBT RATE
- HIGHER THAN AVERAGE WATER FLOWS
- NON-RECURRING GAIN
- RESTRUCTURING COSTS

RESPONSE -> PROPOSED NORMALIZATION INAPPROPRIATE

- INT. CAP RATE NOT “ADJUSTED” PREVIOUSLY
- IMPLICATIONS OF PAST RESULTS NOT ADJUSTED FOR AVERAGE WATER
- INCONSISTENT WITH RATE SETTING PLAN GOING FORWARD -> REFLECT CURRENT CIRCUMSTANCES

# CHANGE IN FINANCIAL OUTLOOK

## 2017/18 & 2018/19 CUMULATIVE RESULTS

ITEM	IFF14	IFF15	IFF16 @ 3.95%
Revenue (\$ M)	\$ 4,323	\$ 4,311	\$ 4,141
Expenses (\$ M) (Incl. Net Movm't)	\$ 4,361	\$ 4,297	\$ 3,969
Net Income (\$ M) – (Excl NC)	- \$ 26	\$ 22	\$ 182
EBITDA (\$M - Avg.)	1.44	1.49	1.58
Overall Capital Coverage (\$M-Avg.)	- \$2,209	- \$2,029	- \$ 2,644
Debt Ratio (2019)	86%	87%	86%
Retained Earnings (2019)	\$2,812 M	\$2,663 M	\$2,912 M

Conclusion: Interest Coverage Improves/Capital Coverage Deteriorates  
 Debt Ratio in Line  
 -> No Significant Deterioration Evident



# CHANGE IN FINANCIAL OUTLOOK

## 2017/18 - 2026/27 CUMULATIVE RESULTS

ITEM	IFF14	IFF15	IFF16 @ 3.95%
Revenue (\$ M)	\$ 28,702	\$ 29,028	\$ 26,489
Expenses (\$ M) (Incl. Net Movm't)	\$ 29,544	\$ 28,443	\$ 25,584
Net Income (\$ M) – (Excl NC)	- \$ 830	\$ 578	\$ 903
EBITDA (\$M - Avg.)	1.45	1.62	1.67
Overall Capital Coverage (\$M-Avg.)	- \$ 608	- \$ 454	- \$ 766
Debt Ratio (2027)	90%	86%	86%
Retained Earnings (2027)	\$2,007 M	\$3,219 M	\$3,632 M

Conclusions: Conclusion: Interest Coverage Improves/Capital Coverage Deteriorates  
Debt Ratio in Line  
-> No Significant Deterioration Evident

# CHANGE IN FINANCIAL OUTLOOK

## 2017/18 – 2033/34 CUMULATIVE RESULTS

ITEM	IFF14	IFF15	IFF16 @ 3.95%
Revenue (\$ M)	\$ 56,266	\$ 55,891	\$ 51,028
Expenses (\$ M) (Incl. Net Movm't)	\$ 53,470	\$ 51,045	\$ 47,299
Net Income (\$ M) – (Excl NC)	\$ 2,725	\$ 4,760	\$ 3,666
EBITDA (\$M - Avg.)	1.71	1.88	2.00
Overall Capital Coverage (\$M-Avg.)	- \$ 107	\$ 29	- \$ 217
Debt Ratio (2034)	75%	69%	75%
Retained Earnings (2034)	\$5,557 M	\$7,402 M	\$6,395 M

Conclusions: Interest Coverage Improves / Capital Coverage Deteriorates  
 Debt Ratio in Line  
 -> No Significant Deterioration

# CONCLUSIONS RE: IFF16 (@MH15 RATES)

## OVER ALL THREE PERIODS CONSIDERED

- INTEREST COVERAGE IMPROVES VS. PREVIOUS IFFS
- CAPITAL COVERAGE DETERIORATES VS. PREVIOUS IFFS
- DEBT RATIO IN LINE WITH PREVIOUS IFFS

-> NO SIGNIFICANT DETERIORATION IN FINANCIAL OUTLOOK

# POST-APPLICATION UPDATE

	IFF 14		IFF 15		IFF16 – UPDATE WITH INTERIM @ MH 15 INCREASES	
Annual Rate Incr.	2016->31 2032 ->	3.95% 2.0%	2017->29 2030 ->	3.95% 2.0%	2018->29 2030 ->	3.95% 2.0%
Maximum Debt %	90%		88%		88%	
Debt @ 75% in	2034		2032		After 2036	
EBITDA (Avg.)						
2018-19	1.44		1.49		1.59	
2018-27	1.45		1.62		1.61	
2018-34	1.47		1.74		1.76	
Overall Capital Coverage (Avg-\$M)						
2018-19	-\$2,209		-\$2,029		-\$2,613	
2018-27	-\$ 608		-\$ 454		-\$ 842	
2018-34	-\$ 107		\$ 29		-\$ 321	

# ECS EVIDENCE - CONCLUSIONS

- UPDATED OUTLOOK HAS DETERIORATED
  - BOTH DEBT RATIO AND CAPITAL COVERAGE NOW OUT OF LINE WITH PREVIOUS FORECASTS
- HOWEVER, EXTENDING 3.95% INCREASES TO 2033/34 ALLOWS FOR ACHIEVEMENT OF 75% DEBT RATIO BY 2034/35 (COALITION/MH II-7 A))
- UPDATE DOES NOT REPRESENT A SIGNIFICANT CHANGE IN FINANCIAL OUTLOOK.

# ECS EVIDENCE CONCLUSIONS

- KEY DRIVERS
  - DOMESTIC LOAD FORECAST – PARTICULARLY TOP CONSUMERS
  - EXPORT PRICES – PARTICULARLY AFTER KEYASK IN-SERVICE DATE
  - INTEREST RATE FORECASTS
  - OPERATING & ADMINISTRATIVE COST REDUCTIONS
  - CAPITAL SPENDING

# MANITOBA HYDRO REBUTTAL

MH: COMPARISONS OF IFF15 vs. IFF16 NEED TO ACCOUNT FOR KEEYASK IN-SERVICE DELAY AND RECENT UPDATES

RESPONSE: -> DISAGREE

- NUMBER OF INPUTS UPDATED AND POLICIES CHANGED FOR IFF16:
  - INCONSISTENT TO SINGLE OUT KEEYASK TIMING
- CONCLUSIONS REGARDING FINANCIAL OUTLOOK SHOULD REFLECT CURRENT CONDITIONS AND EXPECTED CHANGES
- “UPDATE” NOT COMPREHENSIVE – ONLY ACCOUNTS FOR LOWER WATER/EXPORT PRICES

# POST-EVIDENCE UPDATES

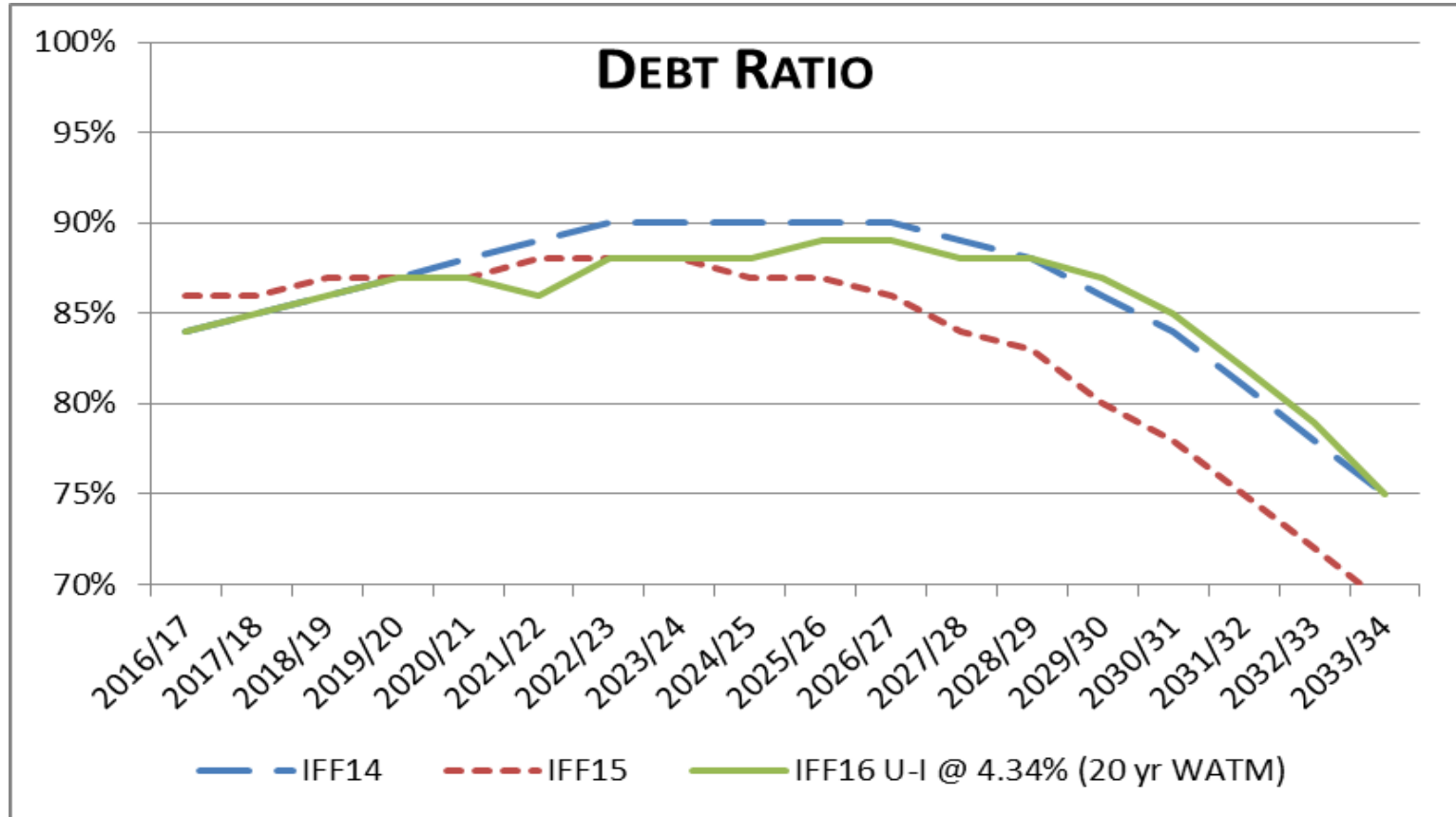
	IFF 14		IFF 15		IFF16 – UPDATE WITH INTERIM @ MH 15 INCREASES & 20 YEAR WATM	
Annual Rate Incr.	2016->31 2032 ->	3.95% 2.0%	2017->29 2030 ->	3.95% 2.0%	2018->29 2030 ->	3.95% 2.0%
Maximum Debt %	90%		88%		90%	
Debt @ 75% in	2034		2032		After 2036	
EBITDA (Avg.)						
2018-19	1.44		1.49		1.57	
2018-27	1.45		1.62		1.59	
2018-34	1.47		1.74		1.69	
Overall Capital Coverage (Avg-\$M)						
2018-19	-\$2,209		-\$2,029		-\$2,621	
2018-27	-\$ 608		-\$ 454		-\$ 891	
2018-34	-\$ 107		\$ 29		-\$ 370	



# CONCLUSIONS

- UPDATED OUTLOOK HAS DETERIORATED FURTHER
- BOTH DEBT RATIO AND CAPITAL COVERAGE INCREASINGLY OUT OF LINE WITH PREVIOUS FORECASTS
- HOWEVER ANNUAL INCREASES OF 4.34% ALLOWS ACHIEVEMENT OF 75% DEBT RATIO IN 2033/34 (MH EXHIBIT 80)
- CHANGE IN OUTLOOK NOT SUFFICIENT TO SUPPORT 7.9% PLAN

# CHANGE IN FINANCIAL OUTLOOK



# REGULATORY ACCOUNTS

- COMMON WITH REGULATED UTILITIES
- USED TO:
  - PROMOTE INTER-GENERATIONAL EQUITY
  - ADDRESS FORECAST UNCERTAINTY\*
  - SMOOTH RATE INCREASES
  - TO RECOVER/REFUND COSTS OR REVENUES ATTRIBUTABLE TO UNFORESEEN EVENTS\*
  - TO OFFSET ACCOUNTING PROVISIONS

\* MORE APPLICABLE IN RATE OF RETURN OR INCENTIVE REGULATION

# MH'S REGULATORY ACCOUNTS

## PREVIOUS GRAs

ACCOUNT	PURPOSE	TREATMENT	ECS COMMENTS
POWER SMART PROGRAM COSTS	INTERGENERATIONAL EQUITY	AMORTIZE OVER 10 YEARS ALA OTHER CANADIAN UTILITIES	REASONABLE - IDEALLY SHOULD MATCH MH DSM PROGRAM LIFE
SITE RESTORATION	SMOOTH RATES RE ONE-TIME COSTS	15 YEARS	REASONABLE - MATTER OF JUDGEMENT
REGULATORY	INTERGENERATIONAL EQUITY	VARIES BY PROCEEDING	REASONABLE – MATCHES BENEFIT
WINNIPEG ACQUISITION COSTS	INTERGENERATIONAL EQUITY	30 YEARS	REASONABLE – CLOSE TO REMAINING ASSET LIVE
AFFORDABLE ENERGY	ACCOUNT FOR LEGISLATED FUND	AMORTIZE AS SPENT	REASONABLE – MATCHES SPEND
DEFERRED DSM COSTS	FORECAST UNCERTAINTY	NOT CURRENTLY AMORTIZED	WILL NEED TO BE ADDRESSED

# MH'S REGULATORY ACCOUNTS CURRENT PROPOSALS

ACCOUNT (2018/19 ADDITIONS)	PURPOSE	PROPOSED TREATMENT	ECS RECOMMENDATION
LOSS ON DISPOSAL OF ASSETS (N/A)	RATE SMOOTHING RE ONE-TIME COSTS	20 YEAR AMORTIZATION	ACCEPT – MIRRORS PREVIOUS TREATMENT
INELIGIBLE OVERHEADS (\$20 M)	RATE SMOOTHING / INTERGENERATIONAL EQUITY	20 YR AMORTIZATION VIA NET INCOME & CEASE DEFERRAL AFTER 2022/23	ADOPT PUB DIRECTED TREATMENT (30 YEARS WITH NO CESSATION) BUT VIA NET INCOME
ELG/ASL DEPRECIATION DIFFERENCE (\$40 M)	INTERGENERATIONAL EQUITY	20 YR AMORTIZATION VIA NET INCOME & CEASE DEFERRAL AFTER 2022/23	NO AMORTIZATION PENDING MH REPORT AND RESOLUTION OF ELG VS. ASL USE ISSUE
CONAWAPA (\$380 M – IN 2019/20)	RATE SMOOTHING / INTERGENERATIONAL EQUITY	30 YR. AMORTIZATION	ACCEPT – SIGNIFICANT \$ / REFLECTS STUDY PERIOD

# RELEVANCY OF BC AUDITOR'S REPORT

## MANITOBA HYDRO CITATION (MIPUG MFR 5)

*p. 13 “While deferral accounts can be helpful in ensuring rate stability in the near term, over the long term significant costs deferred today may be unfairly passed on to future ratepayers who receive little or no benefit. This concept of a potential unequal matching of costs and benefits is known as intergenerational inequity.”*

UTILITY	Net RA (\$M)	Total Assets (\$M)	RA/ Total
BCH (2017)	5,597	31,888	17.6%
HQ (2016)	3,979	75,167	5.3%
OPG (2016)	5,455	44,372	12.5%
NALCOR	-184	14,062	-1.3%
MH (2017)	489	22,338	2.2%
MH (2035 Att 28)	1,888	35,560	5.3%

# RELEVANCY OF BC AUDITOR'S REPORT

BC AUDITOR'S ISSUE	MANITOBA HYDRO
PROTRACTED RECOVERY OF COST VARIANCE ACCOUNTS	LIMITED USE OF COST VARIANCE ACCOUNTS
REG. ASSETS ATTRACT INTEREST -> INCREASES REPORTED NET INCOME	ONLY AEF ACCOUNT (2016/17 - \$4 M BALANCE) ATTRACTS INTEREST
CURRENT RECOVERY < INTEREST ACCRUAL	ONLY AEF ACCOUNT ATTRACTS INTEREST

# COST OF SERVICE STUDY

## ORDER 164/16 – KEY TAKE AWAYS

- COST CAUSATION IS THE SOLE PRINCIPLE THAT SHOULD BE USED IN ESTABLISHING THE APPROPRIATE COSS METHODOLOGY.
- THE RESULTS OF THE COST OF SERVICE STUDY DO NOT DEFINE THE REVENUE REQUIREMENT BY CUSTOMER CLASS FOR RATE SETTING PURPOSES



# COST OF SERVICE STUDY

## ORDER 164/16 – KEY TAKE AWAYS (Cont.)

- THERE IS NO GENERALLY ACCEPTED INDUSTRY STANDARD
- RESULTS ARE NOT ARITHMETICALLY PRECISE
- PRACTICAL MATTERS SUCH AS ACCEPTABILITY AND UNDERSTANDABILITY ALSO COME INTO PLAY.

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# COST OF SERVICE STUDY ORDER 164/16 IMPLEMENTATION

- MANITOBA HYDRO GENERALLY FOLLOWED ORDER 164/16 IN PREPARING PCOSS18
- AREAS OF DEPARTURE BASED ON LACK OF DATA OR SIMPLIFYING ASSUMPTIONS
- STRICT INTERPRETATION OF BOARD DIRECTIVES VS. PRINCIPLE OF “COST CAUSATION”
  - WIND ENERGY
  - ALLOCATION OF EXPORT REVENUES
  - RADIAL LINES
  - GENERATION OUTLET TRANSMISSION
- CLEAR TIME LINES NEEDED FOR OUTSTANDING STUDIES

# COST OF SERVICE STUDY REVENUE TO COST RATIOS

- CALCULATION ISSUES
  1. INCLUSION OF ADDITIONAL RATE INCREASE REVENUES
    - PREFERENCE IS TO INCLUDE - MATTER OF JUDGEMENT
  2. NET EXPORT REVENUES: REVENUE OR COST OFFSET
  3. OTHER REVENUES: REVENUE OR COST OFFSET
    - BOTH LARGELY MATTER OF JUDGEMENT – CONSISTENCY IMPORTANT
  4. INCLUDE OR EXCLUDE NET EXPORT REVENUE
    - INCLUDE - – EXPORTS INTEGRAL AND SIGNIFICANT PART OF MH'S OPERATIONS AND PLANNING

# COST OF SERVICE STUDY ZONE OF REASONABLENESS

## RECOGNIZES THAT:

- NO INDUSTRY STANDARD FOR COSS METHODOLOGY
- COSS INVOLVES JUDGEMENTS AND SIMPLIFICATIONS
- DATA USED IS IMPRECISE

## PURPOSE:

- ESTABLISHES A RANGE WITHIN WHICH RATES VIEWED AS RECOVERING COST TO SERVE
- DOES NOT ESTABLISH RANGE FOR REVENUES FROM APPROVED RATES FOR RATE MAKING PURPOSES

# CANADIAN UTILITY COSS – ZONES OF REASONABLENESS

Regulator	Utility	R/C Ratio Range of Reasonableness
Yukon Utilities Board	Yukon Energy Corporation	90% - 110%
British Columbia Utilities Commission	BC Hydro	95% - 105%
	FortisBC Inc.	95% - 105%
Alberta Utilities Commission	Atco Electric	95% - 105%
Ontario Energy Board	Electric Distribution Utilities	Varies by customer class from 70%-120% to 85%-115%
New Brunswick Energy and Utilities Board	New Brunswick Power Corporation	95% - 105%
Nova Scotia Utility and Review Board	Nova Scotia Power	95% - 105%
Island Regulatory and Appeals Commission	Martime Electric	90% - 110%
Newfoundland & Labrador Board of Commissioners of Public Utilities	Newfoundland Power	90% - 110%

# RATE MAKING OBJECTIVES

MANITOBA HYDRO	BONBRIGHT
RECOVER REVENUE REQUIREMENT (i)	YIELD REVENUE REQUIREMENT (iii) REVENUE STABILITY YEAR TO YEAR (iv)
FAIRNESS AND EQUITY (ii)	FAIRNESS IN APPORTIONMENT OF TOTAL COSTS (vi) AVOID UNDUE DISCRIMINATION (vii)
RATE STABILITY AND GRADUALISM (iii)	STABILITY OF RATES/MINIMUM UNEXEPECTED CHANGES (v)
EFFICIENCY (iv)	EFFICIENCY – DISCOURAGE WASTE / PROMOTE JUSTIFIED USES (viii)
COMPETITIVENESS IN RATES (v)	
SIMPLICITY AND UNDERSTANDABILITY (vi)	SIMPLICITY, UNDERSTANDING, FEASIBLE (i) NO CONTROVERSY RE INTERPRETATION (ii)
	PUBLIC ACCEPTABILITY (i)

# OTHER RATE MAKING CONSIDERATIONS FOR CURRENT GRA

- RATE STABILITY AND GRADUALISM
  - AVERAGE REQUESTED INCREASE 4X RATE OF INFLATION
- EFFICIENCY
  - CHANGES IN MARGINAL COSTS
- PUBLIC POLICY/PUBLIC ACCEPTABILITY
  - IMPACTS ON LOW INCOME CUSTOMERS
  - IMPACTS ON ELECTRIC HEAT CUSTOMERS (NON-GAS)
  - IMPACT OF UNIFORM RATE REQUIREMENTS

# REVENUE VS. MARGINAL COST UPDATE

Schedule 23 - Updated	MARGINAL COSTS VS. AVERAGE REVENUE COMPARISON											Revenue/ Marginal Cost			
	Marginal Cost				Class	Marginal Cost - Trans. & Distr @				Avg.	Rev.				
	(cents/kWh @ 100% Load Factor)				Load	Class Load Factor (cents/kWh)				(cents/kWh)					
	Gen.	Trans.	Distr.	Total	Factor	Gen.	Trans.	Distr.	Total						
Residential	4.39	0.57	0.78	5.74	51%	4.39	1.11	1.52	7.03	8.82	125.5%	8.071565	1.092725		
General Service -SND	4.39	0.57	0.78	5.74	62%	4.39	0.91	1.25	6.55	9.3	141.9%	7.212336	1.289457		
General Service-SD	4.39	0.57	0.78	5.74	67%	4.39	0.85	1.17	6.41	7.66	119.4%	6.960959	1.100423		
General Service-M	4.39	0.57	0.78	5.74	73%	4.39	0.78	1.07	6.24	6.83	109.5%	6.640135	1.028594		
GSL 0-30	4.39	0.57	0.78	5.74	83%	4.39	0.69	0.94	6.03	5.77	95.8%	6.256749	0.922204		
GSL 30-100	4.23	0.55	0	4.78	92%	4.23	0.60	0.00	4.83	4.93	102.2%	4.912036	1.003657		
GSL>100	4.23	0.55	0	4.78	94%	4.23	0.58	0.00	4.81	4.46	92.7%	4.878352	0.914243		

Sources: GAC/MH 11-24 b) -Updated and PUB/MH I-57 (R)  
Appendix 8.1, Schedule 5.3 - for usage data to calculated class load factors  
PUB/MH 135 - for Average Revenue values

Note: Revised Marginal Trans. And Distr. Marginal based on class load factor calculated by dividing values based on 100% by the class load factor

- ADDITIONAL CONSIDERATIONS**
- NO LOAD FACTOR ADJUSTMENT FOR GENERATION CAPACITY COSTS
  - NO DIFFERENTIATION OF ENERGY COSTS BY TIME OF USE
  - NO ALLOWANCE FOR ENVIRONMENTAL COSTS



# RESIDENTIAL RATE DESIGN CONSERVATION (INVERTED) RATES

## KEY CONSIDERATIONS

- CONSERVATION VS. EFFICIENT USE
- CURRENT RESIDENTIAL MARGINAL COSTS < ENERGY RATE
- FUTURE RATE INCREASES > INFLATION

➤ CURRENTLY NO BASIS FOR CONSERVATION RATES

# RESIDENTIAL RATE DESIGN

## ELECTRIC HEAT RATES

### KEY OBSERVATIONS

- COST OF SERVICE
    - ELECTRIC HEAT (90.1%) VS. NON-HEAT (103.7%)
  - MARGINAL COSTS
    - ELECTRIC HEAT > NON-HEAT
  - PUBLIC INTEREST/PUBLIC ACCEPTABILITY
- JUSTIFICATION RESTS ON PUBLIC POLICY/ACCEPTABILITY CONSIDERATIONS

# ELECTRIC HEAT RATES

## RATE DESIGN CONSIDERATIONS

- FORM:
  - FIXED VS. PROPORTIONAL DISCOUNT
  - UNIFORMITY
- WHEN:
  - JUST WINTER MONTHS VS. ALL YEAR
  - CALENDAR VS. BILLING CYCLE
- COST RECOVERY
  - ACCEPTABLE AMOUNT
  - RESIDENTIAL VS. ALL CUSTOMERS
- FURTHER RESEARCH REQUIRED TO ESTABLISH ACCEPTABLE AND WORKABLE DESIGN
- BOARD DIRECTION ON PREFERENCES WOULD FOCUS EFFORTS

# RESIDENTIAL RATE DESIGN

## LOW INCOME RATES

### GENERAL CONSIDERATIONS

- COST OF SERVICE
- EFFICIENCY
- IMPLEMENTATION
- PUBLIC ACCEPTABILITY

➤ JUSTIFICATION RESTS ON PUBLIC POLICY/ACCEPTABILITY  
CONSIDERATIONS

# LOW INCOME RATES

## RATE DESIGN CONSIDERATIONS

- DEFINITION OF LOW INCOME
  - MERIT IN STANDARD DEFINITION
  - EASE OF APPLICATION
- FORM:
  - FIXED VS. PROPORTIONAL DISCOUNT
- COST RECOVERY
  - ACCEPTABLE AMOUNT
  - RESIDENTIAL VS. ALL CUSTOMERS
- FURTHER RESEARCH REQUIRED TO ESTABLISH ACCEPTABLE AND WORKABLE DESIGN
- BOARD DIRECTION ON PREFERENCES WOULD FOCUS EFFORTS

# RATE SHOCK

- ULTIMATE FOCUS SHOULD BE ON OVERALL BILL IMPACT
  - BILL IMPACT THE SAME WHETHER INCREASE COMES FROM A GRA, COSS ADJUSTMENT OR RATE DESIGN
- NO SINGLE STANDARD FOR RATE SHOCK
  - INFLATION
  - PAST EXPERIENCE
  - (PERCEIVED) REASON FOR INCREASE