

EFFICIENCY MANITOBA 2020-2023 EFFICENCY PLAN

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OUTLINE

- SCOPE
- CONTEXT
- ISSUE #1 – EM APPROACH TO PORTFOLIO DEVELOPMENT
- ISSUE #2 – COST EFFECTIVENESS/CUSTOMER IMPACT METRICS
- ISSUE #3 – ALLOCATION OF OVERHEADS/SUPPORT COSTS
- CONCLUSIONS

SCOPE OF EVIDENCE

- PUB ISSUE 1 c. - Appropriateness of the methods to select or reject demand-side management initiatives.
- PUB ISSUES 2 a. - Reasonableness of methodology to evaluate cost-effectiveness and 2 d. - Rate impact and customer bill impacts for both participants and non participants and whether the bill impacts are reasonable
- PUB ISSUE 2 e. - Reasonableness of Efficiency Manitoba's ... apportionment of Efficiency Manitoba's overhead costs not specifically related to gas initiatives and electric initiatives – limited to 2020/21 to 2022/23 planning horizon

CONTEXT

NFAT DECISION & EM ACT/REGULATION

NFAT DECISION

- The NFAT Review demonstrated that DSM measures were not equally weighted with other energy options.
- In its resource planning, Manitoba Hydro added DSM to each alternative plan it examined. By doing this, Manitoba Hydro effectively screened out DSM as an independent resource to be evaluated against other generation resources.
- Integrated resource planning become a cornerstone of a new clean energy strategy for the Province of Manitoba
- Best practices for integrated resource planning involve placing every conceivable resource option on an equal footing
- The planning and provision of DSM services should be divested from Manitoba Hydro

CONTEXT

NFAT DECISION & EM ACT/REGULATION

EM ACT

- SETS OUT EM MANDATE
 - Implement and support demand-side management initiatives to meet the savings targets and achieve any resulting reductions in greenhouse gas emissions in Manitoba
 - Achieve additional reductions in the consumption of electrical energy or natural gas — including resulting reductions in the demand for electrical power — if the reductions can be achieved in a cost-effective manner
 - Mitigate the impact of rate increases and delay the point at which capital investments in major new generation and transmission projects will be required by Manitoba Hydro to serve the needs of Manitobans
- DEFINES SCOPE FOR “DSM INITIATIVES”
- SETS TARGETS -> LINKED TO METERED CUSTOMER SALES

CONTEXT

NFAT DECISION & EM ACT/REGULATION

EM ACT

- SETS OUT “EFFICIENCY PLAN” REQUIREMENTS
 - Plan for Meeting Targets
 - Cost Effectiveness Analysis
 - GHG Reduction Analysis
 - Assessment of Plan Benefits
- SETS OUT PUB REVIEW “CONSIDERATIONS”
 - (a) the net savings required to meet the savings targets and the plans to address any existing shortfall;
 - (b) the benefits and cost-effectiveness of the initiatives proposed in the plan;
 - (c) whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans;
- SETS OUT “OPTIONAL RECOMMENDATIONS” FOR PUB
 - (a) An increase in a savings targets if reasonably satisfied that it is in the public interest for EM to achieve additional net savings
 - (b) A decrease in the a savings target if it is reasonably satisfied that the existing savings target is not in the public interest

CONTEXT

NFAT DECISION & EM ACT/REGULATION

EM REGULATION

- FURTHER CLARIFIES SCOPE OF “DSM INITIATIVES”
- DEFINES “COST-EFFECTIVE”
 - Levelized Cost to EM vs. Levelized Marginal Value of Savings to Manitoba Hydro (PACT)
- ADDITIONAL PUB CONSIDERATIONS
 - (a) the appropriateness of the methodologies used by Efficiency Manitoba to select or reject demand-side management initiatives;
 - (b) whether the plan adequately considers the interests of residential, commercial and industrial customers;
 - (c) whether, if it is practical to do so, at least 5% of Efficiency Manitoba's budget for demand-side management initiatives is allocated to initiatives targeting low-income or hard-to-reach customers;
 - (d) whether the portfolio of demand-side management initiatives required to achieve the savings targets is cost-effective;
 - (e) If the plan includes demand-side management initiatives in excess of those required to achieve the savings targets, whether those initiatives are cost-effective

CONTEXT

NFAT DECISION & EM ACT/REGULATION

EM REGULATION

➤ ADDITIONAL PUB CONSIDERATIONS (cont)

(f) whether Efficiency Manitoba's administration budget is reasonable when compared to similar organizations;

(g) the impact of the efficiency plan on rates and average customer bill amounts;

(h) the reasonableness of the projected savings and Efficiency Manitoba's ability to meet the annual savings targets and the 15-year cumulative savings targets;

(i) Efficiency Manitoba's use of private-sector enterprises and non-governmental organizations to deliver demand-side management initiatives;

(j) whether the efficiency plan adequately considers new and emerging technologies that may be included in a future efficiency plan

CONTEXT

KEY OBSERVATIONS

EM ACT/REGULATION VS. IRP – SIMILARITIES

- OBJECTIVE/TARGET LINKED TO LOAD REQUIREMENTS
- NUMBER OF OPTIONS/ALTERNATIVES AVAILABLE
- SCOPE TO CONSIDER ALTERNATIVE LEVELS OF DSM
- ASSESSMENT INVOLVES MULTIPLE CRITERIA
- COST EFFECTIVENESS VS. LEAST COST
- PREFERRED PLAN WILL BE A COMBINATION OF OPTIONS/ALTERNATIVES

IMPLICATIONS FOR ASSESMENT OF EM APPROACH

- DEVELOPMENT OF EFFICIENCY PLAN->MICRO VERSION OF IRP
- APPROPRIATE TO CONSIDER CONFORMANCE WITH IRP PRINCIPLES

CONTEXT

IRP PRINCIPLES AND COMPONENTS

IRP PRINCIPLES

- ALL FEASIBLE OPTIONS IDENTIFIED
- ALL OPTIONS CONSIDERED BASED ON A COMMON SET OF CRITERIA
- PREFERRED PORTFOLIO REFLECTS THE BEST “BALANCE”

IRP COMPONENTS

- IDENTIFY PLAN REQUIREMENTS (I.E., RESOUCES/SAVINGS REQUIRED)
- IDENTIFY EVALUATION CRITERIA
- IDENTIFY FEASIBLE RESOURCE OPTIONS (SUPPLY, TRANSMISSION AND DSM)
- CONSTRUCT MULTIPLE “RESOURCE” PORTFOLIOS
- ASSESS ALTERNATIVE PORTFOLIOS vs. EVALUATION CRITERIA
- SELECT PREFERRED PORTFOLIO

EVALUATION OF EM APPROACH BASIS FOR TARGETS

EM APPROACH - ELECTRIC

- USED LOAD FORECAST AT GENERATION FOR PRECEDING YEAR

- ADJUSTED FOR PRIOR YEARS' PLANNED DSM
- REMOVED CODES AND STANDARDS OVERLAP
- APPLIED PRESCRIBED 1.5% SAVINGS TARGET

COMMENTS

- USE OF FORECAST VALUES REASONABLE
- FORECAST VALUES DO NOT ALIGN WITH EM ACT:
 - GENERATION VS . METER POINT
 - METERED SALES VS. TOTAL USE

- DSM ADJUSTMENTS DO NOT INCLUDE 2018/19 PLAN SAVINGS
- CODES & STANDARDS SAVINGS ADJUSTMENT MAY DOUBLE COUNT IMPACT OF FUTURE C&S

EVALUATION OF EM APPROACH

REVISED ELECTRIC TARGETS/PLAN SAVINGS

HARPER – SAVINGS TARGET

Table: PUB/Coalition 19 a) -1

<u>Determination of Reference Load Forecast (GWh)</u>				
Plan Year		<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>
Previous Year's General				
Consumer Forecast Sales ⁽¹⁾		22,917	23,199	23,420
Less - Unmetered Sales ⁽²⁾		<u>91</u>	<u>91</u>	<u>89</u>
Previous Year's Forecast				
Metered Sales		22,826	23,108	23,331
Less 2018/19 DSM ⁽³⁾				
(@meter)		315.5	315.5	315.5
Less 2019/20 DSM ⁽⁴⁾				
(@ meter)		310.6	310.6	310.6
Less EM Plan				
Cumulative Savings ⁽⁵⁾		0	331.1	674.1
(@ meter)				
Plus 2017/18 Cumulative Codes and Standards ⁽⁶⁾		<u>140</u>	<u>196</u>	<u>244</u>
(@ meter)				
Reference Electric Load		22,340	22,347	22,275
Target Savings (@1.5%)		335	335	334

HARPER – PLAN SAVINGS

Table: MIPUG/Coalition (Harper) I-1 b) - 1

<u>Plan Savings Versus Reference Load @ Meter</u>					
(GWh)					
		<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>	<u>Average</u>
DSM Savings @ Generation					
Transmission-Connected ⁽¹⁾		123.2	138.4	139.1	
Distribution-Connected		249.8	247.6	237.9	
Total ⁽²⁾		373.0	386.0	377.0	
DSM Savings @ Meter					
Transmission-Connected ⁽³⁾		112.0	125.8	126.5	
Distribution-Connected ⁽⁴⁾		219.1	217.2	208.7	
Total		331.1	343.0	335.1	
Reference Load @ Meter ⁽⁵⁾					
		22,340	22,347	22,275	
Saving @ Meter %		1.48%	1.53%	1.50%	1.51%

EVALUATION OF EM APPROACH

BASIS FOR TARGETS

EM APPROACH - GAS

- USE MOST RECENT HISTORIC ACTUAL SALES VOLUME (2017/18)
- ADJUST FOR STATUTORY EXCLUSIONS
- ADJUST FOR PLANNED DSM SAVINGS
- APPLY PRESCRIBED 0.75% SAVINGS TARGET
- PLAN SAVINGS INCLUDE INTERACTIVE EFFECTS

COMMENTS

- USE OF MOST RECENT ACTUAL SALES AND STATUTORY ADJUSTMENTS REASONABLE
- NOT EVIDENT THAT DSM ADJUSTMENTS ARE REQUIRED. IMPACT ON TARGET CALCULATION IS MINIMAL
- PUB SHOULD CONSIDER NATURAL GAS BOTH WITH AND WITHOUT INTERACTIVE EFFECTS

EVALUATION OF EM APPROACH

EVALUATION CRITERIA

EM APPROACH

– INITIAL SCREEN

- NOT APPROVED/DOES NOT MEET PERMITTING REQUIREMENTS
- MARKET TOO SMALL/FREE RIDERSHIP TOO HIGH
- SAVINGS NOT PROVEN/NEGLIGIBLE
- NO LOCAL SUPPLIERS
- TECHNOLOGY NOT SUITABLE FOR MANITOBA CLIMATE
- TECHNOLOGY IN EARLY STAGES

COMMENTS

- INITIAL SCREENING CRITERIA REASONABLE -> PRACTICAL CONSIDERATIONS / NOT OVERLY LIMITING

EVALUATION OF EM APPROACH

EVALUATION CRITERIA

EM APPROACH

- PORTFOLIO DEVELOPMENT

- KEY CRITERIA USED:
 - LEVEL OF ENERGY SAVINGS
 - PROGRAM COSTS
 - COST EFFECTIVENESS (PACT)
- AFTER THE FACT CONSIDERATIONS:
 - RATE IMPACTS
 - BILL IMPACTS
 - GHG REDUCTIONS
 - MANITOBA BENEFITS
 - LOW INCOME/HARD TO REACH BUDGET

COMMENTS

- NUMBER OF OTHER FACTORS COULD BE INCLUDED AS EVALUATION CRITERIA
- POTENTIAL CANDIDATES INCLUDE:
 - CUSTOMER RATE IMPACTS
 - MANITOBA ECONOMIC BENEFITS
 - ENVIRONMENTAL IMPACTS
 - EQUITY IMPACTS (BOTH CROSS SEGMENTS AND LOW INCOME/HARD TO REACH)

EVALUATION OF EM APPROACH OPTIONS CONSIDERED

EM APPROACH

- CANVASSED A VARIETY OF SOURCES TO IDENTIFY POTENTIAL TECHNOLOGIES/MEASURES
- 2020-2023 BUDGET INCLUDES REVISED DSM POTENTIAL STUDY

COMMENTS

- POOL OF TECHNOLOGIES AND MEASURES IDENTIFIED LIKELY REPRESENTATIVE OF THOSE AVAILABLE
- NO CENTRAL RESPOSITORY FOR OPTIONS IDENTIFIED OR CONSISTENT FORMAT FOR INFORMATION COLLECTED RAISES TRANSPARENCY AND CONSISTENCY CONCERNS
- ALTERNATIVE INCENTIVE LEVELS NOT CONSIDERED AS ALTERNATIVE OPTIONS

EVALUATION OF EM APPROACH PREFERRED PORTFOLIO SELECTION

EM APPROACH

- ESTABLISH PRELIMINARY PORTFOLIO BASED ON “SCREENED” OPTIONS
- REFINE PRELIMINARY PORTFOLIO TO:
 - ALIGN WITH SAVINGS TARGETS
 - REDUCE BUDGET COSTS
 - IMPROVE COST-EFFECTIVENESS
 - REFLECT STAKEHOLDER INPUT

COMMENTS

- LACK OF TRANSPARENCY REGARDING DEVELOPMENT OF PRELIMINARY PORTFOLIO (I.E., PROGRAM DESIGN OBJECTIVES)
- LACK OF TRANSPARENCY REGARDING REFINEMENTS TO ARRIVE AT PREFERRED GAS & ELECTRIC PORTFOLIOS
- NO DEVELOPMENT OF ALTERNATIVE PORTFOLIOS TO INDICATE TRADE-OFFS INVOLVED

COST EFFECTIVENESS AND CUSTOMER IMPACT PROGRAM ADMINISTRATOR COST TEST (PACT)

EM APPROACH

- USES MH MARGINAL VALUES

- USES 30 YEAR TIME FRAME
- USES MH DISCOUNT RATE (6%)

COMMENTS

- NOT CLEAR HOW “CURRENT” MH RESOURCE PLAN/MARGINAL VALUES ARE
- NO PEAK/OFFPEAK MARGINAL VALUES FOR ELECTRICITY
- NO EXPLANATION FOR LACK OF MARGINAL VALUES FOR GAS TRANSMISSION/DISTRIBUTION
- 30 YEAR TIME FRAME REASONABLE
- APPROPRIATE DISCOUNT RATE SUBJECT TO DEBATE (NFAT PROCEEDING)
- SENSITIVITY ANALYSIS IMPORTANT

COST EFFECTIVENESS AND CUSTOMER IMPACT PROGRAM ADMINISTRATOR COST TEST (PACT)

EM APPROACH

- INCLUDE COST OF CODES AND STANDARDS BUT NOT SAVINGS

- INCLUDE “FRP” COSTS

COMMENTS

- REASONABLE TO EXCLUDE SAVINGS ATTRIBUTABLE TO CODES AND STANDARDS FOR CURRENT PLAN PACT ANALYSES

- REASONABLE TO INCLUDE FRP COSTS

COST EFFECTIVENESS AND CUSTOMER IMPACT LIFECYCLE REVENUE IMPACT (LRI)

EM APPROACH

- USES MH MARGINAL VALUES AND DISCOUNT RATE
- USES SAME 30-YEAR TIMEFRAME AS PACT

- LOST REVENUE BASED ON FUTURE RATES INCREASES EQUAL TO CPI

- SYSTEM ENERGY VALUES BASED ON MH LOAD FORECAST FOR GENERAL CONSUMER SALES

COMMENTS

- SAME COMMENTS AS PER PACT

- USE OF 30 YEARS UNDERSTATES SHORT-TERM RATE IMPACTS . SHOULD ALSO CALCULATE USING 10 YEAR TIME FRAME

- MAY BE REASONABLE FOR GAS BUT NOT FOR ELECTRIC. SHOULD EVALUATE USING 10 YEAR TIMEFRAME AND 3.9%/ANNUM

- SIMPLIFYING BUT REASONABLE APPROACH

COST EFFECTIVENESS AND CUSTOMER IMPACT LIFECYCLE REVENUE IMPACT (LRI)

EM APPROACH

- IMPACT OF CODES AND STANDARD EXCLUDED FROM BENEFITS AND REVENUE LOSS
- FRP COSTS EXCLUDED

COMMENTS

- TREATMENT IS REASONABLE
- TREATMENT IS REASONABLE

COST EFFECTIVENESS AND CUSTOMER IMPACT

CUSTOMER BILL IMPACT

EM APPROACH

- CALCULATES ANNUAL AVERAGE CUSTOMER BILL SAVINGS

- CALCULATES 30-YEAR NPV FOR CUSTOMER BILL SAVINGS USING MH DISCOUNT RATE

COMMENTS

- BILL IMPACT CALCULATIONS MISREPRESENTS IMPACTS FOR PARTICIPATING CUSTOMERS – NO RECOGNITION OF UPFRONT INVESTMENTS REQUIRED

 - ALSO EXCLUDES COST THAT PARTICIPATING CUSTOMERS WILL INCUR.
 - DISCOUNT RATE SHOULD REFLECT CUSTOMERS' TIME VALUE OF MONEY NOT MH'S
- > PUB SHOULD NOT ATTACH SIGNIFICANT WEIGHT TO THIS MEASURE

ALLOCATION OF SUPPORT COSTS & CORPORATE OVERHEADS

EM APPROACH

- CORPORATE OVERHEAD COSTS AND MOST ENABLING STRATEGIES COSTS CAN NOT BE DIRECTLY ATTRIBUTED TO EITHER GAS OR ELECTRIC PORTFOLIOS
- COSTS ARE ALLOCATED BY CONVERTING GAS AND ELECTRICITY SAVINGS TO GIGAJoule EQUIVALENT AND EACH FUEL'S SHARE OF TOTAL
- RESULT IS A 75/25 ALLOCATION BETWEEN ELECTRIC AND GAS

COMMENTS

- ADMINISTRATIVE AND SUPPORT COSTS TYPICALLY ALLOCATED BETWEEN LINES OF BUSINESS OR AFFILIATED COMPANIES BASED ON PRINCIPLE OF "COST CAUSATION"
- COST DRIVERS SUCH AS LABOUR COSTS, OM&A COST AND PLANT INVESTMENT COMMONLY USED.
- EM'S CORPORATE ORGANIZATION STILL BE DETERMINED
- AGGREGATE COST DRIVERS SUCH AS PROGRAM STAFF COSTS AND TOTAL PROGRAM COSTS YIELD SIMILAR RESULTS -> 70/30

SUMMARY OF CONCLUSIONS

PORTFOLIO DEVELOPMENT PROCESS

- DSM TARGETS
 - DETERMINATION OF ELECTRIC TARGETS DOES NOT ALIGN WITH THE EM ACT WITH RESPECT TO METERED SALES TO CUSTOMERS. ALIGNMENT WITH THE ACT WOULD REDUCE POTENTIAL CONTROVERSY REGARDING BASIS FOR TARGET WHILE NOT MATERIALLY ALTERING THE SAVINGS REQUIRED
 - DETERMINATION OF GAS TARGETS REASONABLE. HOWEVER, NOT EVIDENT THAT DSM ADJUSTMENTS ARE REQUIRED AND ELIMINATION WOULD SIMPLIFY APPROACH
- EVALUATION CRITERIA
 - INITIAL SCREENING CRITERIA ARE REASONABLE
 - PORTFOLIO EVALUATION CRITERIA USED SHOULD INCLUDE MORE THAN BUDGET COSTS, SAVINGS TARGETS AND COST-EFFECTIVENESS
 - STAKEHOLDER PROCESSES SHOULD BE USED TO IDENTIFY APPROPRIATE CRITERIA

SUMMARY OF CONCLUSIONS

PORTFOLIO DEVELOPMENT PROCESS (CONT)

- **OPTIONS CONSIDERED**
 - OVERALL POOL OF MEASURES/TECHNOLOGIES IDENTIFIED BY EM LIKELY REPRESENTATIVE OF THOSE AVAILABLE.
 - HOWEVER, FULL RANGE OF FEASIBLE OPTIONS NOT CONSIDERED DUE TO FAILURE TO CONSIDER OPTIONS WITH ALTERNATIVE INCENTIVE LEVELS
 - LACK OF CONSISTENT DOCUMENTATION AND A CENTRAL REPOSITORY RAISES CONCERNS REGARDING TRANSPARENCY AND CONSISTENCY IN CONSIDERATION OF OPTIONS.
- **PREFERRED PORTFOLIO SELECTION**
 - LACK OF TRANSPARENCY IN TERMS OF OBJECTIVES UNDERLYING BOTH CREATION OF PRELIMINARY PORTFOLIO AND DEVELOPMENT OF FINAL PORTFOLIO
 - LACK OF ALTERNATIVE DSM PORTFOLIOS LIMITS ABILITY FOR PUB TO CONSIDER TRADE-OFFS INVOLVED AND SHOULD BE PART OF FUTURE PLANS

SUMMARY OF CONCLUSIONS

COST EFFECTIVENESS AND CUSTOMER IMPACTS

- PACT
 - 30 YEAR DISCOUNT PERIOD REASONABLE
 - SHORT COMINGS WITH MARGINAL MH VALUES FOR ELECTRICITY (NO PEAK/OFF PEAK ENERGY DIFFERENTIAL) AND GAS (NO TRANSMISSION/DISTRIBUTION MARGINAL VALUES)
 - UNCERTAINTY REGARDING APPROPRIATE DISCOUNT RATE REQUIRES SENSITIVITY ANALYSES
 - GAS PACT SHOULD BE CONSIDERED WITH AND WITH OUT INTERACTIVE EFFECTS

SUMMARY OF CONCLUSIONS

COST EFFECTIVENESS AND CUSTOMER IMPACTS

- LRI
 - SIMILAR ISSUES REGARDING DISCOUNT MARGINAL VALUES AND DISCOUNT RATE
 - RATE IMPACTS SHOULD FOCUS ON 10 YEAR AS WELL AS 30 YEAR VALUES
 - ELECTRICITY RATE INCREASES USED IN ANALYSIS ARE UNDERSTATED IN THE SHORT TERM
- CUSTOMER BILL IMPACTS
 - CUSTOMER BILL IMPACTS PROVIDE INCOMPLETE PICTURE OF IMPACT ON PARTICIPATING CUSTOMERS
 - PUB SHOULD NOT ATTACH SIGNIFICANT WEIGHT TO RESULTS

SUMMARY OF CONCLUSIONS

ALLOCATION OF OVERHEADS & SUPPORT COSTS

- COMMON PRACTICE IS TO USE “COST CAUSATION” AS THE BASIS FOR ALLOCATING OVERHEADS AND COMMON COSTS BETWEEN AFFILIATES AND/OR LINES OF BUSINESS
- USE OF COST DRIVERS SUCH AS PROGRAM STAFF COSTS OR TOTAL PROGRAM COSTS WOULD RESULT IN A 70/30 SPLIT BETWEEN THE ELECTRIC AND GAS PORTFOLIOS AND WOULD BE A MORE APPROPRIATE ALLOCATION