CONFIDENTIAL

INDEPENDENT EXPERT REPORT: DEMAND SIDE MANAGEMENT & ENERGY EFFICIENCY

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PREPARED FOR

Manitoba Public Utilities Board

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LIST OF ACRONYMS

Act	Efficiency Manitoba Act
B/C	Benefit/Cost Ratio
C&S	Codes & Standards
Centra	Centra Gas Manitoba Inc.
CRM	Customer Relationship Management
CSI	Commercially Sensitive Information
Cu. m.	Cubic Meters
Daymark	Daymark Energy Advisors
DSM	Demand Side Management
EE	Energy Efficiency
EEAG	Energy Efficiency Advisory Group
EM	Efficiency Manitoba
EM&V	Evaluation, Measurement, & Verification
Gas	Natural Gas
GHG	Greenhouse Gas
GWh	Gigawatt Hours
kWh	Kilowatt hours
LRI	Lifecycle Revenue Impact
m3	Cubic Meters
MH	Manitoba Hydro
NEBs	Net Energy Benefits
NOMAD	Naturally Occurring Market Adoption
NPV	Net Present Value
PACT	Program Administrator Cost Test
PCT	Participant Cost Test
PMVT	Pure Measure Value Test
PUB	Manitoba Public Utility Board
RIM	Ratepayer Impact Measure Test
TRC	Total Resource Cost Test

I. EXECUTIVE SUMMARY

The 2018 Efficiency Manitoba Act, and the subsequent Order 119/2019, established the framework for moving responsibility for energy efficiency programs, previously managed by Manitoba Hydro, to a new Crown Corporation, Efficiency Manitoba, charged with establishing and managing DSM programs that increase energy efficiency savings while incurring lower program costs.

The Act established energy savings targets (compared to a baseline projection) of 1.5% per year in the electricity sector and 0.75% per year in the natural gas sector. It tasked EM to develop an initial three year plan for meeting these targets and for setting out on a path, over the next 15 years, to achieve 22.5% reductions in the electricity sector and 11.25% in the natural gas sector, compared to baseline projections.

The Act gave the Manitoba Public Utilities Board (PUB) the responsibility of reviewing the Plan and making a recommendation as to whether it should be approved, approved with amendments, or rejected.

Daymark was hired as an independent expert to assist the Public Utilities Board (PUB) in its review of EM's Plan. Daymark was tasked with assessing the Plan's compliance the Act and Regulation and evaluating the Plan along a number of dimensions, including its likelihood of delivering required savings, the benefits of the Plan's initiatives, the cost-effectiveness of the proposals, whether the Plan is accessible to all Manitobans, whether savings targets should be increased or decreased, and the adequacy of EM's plans for tracking savings in support of a future independent assessment report.

Accordingly, Daymark reviewed EM's Plan, including the workpapers showing the analysis behind EM's projections. We reviewed the Plan's compliance with the Act and with regulation 119/2019. We reviewed the Plan's capability to deliver the programs to capture the savings, focusing on the continuation of existing programs, target customer participation rates, and progress in identifying the third-party partners who will be responsible for the delivery of many programs. We reviewed the Plan's approach to providing access to all Manitobans. We examined the benefits and costs of the Plan's proposals, using multiple cost-effectiveness tests and drilling down to the measure level. We examined EM's plan for evaluation, measurement, and verification. Taking deliverability and benefit costs questions together, we identified any major

issues leading to questions about the Plan's ability to meet its three year and fifteen-year targets, considering the role of codes and standards, conservation rates, and solar programs and net metering. In addition, we assessed the likely accuracy of EM's projections of the rate impact of the program.

Our report makes the following major observations about the Plan:

- As a document, the Plan is complete and addresses the requirements of the Act and Regulation in terms of its content. The Plan reports projected savings that are, overall, compliant with the targets established in the Act
- We have some concerns about the ability of EM to deliver the volume of services and to recruit the levels of customer participation that it projects in the Plan. On the one hand, the fact that EM plans to continue a number of programs already being operated by Manitoba Hydro may help it get off to a good start. However, in some cases, EM is projecting customer participation rates significantly higher than those achieved by Manitoba Hydro. In other cases, program delivery may be hindered by the fact that all the third-party partners EM plans to work with are not yet on board. Finally, EM's Plan highlights the important role to be played by a new Customer Relationship Management system that will ease the process of program sign up for customers. However, a contractor for the system is not scheduled to be selected until 2020. Because computer system development is notorious for delays, there may be a risk that a delayed CRM roll-out will cause EM to miss its participation targets
- Reviewing the costs and benefits of EM's program proposals in terms of common benefit-cost assessment tests, we concur with EM's assessment of the relative efficiency of electric and natural gas programs, which finds a high NPV for electricity programs, and a NPV of roughly one (the break-even level) for natural gas programs. Extending cost-benefit analysis to include customer costs and the benefits of greenhouse gas emissions and water usage reductions changes the numbers for some programs, but does not significantly change the overall picture
- At the measure level, not every measure is cost-effective, even assuming program costs of zero, especially in the natural gas portfolio. Although there may be reasons to preserve these measures, based on considerations like customer outreach goals or benefits associated with introducing new technologies, they warrant additional scrutiny.

- Although NPV is calculated using a thirty-year time horizon, many of the measures proposed by EM have a relatively short measure life. Forty-two percent expire within five years. Eight-four percent expire within fifteen years. The fact that measures expire within a fifteen-year period will add to the challenges faced by EM in meeting its fifteen-year overall savings goals
- The extremely modest rate impact estimated by Efficiency Manitoba over a thirty-year period may not be an accurate prediction of how rates will change over the next ten years, if rates fully capture the costs of measures during their productive lives. However, even adjusted to capture most costs within ten years, projected rate increases remain modest
- A significant proportion of the savings projected by EM to meet savings targets come from savings attributed to codes and standards. Our analysis suggests that these savings may be overstated, if the intention is to capture accurately their true incremental energy efficiency impact, taking into account the fact that some compliance with codes and standards may be considered "naturally occurring" and that, over time, technology may overtake codes standards, so that the codes and standards themselves, while still technically on the books, may be largely irrelevant to behavior
- Taking into account the challenges posed by the significant role played in the first three years by measures with relatively short lives, and the possible adjustments that should be made to codes and standards savings projections, it is our assessment that, although EM has put forward a plan with substantial energy savings in the first three years, EM may not be on track, at this point, to meeting the fifteen-year reduction targets set out in the Plan

II. INTRODUCTION

The 2020/23 Efficiency Plan submitted by Efficiency Manitoba ("EM") for review by the Manitoba Public Utilities Board ("PUB") presents Efficiency Manitoba's proposed approach to meeting the requirements of the Efficiency Manitoba Act and Order 119/2019 implementing the Act. Daymark Energy Advisors ("Daymark") was engaged by the Manitoba Public Utilities Board to provide an independent review of the Plan. This report details that review and presents our findings.

A. Background

1. The Efficiency Manitoba Act and Regulation Order 119-2019

The Efficiency Manitoba Act ("Act"), enacted by the Legislative Assembly of Manitoba in 2017, and coming into force on January 24, 2018, established Efficiency Manitoba as a corporation separate from Manitoba Hydro with a mandate to "implement and support demand-side management initiatives" to meet savings targets identified in the Act and achieve additional cost-effective reductions in electricity and natural gas use, while mitigating the impact of rate increases and delaying the need for additional capital investments. Among other provisions, the Act established a requirement that Efficiency Manitoba prepare efficiency plans for each three-year period of operation.

Subsequently, in 2019, the Manitoba Public Utilities Board published Regulation 119/2019, the "Efficiency Manitoba Regulation," (referred to in this report as Regulation 119/2019). The Regulation includes additional information about how the requirements of the Act should be met, including establishing a commencement date for Efficiency Manitoba DSM programs of April 1, 2020. Most notably for the purposes of this report, it details more precisely how cost-effectiveness should be determined, specifying that this calculation should compare the levelized cost to Efficiency Manitoba of net savings to the levelized marginal value to Manitoba Hydro ("MH") or Centra Gas Manitoba Inc. ("Centra") of net savings.

Together, the Act and the Regulation require the PUB to review the efficiency plan and make recommendations as to its approval, amendment, or rejection. To assist in this process, the PUB has contracted with Daymark to assess the Plan's compliance with the mandate and requirements of the Act and the Regulation.

2. Public Utilities Board proceedings in the matter of "Efficiency Manitoba's 2020/23 Efficiency Plan Submission"

Efficiency Manitoba filed the Efficiency Plan on October 25, 2019, beginning the period of PUB review. The Board conducted a Pre-Hearing Conference to identify interveners; issues included in the scope of the hearing, and finalize the hearings process and schedule. In response to the Pre-Hearing Conference, on November 5, 2019, the PUB issued Order No. 162/19, "Procedural Order in Respect of Efficiency Manitoba's 2020/23 Efficiency Plan Submission," approving Applications to Intervene for five groups, approving a list of in-scope Plan review issues and a list of "deferred or out of scope" issues, and

announcing the retention of Daymark as an Independent Expert Consultant to "assist the Board and parties in the review of the Plan."

The complete text of Order No. 162/19, including the list of specific in-scope and out-of-scope issues, is attached to this report as Attachment X. The key "in scope" issues specifically identified include:

- "Reasonableness of methodology to project electric and natural gas net savings to meet prescribed savings targets"
- "Cost-effectiveness of electric and natural-gas demand side management program bundles and portfolio"
- "Accessibility of Efficiency Plan to Manitobans"

In addition, several matters were explicitly declared to be "out of scope," including, in what is most relevant to Daymark's work, "Manitoba Hydro's and Centra Gas' integrated resource planning and derivation of marginal values and avoided costs in accordance with resource planning processes (electric and natural gas)."

3. Minister's letters

In addition to the above, Efficiency Manitoba is also subject, in the preparation of its plans, to directions provided in two Minister's Letters, dated April 24, 2019, and October 18, 2019. Most notably, for the purpose of this report, the two letters are specific in their instruction the Efficiency Manitoba's Plan should provide at least as good or better results than the previous "Power Smart" program, but "at a significantly smaller percentage of the cost and materially less labour costs."

4. Role of Daymark

As indicated in Order 162/19, PUB has retained Daymark as an Independent Expert Consultant "to assist the Board and parties in the review of the Plan."

a) Scope of Work

The Scope of Work for Daymark is attached as Appendix X. The central analytical task required in the Scope of Work is the following:

"Assess whether and the extent to which Efficiency Manitoba's initial 3-year Efficiency Plan meets the mandate and requirements of The Efficiency Manitoba Act and the Efficiency Manitoba Regulation 119/2019."

The Scope of Work lists seven specific topics Daymark should address as part of this assessment:

> 2a) "Whether there is a reasonable expectation that the Efficiency Plan will deliver net savings that meet the legislated electrical energy and natural gas savings targets;"
>
> 2b) "Identification of the benefits of the initiatives in the Efficiency Plan;"
>
> 2c) "Evaluation of the cost-effectiveness of the initiatives in the Efficiency Plan based on the cost-effectiveness tests set out in the Regulation;"
>
> 2d) "Evaluation of the cost-effectiveness of the initiatives based on the cost-effectiveness tests commonly used to evaluate Demand Side Management initiatives;"
>
> 2e) "Whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans. In this context, the Efficiency Plan should include initiatives applicable to all geographic regions of the Province as well as all customer segments: residential, commercial, and industrial;"
>
> 2f) "Whether the savings targets should be increased or decreased based on cost effectiveness or other considerations;"
>
> 2g) "Whether the mechanisms proposed by Efficiency Manitoba to track DSM savings in support of an independent assessment report will provide an accurate portrayal of DSM savings."
>
> As clarified in Order No. 162/19, the above review does not include drilling down to a review of Manitoba Hydro's and Centra Gas' "derivation of marginal values and avoided costs in accordance with resource planning processes (electric and natural gas)." Our cost-benefit analyses, therefore, utilize these numbers as inputs, without offering an opinion on them.

b) Deliverables

Deliverables identified in the Scope of Work are:

- This report, providing Daymark's "assessments and supporting analysis"
- Responses to information requests with respect to report contents
- Addressing any "other issues that may be identified," if approved by the PUB
- Availability for cross-examination of the contents of the report

c) Report Structure

In addressing the issues raised in the Scope of Work, Daymark has divided our analysis into broad categories and structured our report around these categories. A detailed table showing where each element of the Scope of Work is addressed in our report is attached as Attachment X. The general categories, and the overall structure of the report, are as follows:

I. **Executive Summary**
II. **Introduction.** This section reviews the legislative and regulatory background, presents the role of Daymark and its scope of work, gives an overview of the report structure, and provides a summary (without evaluation) of the highlights of the efficiency plan presented by Efficiency Manitoba.
III. **Assessment of Plan Completeness with respect to Legislation and Regulation**. Is the Plan complete? Does it provide all the information and analysis required in the Act and the Regulation?
IV. **Deliverability**. In this section, we assess Efficiency Manitoba's ability to deliver the savings projected in the Plan, and we review the Plan's outreach to hard to reach customers.

Under "Deliverability," we consider two distinct, but related, sets of questions identified in the Scope of Work:

- First, the Scope of Work asks Daymark to assess "whether there is a reasonable expectation" that required electrical and natural gas savings will be delivered
- Second, under deliverability, we consider the question of accessibility to all Manitobans

To answer these questions our report addresses these areas:

- We access whether the savings being targeted by the Plan meets the target savings of the Act and the Regulations and whether the savings that are being counted are consistent with the regulations
- Second, we identify any concerns we have regarding the savings that has been identified, such as analysis errors, quantify any Plan savings that is outside the areas specified by the legislation, whether the basis for the savings is questionable
- Third, we identify whether the bundles and programs that the Plan explains as the initiatives that will be used to achieve implementation of the energy

efficiency measures are likely to deliver the activity level in the Plan at a cost estimated in the Plan

V. **Cost/Benefit Analysis**. In this section, we assess whether the Plan identifies the costs and benefits of Plan initiatives in the manner described within the regulations, we assess the accuracy of this analysis, and we assess the costs-effectiveness of the initiatives, both using the cost-effectiveness tests set out in the Regulation and also using additional commonly-used cost-effectiveness tests.

VI. **Plan for Evaluation, Measurement, and Verification**. In this section, we assess the Plan's proposed mechanisms for tracking savings in preparation for the post-hoc Independent Assessment of the results and cost-effectiveness of the Plan that is required under Section 16(1) of the Act.

VII. **Savings Targets**. Here, we examine what the cost effectiveness and other considerations related to the Plan's initiatives might indicate about whether savings targets should be increased or decreased.

VIII. **Additional Considerations**. This section addresses additional issues relevant to the analysis of the Plan, such as the potential use of conservation rates and the role of solar programs and net metering.

IX. **Summary of Findings.** We conclude by summarizing our findings.

B. Summary of Efficiency Manitoba Plan

The 2020-2023 Efficiency Plan put forth by Efficiency Manitoba was filed on October 25, 2019. This section summarizes the highlights of the Plan as presented by Efficiency Manitoba and particular points of note identified by Daymark, in order to help set the context for the discussion presented later in this report. Our evaluative comments on the Plan are reserved for Sections II-VII of this report.

1. The Plan promises to deliver significant electric and natural gas savings in the first three years of the Efficiency Manitoba program, starting in the first year.

The Efficiency Manitoba proposed Plan calls for spending approximately $200 million over three years to attain cumulative total energy of 403 GWh for the

electric portfolio and 37.7 million meters cubed for the natural gas portfolio. These projected savings are closely aligned with the Act's targeted savings rates—an average of 1.51% savings per year in the electric portfolio (compared to a target of 1.5% per year) and an average of 0.78% per year in the natural gas portfolio (compared to a target of 0.75% per year).

The Plan's savings projections rely on a fast start in the first year of program operation, with budgeted spending and savings rates only slightly lower than rates in the second two years of the program. These projections for a fast start may be supported by the fact that, as Efficiency Manitoba documents, many proposed programs are continuations and/or consolidations of existing programs—only a few programs must be built from scratch.[1] Taking the electric and natural gas portfolios together, the total program budget in Year 1 is approximately $63 million, reaching $74 million by the third year. Projected savings rise from an estimated 85 GWh savings in year 1 of the electric portfolio to 93 GWh in years 2 and 3. On the natural gas side, savings rise from 11.7 million cubic meters in year 1 to 13.2 million cubic meters in year 3.

Efficiency Manitoba has put together a portfolio of offerings in the natural gas and electricity areas which can be broken down into hundreds of individual technologies and measures offered in different configurations to the residential, commercial, industrial, and agricultural [and other sectors]. These individual offerings have been organized into program "bundles," which are customized packages of programs intended to serve the needs of different types of customers. In general, measures include elements like rebates for efficient appliances, programs to supply and install specific energy saving technologies, focused on areas such as lighting, heating, cooling, air management, building envelope improvements, and commercial refrigeration.

These savings are estimated by Efficiency Manitoba based on a bottom-up analysis, from the most granular measure and technology level, to reach overall estimates for the electric and gas portfolios. In addition, savings from codes & standards make up a significant share of total savings (almost 1/4 of electricity savings and 1/3 of natural gas savings).

[1] Plan, Appendix A, Table A4.1

2. The Plan aims to provide savings opportunities to all Manitobans

The Plan's budget projections show an allocation of funds to provide programs to industrial, commercial, agricultural, residential, income qualified, and indigenous customers.

Reaching hard-to-serve, indigenous, and income-qualified customers. Efficiency Manitoba's discussion of the Plan emphasizes that they have attached a high level of importance to designing the plan to serve all Manitoba customers. The Plan notes that it is "imperative" that "all Manitoba customer segments have representation within Efficiency Manitoba's Plan." This importance is reflected in the budget of the Plan, which assigns significant resources to income qualified programs and indigenous programs in both the natural gas and electric portfolios, even though the Plan projects that achieving energy savings for these customers may be relatively costly. Specific programs proposed include community geothermal for indigenous customers, developing programs for communities that rely on diesel-generated electricity and fuel oil, and additional subsidies for income qualified customers for services such as furnace upgrades and new appliances. In total, Efficiency Manitoba reports devoting 6% of the electric efficiency budget and 32% of the natural gas efficiency budget to these customers.[2]

Programs for all major customer segments. Other budgetary funds are distributed among industrial, agricultural, commercial, and residential customer segments. In the electric portfolio, the largest share of the budget (39%) goes to the industrial segment, with 36% going to the commercial segment, 19% going to the residential segment, and 4% to the agricultural segment (these percentages do not total 100, because costs associated with enabling strategies and corporate overhead are not assigned to customer segments). All segments are projected to realize savings, with the industrial and commercial sectors accounting for the largest share of total savings (39% and 35%, respectively), residential customers accounting for 22%, and agricultural customers accounting for 3% of the total.

In the natural gas portfolio, after dedicating 32% of the budget to income qualified and indigenous customer segments, commercial customers receive 27% of the budget, followed by residential customers at 21% and then, well

[2] Plan Overview Section 6.2, p. 12.

behind, followed by industrial customers at 9% and agricultural customers at 1%. Energy savings projections show residential customers as realizing the largest share of total energy savings (37%), followed by industrial customers at 29% (despite their relatively low budget share), commercial customers at 25%, and agricultural customers at 1%.

Overall, then, the plan budgets show significant investments in the industrial and commercial sectors—a level of investment that may be best understood in the context of Efficiency Manitoba's NPV cost effectiveness analysis, discussed below.

Spending that returns funds to Manitobans. Across all customer segments, as Efficiency Manitoba highlights in its discussion of the Plan, most program spending is returned to Manitobans in some form. As the Plan notes, "87 percent of Efficiency Manitoba's combined budget is returned to Manitobans through program incentives, private sector energy efficiency delivery partners and outsourced corporate support functions." Of this amount, approximately 65% is returned directly to customers in the form of customer incentives,[3] an amount that the Plan calls a "powerful driver towards both energy efficiency and further investment in Manitoba homes and commercial operations as well as in the businesses delivering the products and services to the market."[4]

Geographic reach. Daymark's Scope of Work specifically mentions geographic regions in asking Daymark to assess "Whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans…[including] initiatives applicable to all geographic regions of the Province as well as all customer segments: residential, commercial, and industrial."

The Efficiency Manitoba Plan itself, although it mentions geography as a potential challenge, does not directly focus on the question of whether the programs it proposes are applicable to all the geographic regions of Manitoba. This is not a compliance issue, since neither the Act nor the Regulation specifically require Efficiency Manitoba to address geographic reach in the Plan. Our later discussion of Deliverability gives our assessment on this question.

[3] Plan Overview, Section 4

[4] Plan, Section 4.2, page 9 of 17

3. Of the five specific "mandates" of the Act, the Plan outlines a path to satisfying three mandates, with two mandates not discussed in detail

Section 4(1) of the Act identifies five specific "mandates" for Efficiency Manitoba. Paraphrased and summarized, these mandates are:

a. implementing and supporting DSM initiatives to meet energy savings targets and achieve greenhouse gas emissions reductions

b. achieving additional cost-effective reductions, if additional cost-effective measures are available

c. mitigating rate increases and delaying the need for Manitoba Hydro to make capital investments in new generation and transmission

d. carrying out duties, if prescribed, related to Manitoban demand for electric power, potable water and fossil fuels in the transportation sector

e. getting the private sector and non-government entities involved in program delivery

As reported by Efficiency Manitoba, the Plan satisfies the mandates of the Act with respect to 4(a), meeting established savings targets, 4(c), mitigating the impact of rate increases and delaying the need for Manitoba Hydro to make capital investments and 4(e), relative to involving the private sector and non-governmental entities. The Plan does not discuss 4(b) and 4(d) in detail. Presumably, the reason is that Efficiency Manitoba does not believe additional cost-effective savings are currently possible, and so far no additional duties have been prescribed related to potable water or energy consumption in the transportation sector.

4. The Plan describes Efficiency Manitoba's efforts to build a first-class efficiency organization

As provided for in the Act, Efficiency Manitoba has established itself as a new Crown Corporation with a Board of Directors which has developed a corporate strategic plan which includes its "mission vision, guiding principles, and strategic goals."[5]

[5] Plan Overview, Section 2.1, p. 4

Development of Program Bundles. As contrasted with previous efficiency efforts managed by Manitoba Hydro, the Plan highlights as distinctive a "new approach to customer segment programming and comprehensive engagement."[6] The Plan gives a prominent role to the development of nineteen distinctive different sets of "program bundles" with "customize[d] marketing, engagement, and delivery efforts" targeted to meet the needs of six distinct "customer segments… selected to be inclusive of all Manitobans and to capture their unique customer behavior characteristics and energy consumption patterns[7]:

- **Residential customers**
- **Income-qualified residential customers**
- **Indigenous customers**
- **Commercial customers**
- **Industrial customers**
- **Agricultural customers**

Role of Public Engagement. An additional factor flagged by the Plan is the role that public engagement has played in Plan development, with the formation and participation of a new Energy Efficiency Advisory Group to provide input during Plan development.

Lean central organization. Efficiency Manitoba describes itself as a "lean organization," and projects significantly lower staff costs than were seen in the 2015-2016 Manitoba Hydro program. This lean core staff is supplemented by significant engagement with private sector delivery partners, indicating the continued use of partners previously connected with Manitoba Hydro efficiency program in program delivery. This approach contributes to the Plan's finding that 87% of its budget is "returned to Manitobans," establishing Efficiency Manitoba as a force in the Manitoba economy.

5. The Plan projects the development of a cost-effective DSM portfolio that could be funded by small, one-time electric and natural gas rate increases

Both the natural gas and electric portfolios pass Efficiency Manitoba's cost-effectiveness test, but the electric portfolio is projected to be significantly more cost-effective than the gas portfolio. Section 12(1) of Regulation

[6] Plan Overview, Section 3, p. 7
[7] Plan Overview Section 3, p. 9.

119/2019 outlines the required approach for determining cost effectiveness for both the electricity and natural gas portfolios, by comparing "the levelized cost to Efficiency Manitoba" of the net electrical or gas savings resulting from efficiency initiatives to "the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives." This kind of test is often referred to as a Program Administrator Cost Test (PACT). Using this methodology, the energy efficiency improvements projected to result from the Plan, taken together, achieve cost savings that more than outweigh program expenditures. Overall, the projected net present value of the savings (after accounting for program costs) from the whole portfolio is $344 million.[8] Broken down into the electric and natural gas segments, the projected overall savings are entirely in the electric portfolio. The natural gas portfolio essentially breaks even in Efficiency Manitoba's projection.

Cost-effectiveness varies among different customer segments, with commercial, agricultural, and industrial programs playing an important role. The Plan breaks down the budget and projected energy savings by customer segment (industrial, agricultural, commercial, residential, income qualified, and indigenous customers), and reports cost-effectiveness metrics for each segment. In the natural gas portfolio, commercial, industrial, and agricultural programs (which almost all are reported to have a positive NPV) play a crucial role in balancing the net losses of most other programs. For the natural gas programs, the lion's share of NPV cost savings is expected to come from custom programs serving the commercial, industrial, and agricultural sectors.[9]

In contrast to the natural gas portfolio, within the electric portfolio, all reported programs (reported at a bundled level) show positive net present value. Again, however, the bulk of the NPV savings are attributed to commercial, industrial and agricultural programs, with programs categorized as "renovations" in that sector accounting for about half the NPV of the entire electric portfolio.[10]

Table 1 presents the results of Efficiency Manitoba's cost-benefit analysis for different customer segments in summary form:

[8] Plan, Section 1.5, p. 14. Sums reported "overall portfolio metrics" for the electric and natural gas portfolios.

[9] See Plan Attachment 3-Technical Tables, table titled "Natural Gas Program Cost-Effectiveness Metrics."

[10] See Plan Attachment 3-Technical Tables, table titled "Electric Program Cost-Effectiveness Metrics."

CUSTOMER SEGMENT(S)	NATURAL GAS			ELECTRICITY		
	C/B	NPV (000'S)	LEVELIZED COST (¢/m^3)	C/B	NPV	LEVELIZED COST
RESIDENTIAL	1.01	$179	19.49	2.74	$40,338	3.19
Income Qualified	0.49	($8,888)	40.29	2.8	$7,576	3.7
Commercial, Industrial, and Agricultural	2.52	$31,429	7.19	1.84	$6,792	4.67
Emerging Technologies	0.89	($104)	21.4	2.96	$4,156	2.11

Table 1: Cost-Benefit Analysis Using PACT[11]

Program costs and benefits in the report are reported at the "bundle" level (discussed in more detail below), not the most finely-grained level of individual measures. However, Efficiency Manitoba's analysis builds these bundle-level cost savings up from an analysis of individual measure data.

Projected rate impacts are modest but projected over thirty years. In addition to cost savings, the Plan includes calculations of revenue impacts to clarify potential rate impacts of the Plan. Even for a cost-effective plan, Efficiency Manitoba acknowledges, per-kWh or per-meter cubed rate increases may be necessary to ensure utility costs, including program costs, are collected from the smaller total amount of electricity or natural gas used under the program. Efficiency Manitoba calculates this based on a "lifecycle revenue impact" (LRI) analysis, which looks at the net present value of the next thirty years of revenue impact.

Efficiency Manitoba concludes that electricity rates may need to rise 0.3% (a one-time increase) to cover the program costs and associated utility revenue losses for the next three years. Gas rates may require a one-time rate increase of 1.2%. The Plan does not mention when, if ever, these increases would expire, so we assume that they are intended to continue for the full thirty years used in the calculation.

6. The Plan carefully tracks and reports its compliance with law and regulation

Efficiency Manitoba states, in Section 2 of the Plan Overview, that the Plan complies with the essential elements of the Act and of Regulation 119/2019, meeting "prescribed energy targets," using prescribed methods to evaluate

[11] Figures here are from EM's analysis, found in Appendix 3. See Table, "Natural Gas Program Cost-Effectiveness Metrics" and Table, "Electric Program Cost-Effectiveness Metrics"

cost-effectiveness, addressing customer accessibility issues, considering non-energy benefits, and proposing an evaluation framework and a performance assessment plan.[12]

In the Plan itself, Efficiency Manitoba provides tables cross-referencing how the Plan corresponds to specific Act and Regulation requirements.[13]

7. The Plan sees a critical role for a planned CRM/DSM system.

An important part of the Plan (described by Efficiency Manitoba as "key," a "critical and overarching strategy," and "foundational to the success of Efficiency Manitoba") is the development of a new customer relationship management and demand side management system (referred to in the Plan as the "CRM/DSM system.") In addition to serving as a single point of access to programs for customers, the CRM/DSM system is envisioned as playing a crucial role in Efficiency Manitoba's program evaluation efforts, by providing the capability for continuous performance monitoring at the program bundle and measure level.[14]

8. Plans for evaluation include ongoing self-evaluation and periodic independent evaluations

The Plan envisions a process of ongoing self-assessment. Efficiency Manitoba proposes that it will adopt an approach of ongoing performance evaluation, improvements, and pursuit of new opportunities, through a process of ongoing monitoring of energy savings and budgets of measures and program bundles (using the CRM/DSM system), benchmarking against other programs using "scorecards", and "implementing refinements."

The Plan's Evaluation Framework is intended to assist in future independent evaluations of impact and costs. The Act section 16(1) requires an independent assessment of the results and cost-effectiveness of the efficiency plan. In preparation for meeting this requirement, Efficiency Manitoba has developed an Evaluation Framework to govern its approach to evaluation

[12] Plan Overview, Section 2.3

[13] See Plan, Table 2.2 "Summary of the Efficiency Manitoba Act Cross-Referenced to Corresponding Sections of the Submission;" Plan, Table 2.3, "Summary of the Efficiency Manitoba Regulation Cross-Referenced to Corresponding Sections of the Submission," Plan Table 2.4, "Summary of the Efficiency Manitoba Act Regulatory Review Requirements Cross-Referenced to Corresponding Sections of the Submission," and Table 2.5, "Summary of the Efficiency Manitoba Regulation Regulatory Review Requirements Cross-Referenced to Corresponding Sections of the Submission."

[14] See Plan, 7.1; Plan Overview, Section 7.1

throughout multiple program periods, and a specific evaluation plan for the immediate three program years.

C. Assessment of Plan Completeness with respect to Legislation and Regulation

In Section II.B.3 (above) we examined whether and how the Plan proposes to comply with the five "Mandates" of the Act (found in Act Part II, Section 4(1)), concluding (without at this point assessing deliverability or cost-effectiveness) that the Plan itself, if executed as proposed, and with the results predicted in the Plan, would satisfy the three key mandates that are currently applicable: meeting savings targets and achieving greenhouse gas reductions, mitigating the impact of rate increases and delaying utility capital investment needs, and promoting and encouraging the involvement of the private and NGO sectors.

In this final introductory section, we review how the Plan maps to and, when applicable, complies with, other elements of the Act and the Regulation. First, we examine the Plan's relationship to Section 9 of the Act, which lists several requirements of topics that must be addressed in the Plan document. Second, as an aid to the PUB in its review, we examine the Plan in relation to Section 11(4) of the Act and Section 11 of the Regulation, which instruct the PUB to consider several specific factors in reviewing the Plan.

1. Efficiency Plan compliance with Section 9 of the Act

In accordance with the Scope of Work's directive that Daymark should assess "whether and the extent to which Efficiency Manitoba's initial 3-year Efficiency Plan meets the mandate and requirements of the Efficiency Manitoba Act and the Efficiency Manitoba Regulation 119/2019," Daymark reviewed whether the Plan meets the requirements of Part 3, Section 9 of the Act, which details what the Efficiency Plan must include. In this initial section, we reviewed only for completeness--whether all the required elements are included, deferring a substantive assessment of the Plan to the following sections of the report.

Table 2.2 of the Plan cross-references the Efficiency Plan requirements listed in Section 9 of the Act to specific sections of the Plan. After reviewing this table, we concur that all required elements have been included in the Plan.

Although all required topics are addressed in some form, there are a few items that warrant further brief discussion:

- **Greenhouse gas impacts.** Section 9(e) of the Act requires the Plan to include "an analysis of the reductions in greenhouse gas emissions in Manitoba expected to result from the initiatives proposed." In the Plan's Section 6.6.3, the Plan does address these impacts with respect to natural gas; however, the Plan does not address GHG impacts of electricity efficiency initiatives, citing the "very low domestic GHG emission intensity of Manitoba's hydroelectric generation." Presumably, Efficiency Manitoba's reasoning is that a reduction in hydroelectric output does not reduce GHG emissions, since hydroelectric generation does not produce such emissions.
  This is true, and, given that the Act specifically mentions greenhouse gas emissions *in Manitoba*, fully compliant. However, because greenhouse gas emissions are a global issue, and reductions elsewhere are just as much of an accomplishment as reductions in Manitoba, it's worth noting that efficiency improvements in the electric sector in Manitoba likely cause reductions in greenhouse gas emissions in MISO by making more hydro power available to MISO consumers
- **Level of analysis.** Section 9 of the Act requires the Plan to provide information on demand-side management "initiatives," including an analysis of costs and savings for "each of the initiatives proposed." There is room for interpretation of how much granularity is intended by the term "initiative." The Plan reports on costs and savings at the "bundle" level, which is not the most granular level of analysis possible. In communications between Daymark and Efficiency Manitoba, Efficiency Manitoba explained that publicly presenting such an analysis at a more granular level would necessarily reveal confidential information, so that, while they did perform this analysis, they could not report it in detail in the Plan. Daymark and Efficiency Manitoba have worked together to allow Daymark access to the more granular data needed for a full analysis, and this report includes our analysis of Efficiency Manitoba's planned initiatives on this more detailed basis
- **The Plan's implications for fifteen-year goals**. Section 9(i) of the Act requires that the Plan should include "a description of how the initiatives proposed…will assist Efficiency Manitoba in positioning itself to secure the net savings that are reasonably anticipated to be required over the next 15 years." The Plan's table referring to how it meets this requirement refers only to Section 3.1[15], where the discussion is very limited. The Act may have envisaged

[15] In fact, it refers to Section 3.1.1, we think erroneously, because there is no section 3.1.1 in the relevant portion of the Plan

a more strategic analysis that could address how planned programs might pave the way for future programs or, alternatively, to identify any risks of current programs crowding out opportunities for future reductions. In fact, the elements of such an analysis do come up in discussions of specific programs and how they might facilitate further developments—the analysis just does not seem to be brought together into one section

2. The Efficiency Plan and Elements Mandated for PUB review

Section 11(4) of the Act, supplemented by Section 11 of the Regulation, identify several Plan elements that should be specifically considered by the PUB in reviewing the Act.

The Act Section 11(4) identifies the following elements for review:

(a) "[T]he net savings required to meet the savings targets and the plans to address any existing shortfall." As we discuss above, the Plan's net savings targets do (with the trivial exception of a first-year shortfall in the natural gas requirements) overall meet the Act's targets. We address, more substantively, potential deliverability challenges and the adequacy of plans to cope with any shortfalls that may occur.

(b) "[T]he benefits and cost-effectiveness of the initiatives proposed in the plan." As discussed in the Plan summary, section II.B.5, above, the Plan itself uses the required cost-effectiveness testing approach and finds proposed Plan initiatives to be cost-effective. In our Section IV, below, we report our own findings related to the cost-effectiveness of the Plan.

(c) "[W]hether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans." As discussed in the Plan Summary, Section II.B.2, above, the Plan includes elements aimed at six separately-defined customer segments: residential customers, income-qualified residential customers, indigenous customers, commercial customers, industrial customers, and agricultural customers. We present our substantive evaluation of how well the Plan's approach is likely to perform in reaching all these customer groups.

(d) "[A]ny additional factors prescribed by the regulations." Regulation 119/2019, Section 11, does prescribe several additional factors. These are discussed below.

Regulation 11a) "[T]he appropriateness of the methodologies used by Efficiency Manitoba to select or reject demand-side management initiatives." Efficiency Manitoba describes its approach to selecting programs in Appendix A, Section A2 of the Plan, using a process that involved both quantitative analysis elements and community engagement (through the Energy Efficiency Advisory Group.) In addition to meeting legislative mandates, Efficiency Manitoba reports that it considered how best to "leverage" longstanding programs, while also getting new programs started, maximizing "value for money," creating "non-energy benefits," developing a "diverse and inclusive portfolio" with "breadth of offerings," and considering technology lifecycles, including which technologies may be approaching "market saturation" and which are emerging that might fill "market gaps."

Regulation 11b) "[W]hether the plan adequately considers the interests of residential, commercial and industrial customers." As discussed in Section II.B.4, above, the Plan devotes significant resources to residential, commercial and industrial customers. In our Deliverability section, below, we evaluate plans for these customers in more detail.

Regulation 11c) "[W]hether, 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." As discussed in Section II.B.2, above, the Plan targets "hard to reach" customers by developing tailored sets of programs for indigenous and low-income customer groups, and devotes 6% of the electric efficiency budget and 32% of the natural gas efficiency budget to these customers.

Regulation 11d) "[W]hether the portfolio of demand-side management initiatives required to achieve the savings targets is cost-effective." As discussed above, according to Efficiency Manitoba's analysis, the electricity portfolio is highly cost-effective, and the natural gas portfolio about breaks even. Our own analysis is presented in Section IV, "Cost/Benefit Analysis," below. It may be worth noting in this context that the Act itself requires that cost-effectiveness be considered, and that any initiatives beyond those required to meet the targets must be cost-effective, but not that the initiatives required to meet the targets must necessarily pass the prescribed cost-effectiveness test.

Regulation 11e) "[I]f the plan includes demand-side management initiatives in excess of those required to achieve the savings targets, whether those initiatives are cost-effective." Projected savings in the Plan exceed savings targets only by hundredths of percentage points. Therefore, in Daymark's opinion, this analysis is not currently required.

Regulation 11f) "[W]hether Efficiency Manitoba's administration budget is reasonable when compared to similar organizations." As Efficiency Manitoba notes in its Plan, administrative budget comparisons can be tricky, since it is easy to find different definitions of "administrative" costs. Efficiency Manitoba itself reports its costs in four general categories:

- "overhead costs" costs at 2.1% of the total budget
- "staff costs" at 13.4% of the total budget
- "Program costs" (including "private sector program delivery, program administration program advertising and enabling strategies budget items") at 19.7% of the total budget
- "Customer incentives" at 64.7 percent of the total budget

Of the figures above, only customer incentives seem clearly not to be appropriately considered in the category of "administration budget," and it is this figure that Efficiency Manitoba uses to benchmark against programs in Massachusetts (69%-76% for direct customer incentives), Oregon (46.8%-54.1% for direct customer incentives), and Nova Scotia (60.1% for direct customer incentives), putting Efficiency Manitoba in the top half of programs examined. [16]

Regulation 11g) "[T]he impact of the efficiency plan on rates and average customer bill amounts." As discussed in Section II.B.5, above, Efficiency Manitoba estimates that funding the first three years of the program will require a one-time increase of 0.3% for electricity rates and 1.2% for natural gas rates, persisting for thirty years. Presumably (although this analysis is not included in Efficiency Manitoba's Plan), additional one-time rate increases will be needed for each three-year extension of the Plan. Although Daymark does not have an estimate of what these out year rate impacts might be, if the same level of rate impact occurs with each extension, ratepayers might, by the final three years of the 15-year program, see approximately a 1.5% total increase in electricity rates and a 6% increase in natural gas rates. A missing piece of the

[16] Discussion in this section refers to Plan Overview, Sections 4.1-4.3.

analysis here might be what rate increases customers might expect to see in the absence of an efficiency program, if growing demand necessitated significant new capital investments.

Efficiency Manitoba's analysis does not include a discussion of the likely impact of the program on actual bill amounts faced by non-participating customers. For participating customers, collectively, Efficiency Manitoba projects that electricity bills will decrease by an average of $14.9 million annually, and natural gas bills will decrease by an average of $3 million annually.

Regulation 11h) "[T]he reasonableness of the projected savings and Efficiency Manitoba's ability to meet the annual savings targets and the 15-year cumulative savings targets. We address this question in Section III, "Deliverability," below. One clarifying note here is that, although the 15-year savings target is identified in the Act as 22.5% for electrical energy and 11.25% for natural gas (taking the 1.5% yearly electrical target and the 0.75% yearly natural gas target and multiplying each of these by fifteen), the actual final numbers, even if each yearly target is met exactly, may not be precisely 22.5% and 11.25% less than Year 1 consumption, once changing baselines resulting from potential load growth and the impacts of year-over-year compounding effects are taken into account.

Regulation 11i) "Efficiency Manitoba's use of private-sector enterprises and non-governmental organizations to deliver demand-side management initiatives." As discussed in Section II.B.3, above, Efficiency Manitoba's plan does include significant use of private sector enterprises and non-governmental organizations. Any possible issues in the execution of this plan are discussed in our Deliverability section.

Regulation 11j) "[W]hether the efficiency plan adequately considers new and emerging technologies that may be included in a future efficiency plan." In Appendix A, Sections 8 and 9 of the Plan, Efficiency Manitoba sets out two levels of approach to new and emerging technologies. For tested and piloted, but not widespread, technologies, Efficiency Manitoba allocates an "emerging technologies" budget, that starts at $187,000 in Year 1 and rises to approximately $1.6 million in Year 3, planning in the first three years to focus on promoting the adoption of solar photovoltaic and customer sited bioenergy. In addition, Efficiency Manitoba proposes to monitor emerging new technologies, and to engage in pilot projects and research partnerships to

explore the possibility of including these technologies in future years. Funding for these activities is included in Efficiency Manitoba's proposed "innovation budget," which totals approximately $2.6 million over three years.[17]

Regulation 11k) "[F]or any efficiency plan after the first one, the reasonableness of Efficiency Manitoba's internal retrospective performance assessment." This does not currently apply.

Regulation 11l) "[W]hether Efficiency Manitoba has reasonably attempted to comply with the directions of the Minister." As noted above, the Minister's instruction to Efficiency Manitoba directed that Efficiency Manitoba's Plan should provide at least as good or better results than the previous "Power Smart" program, but "at a significantly smaller percentage of the cost and materially less labour costs." In Section 2.2 of the Plan Overview, Efficiency Manitoba reports that, in compliance with this directive, it is proposing programs that should provide significantly increased energy savings at a somewhat lower average annual cost, with a 30% reduction in staff.

Overall, then, our review of Plan completeness generally finds that all the requirements of the Act and Regulation are addressed in some form. However, crucial to the overall evaluation of the plan is a specific analysis of actual deliverability of what is envisaged, as well as a review of costs and benefits. These follow in Sections III and IV.

III. DELIVERABILITY

A. Overview

The Efficiency Manitoba (EM) 3-Year Plan is designed to continue the success of the existing Manitoba Hydro (MH) DSM Plan that has been in existence since 2006/07[18] while offering new incentives and enhancements to increase savings for MH's legacy programs and increase awareness and participation across programs and customer segments.

In order to achieve this goal and show benefits for all Manitobans over the next three years, Efficiency Manitoba has committed to increasing energy savings while relying on a lower budget compared to the prior efficiency plan for 2015/2016. As shown in the figure below, Efficiency Manitoba has provided

[17] Plan, Section 7.4

[18] Certain individual program offerings started later, e.g., MH launched the heat recovery ventilator program (HRV/ERV) program in 2011, MH 2018 DSM Report, p. 26.

an enhanced plan designed to deliver 35% more electric energy savings and 42% more natural gas savings than achieved under the Manitoba Hydro 2015/2016 plan.[19]

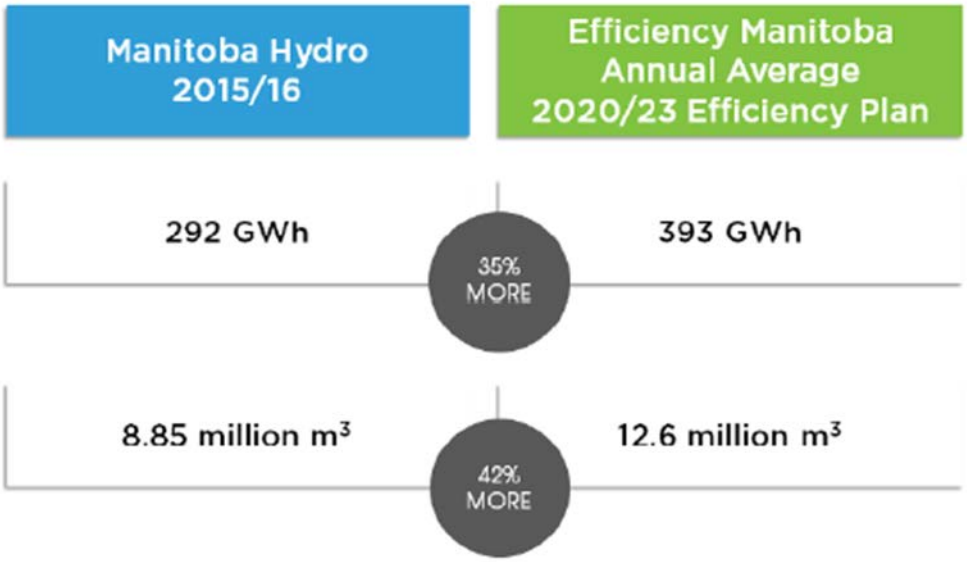


Figure 1: Comparison of Manitoba Hydro's 2015/16 Plan with Efficiency Manitoba's 2020/23 Plan

At the same time Efficiency Manitoba's plan reduces overall costs by 9% to accommodate a 39% increase in Program costs, which includes incentives for enhanced and new measures, as shown in the Figure below.[20]

This reduction will be achieved in part by reducing staff by 30% compared to 75 full-time equivalent staff compared to 110 full time equivalent positions at Manitoba Hydro.[21]

[19] 3-Year Plan PDF p. 32, EM Section 1, Figure 5.7 page 22 of 32.
[20] 3-Year Plan PDF p. 33, EM Section 1, Figure 5.7 page 23 of 32.
[21] 3-Year Plan, Section 2, pdf p. 51, page 6 of 27, lines 51-54.

Manitoba Hydro 2015/16		Efficiency Manitoba Annual Average 2020/23 Efficiency Plan	
$49,329,000	INCENTIVE COSTS	$45,247,000	8% ↓
$9,927,000	PROGRAM COSTS	$13,765,000	39% ↑
$14,949,000	STAFF COSTS	$9,375,000	37% ↓
$2,190,000	OVERHEAD COSTS	$1,495,000	32% ↓
$76,396,000	**TOTAL COSTS**	**$69,881,000**	9% ↓

Figure 2: Budget Comparison by Category between Manitoba Hydro's 2015/16 Plan and EM's 2020/23 Plan

Further, Efficiency Manitoba expects that its program will have minimal one-time bill impacts of less than 1.0% for electric customers and slightly more than 1% for natural gas customers.[22]

Efficiency Manitoba claims that this 3-year plan will improve the customer experience based in part on the implicit assumption that there will be no or manageable issues with deliverability, even for substantially enhanced programs designed to engage customers. With higher target savings and lower program costs, Efficiency Manitoba recognizes that improving the customer experience will require leveraging and strengthening Manitoba's existing network of private sector delivery partners and that this effort is critical to achieving the goals for its plan.[23]

Deliverability is key to Efficiency Manitoba's success from two perspectives, the customer and the trade partner, where the latter can include third party

[22] 3-Year Plan, EM Section 1, pdf p. 28-29, page 18-19 of 32.
[23] 3-Year Plan, Section A2, pdf p. 212, page 9 of 40, lines 159-168.

intermediaries who agree to engage with customers on Efficiency Manitoba's behalf.

First, from the customer's perspective, deliverability assures success if customers' expectations are met in a timely and complete manner. Successfully installing all participant projects presented in this 3-year plan requires that Efficiency Manitoba accurately assess the target market as well as a reasonable estimate of how many of the incremental sales will occur each year. When no information is given for the former, it is difficult to assess how successful Efficiency Manitoba will be at achieving the latter. For example, if the total market that could benefit from a particular program is 15,000 installs or participants, and Efficiency Manitoba estimates it will install 2,000 projects, this suggests that the market will be fully saturated within eight years, which could be considered aggressive for a major customer investment. Even if customers have the capacity to make this investment, they must be able to have confidence that once they apply for any program incentive, they will begin to see savings in a timely manner. If the time frame until installation is delayed, due to a shortage of resources, and participants have to wait longer to realize the payback they have been led to expect, this could discourage other potential participants.

The second way that deliverability – and in turn program success -- is assured is by Efficiency Manitoba having assembled at the outset of the 3-year term an adequate stable of delivery partners with appropriate training to meet the aggregate savings expected. Many of the programs in this plan continue existing Manitoba Hydro DSM programs, which are supported by existing trade partners that are familiar with these offerings.

Maintaining good relations with these partners is even more important for those programs that require a step increase in the rate of savings, and number of participants/projects, over Manitoba Hydro legacy programs. And because Efficiency Manitoba has committed to reducing its staff from that with which Manitoba Hydro managed the legacy programs, reliance on trade partners will grow along with the addition of new programs; expanding the partnership program is critical for new and modified programs designed to attract new participants and capture enhanced savings. Additional training may need to be provided without disrupting or extending the assumed sales cycle required to meet Efficiency Manitoba's annual targets. In other words, deliverability is tied

to the implied pace of installations, which in some cases appear to be much higher than achieved in the legacy Manitoba Hydro DSM program.

Our initial review finds deliverability concerns because Efficiency Manitoba acknowledges in the report and in responses to discovery that:

1) Efficiency Manitoba has committed to increase energy savings under a substantially lower budget compared to the existing Manitoba Hydro program.

2) Efficiency Manitoba plans to achieve this savings goal with 30% less staff than Manitoba Hydro relied on.,

3) Efficiency Manitoba will not be able to meet its natural gas savings target for the first year,

4) Efficiency Manitoba relies on new or updated sources for estimating participation, including consultations with delivery partners, survey data and recent permit applications, which may produce a step change increase in the level of saving expected for existing programs.,

5) Efficiency Manitoba's CRM system remains under development at this time and is untested, and

6) Efficiency Manitoba has yet to secure agreements with all the trade partners required for proposed new measures to serve hard to reach customer segments.

In summary, Efficiency Manitoba's 3-Year Plan includes a comprehensive list of program offerings for all customer sectors that are combined into program bundles for ease of marketing to customers. Accelerated pace of installs should be expected due to the ease with which customers can sign up for multiple measures through the program bundle interface (once the CRM system is fully deployed) and the addition of new qualifying applications (e.g., foundation insulation), plus new programs designed to attract hard to reach customer classes. Efficiency Manitoba should be able to recognize today that insufficient delivery capacity can derail success, because success is inextricably tied to the pace of installations implicit in its own plan. Without a prompt expansion in the ranks of delivery partners, and early and adequate marketing of the bundling approach and its simplicity for customers, it may be difficult for Efficiency Manitoba to meet its admirably ambitious goals. This concern if key to the first year's targets since ramp up of tools, messaging and partners will encumber the first year probably well into the year.

B. Performance metrics for Canada

According to the Consortium for Energy Efficiency's (CEE) 2018 Annual Report[24] overall Canadian electric energy efficiency program budgets for 2017 planned that customer rebates and incentives would account for over half (60 percent) of 2017 expenditures, then marketing and administration expenditures account for percent, followed by research and evaluation at four percent. The "other" category represents funds that could not be separated into the previous three categories, represented five percent. Per the CEE Report, the breakdown is nearly identical to that reported for 2016 expenditures. Figure 3 compares the electric efficiency incentives in particular with the Efficiency Manitoba electricity plan over the next three-years. Efficiency Manitoba is planning to spend nearly 64% of the electric budget on customer incentives over the three years.

Since this is the introduction or re-introduction of programs to customers, it makes sense for Efficiency Manitoba to have a somewhat higher incentive allocation to bring greater attention and differentiation to the programs; the incentives may be reduced as the programs mature. U.S. based breakdown in 2017 show incentives to customers at 43% in electric programs.

[24] Consortium for Energy Efficiency. State of the Efficiency Program Industry: Budgets, Expenditures, and Impacts 2018. http://www.cee1.org/annual-industry-reports, posted May 2019. © Copyright 2019 Consortium for Energy Efficiency. All rights reserved. The limitations of the data are many. First, this survey represents self-reported data by an individual or group of individuals within each responding organization. Although CEE and our collaborator, the American Gas Association, work closely with each responding organization to help respondents properly interpret survey questions and enter the correct information, the accuracy of the data is not verified outside of these efforts. Second, respondents provide data at different times during the data collection period from June to October, and not all program administrators report their information according to the calendar year. CEE and our collaborator have sought greater consistency in data collection from respondents over the years, however, the accuracy of the data is ultimately dependent upon each individual respondent's interpretation of the survey questions, ability to retrieve the relevant information, and verification of the data provided. Furthermore, variation in state policies and reporting requirements along with what we suspect is inconsistent use of terminology likely adds to variation.

The 2018 report reflects data for 302 utility and nonutility program administrators operating efficiency programs in all 50 US states, the District of Columbia, and eight Canadian provinces.

Canada Budget Allocation 2017

Efficiency Manitoba Budgets 2020-2023

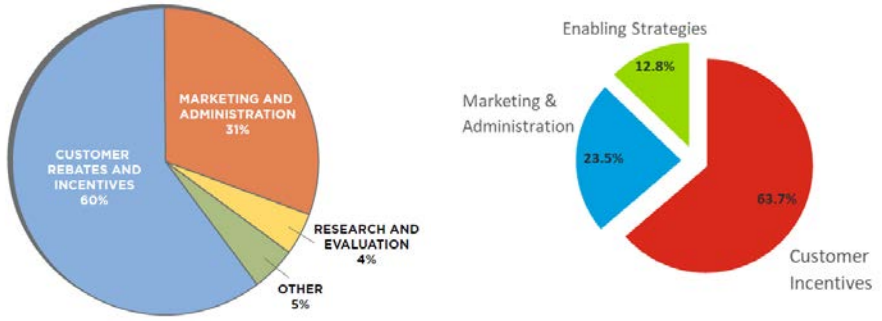


Figure 3: Cost Breakdowns Efficiency Manitoba Electric Program

Natural gas program incentives planned by Efficiency Manitoba are right in line with Canadian gas program incentive levels as a percent of total budget at 67% of budgeted expenditures as compared to 66% across Canada (see Figure 4). US natural gas budgets in 2017 included customer incentives of 56%.

Canada Budget Allocation 2017

Efficiency Manitoba Budgets 2020-2023

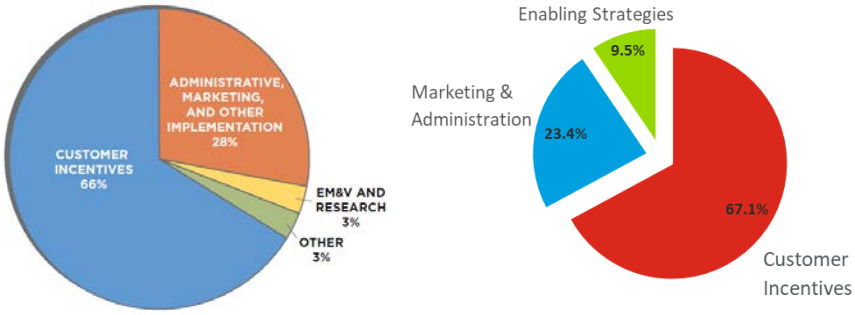


Figure 4: Comparison of Budgeted Expenditures Natural Gas

Spending Trends. Canadian DSM expenditures from 2013 to 2017 are shown in Figure 5 below providing information in US dollars and Canadian dollars and for both electric and gas. Electric DSM includes efficiency and demand response

programs. This graphic shows the stability of investment in such programs over the past five years[25].

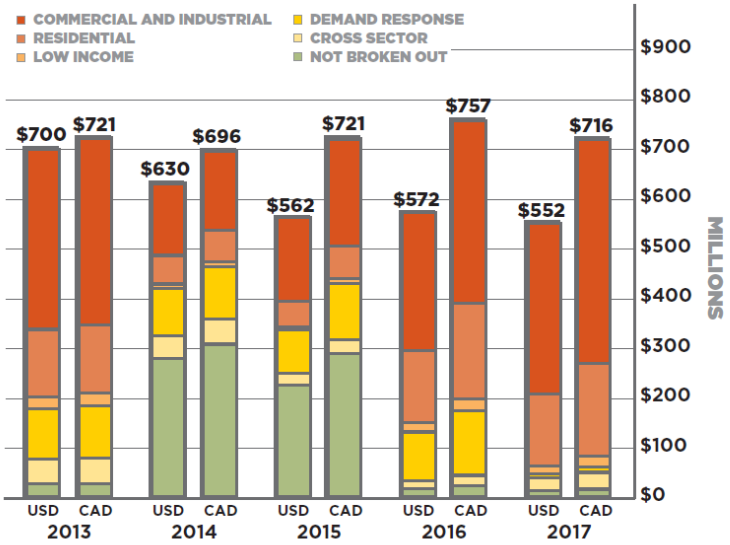


Figure 5: Canadian Budgeted Expenditures for Efficiency

The figure below shows spending by type of program for Canadian electric efficiency programs Efficiency Manitoba data are for the total budget over the three-year plan. One would expect this to differ based on its customer base and here we see that industrial is a bit larger in Manitoba.

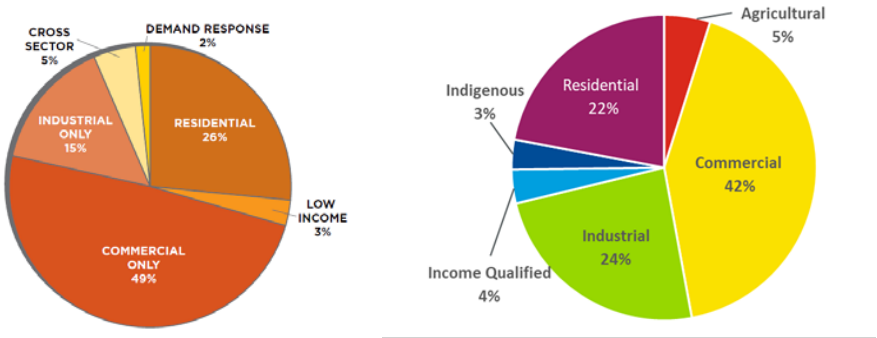


Figure 6: Comparison of Efficiency Manitoba's budget by sector to the Canadian average - electric

[25] According to the CEE Report one program administrator had significantly reduced spending in demand response programs in the 2017 budget. An increase in 2018 budgets is anticipated.

The most common electric energy efficiency program types by 2017 expenditures are highlighted in Table 2 which is reflective of the programs developed or modified by Efficiency Manitoba for the next three program years.

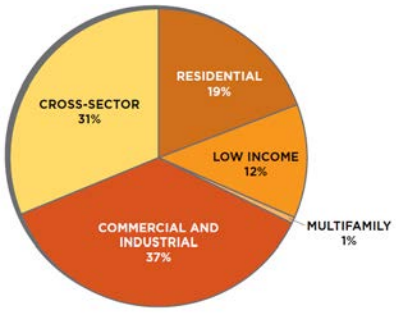
CUSTOMER CLASS	PROGRAM TYPE	2017 EXPENDITURES (USD)	2017 EXPENDITURES (CAD)
COMMERCIAL	PRESCRIPTIVE—LIGHTING	$96,761,915	$125,633,222
RESIDENTIAL	CONSUMER PRODUCT REBATE FOR LIGHTING	$87,705,837	$113,875,041
COMMERCIAL	RETROCOMMISSIONING	$65,980,439	$85,667,333
INDUSTRIAL	CUSTOM INDUSTRIAL OR AGRICULTURAL PROCESSES	$54,428,047	$70,668,000
COMMERCIAL	SMALL COMMERCIAL—PRESCRIPTIVE	$37,940,791	$49,261,363

Table 2: Most Common Canadian Electric Energy Efficiency Program Types by 2017 Expenditures

1. Natural Gas Spending

Figure 7 depicts program budgets for Canada and Efficiency Manitoba's natural gas spending by sector, and similar to the electric sector differences are due to the customer makeup in Manitoba.Figure X Natural Gas Budget by Sector Canada and Efficiency Manitoba

Canadian Budget 2017 Budget



Efficiency Manitoba 3-Year

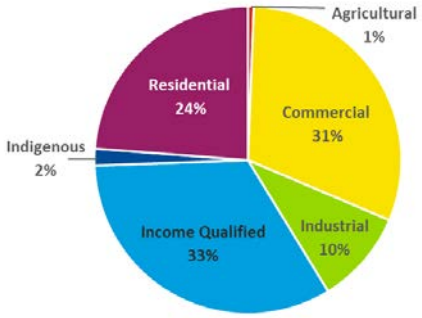


Figure 7: Comparison of Efficiency Manitoba's budget by sector to the Canadian average – natural gas

2. Observations

Based upon a review of this higher-level information, Efficiency Manitoba's Plan fit generally into the picture of practices in other jurisdictions from a sector breakdown and incentive concentration point of view – two areas of interest with regard to deliverability, as they relate to ensuring that the appropriate sectors are adequately targeted and that incentive levels will generate interest.

However, Efficiency Manitoba should monitor program rollout in early 2020 in order to make early tweaks to improve participation by gathering information from both participants and non-participants through process evaluation focus groups or other survey approaches to get a handle on areas for improvement.

Another concern relates to the reliance on the data for evaluation purposes, a potential challenge which we know Efficiency Manitoba leadership recognizes. Because the early program rollout will not be in the final system developed to track information, Efficiency Manitoba must be careful to gather and maintain the information necessary to ensure evaluations are complete.

C. Manitoba Hydro to Efficiency Manitoba transition and evolution

The foundation of the 3-Year Plan offerings is the existing Manitoba Hydro DSM program. Efficiency Manitoba's filing represents the continuation of most of these legacy Manitoba Hydro DSM program measures as well as acknowledging that Efficiency Manitoba becomes the surviving custodian

following completion of all individual contract assignments for DSM projects. It is possible that such contracts may need to be amended to reflect enhancements to existing programs and proposed new offers. And, as confirmed by Efficiency Manitoba, this process has only been initiated at this time:

> "Service provider procurement has been initiated and will be on-going. Manitoba Hydro's existing program delivery contracts have transferability clauses related to Efficiency Manitoba that can be executed as needed. Several new initiatives are planned for commencement in years two and three of the plan to allow time for program planning including the procurement of service providers." [26]

The 3-Year Plan emphasizes the addition of many enhancements to existing Manitoba Hydro DSM programs due to new incentives now available in Manitoba. In addition, Efficiency Manitoba has included new program offerings of its own. The table below showing a subset of the program bundles offered to the Commercial, Industrial and Agricultural Sector illustrates these different types of changes, where the difference is indicated in the Status column or in **red** if it is a new feature. The three types of program status are:

- Legacy Program Status Column: "**Manitoba Hydro program with enhancements**"
- Legacy Program Measure Change: "***NEW"**, i.e. a new measure application (e.g. Renovation – Building Envelope - Foundation), or customer sector (e.g., New Construction – School Sector)
- Brand new program: "**New Efficiency Manitoba Offer**" (e.g., New Construction – Deep Energy Retrofit.)

The table below illustrates the distribution of each of these status types across just the Commercial sector. The full version of this table lists similar program updates for programs targeted at the Residential, Indigenous and Industrial sectors.

[26] Daymark/EM 1-13 c), page 7 of 7

Program	Measures	Status
Renovation Offers	**Lighting Products:** - LED lamps (screw-in, T8, T5) - LED Specialty lamps (HID ballast, line voltage) - LED Fixtures - Backlit signage	Manitoba Hydro program with enhancements
	Lighting Controls - Occupancy Sensors - Control Systems	
	Building Envelope Products and Systems: - Surface and cavity insulation for roof, attic, wall, and foundation applications * NEW for foundation - Window systems including punched, in-fill, curtain wall, and storefront - Glazed doors including overhead, single-swinging, sliding, and garden	Manitoba Hydro program with enhancements
	Building Envelope Financial Assistance: - Incidental and dedicated air sealing *NEW - Blower door testing (for determining equivalent air leakeage) *NEW - Building component energy modelling for designing energy-efficient curtain wall and storefront systems	
HVAC and Controls Offers	**Heating Technologies:** - Condensing Gas Boilers - Condensing gas water heaters - Unit heaters *NEW - Infrared heaters *NEW - Geothermal (ground-source heat pumps)	Manitoba Hydro program with enhancements and new offers
	Cooling Technologies - Air cooled chillers *NEW - Geothermal (ground-source heat pumps)	
	Ventilation Technologies - CO_2 Sensors - HRVs / energy recovery ventilators	
	Other technologies - Variable Frequency Drives - Hotel occupancy sensors - Hotel packaged terminal heat pumps (PTHPs)	New Efficiency Manitoba offer
New Construction & High-Performance Building Offers	**New Buildings**	Manitoba Hydro programs with enhancements
	Enhanced Building Operations	
	Manitoba Race to Reduce *NEW for school sector	
	Energy Scoping Audits	
	Deep Energy Retrofits *NEW	New Efficiency Manitoba offer

Table 3: Commercial, Industrial, and Agricultural Offers, from Three-Year Plan Table A7.1

To understand and illustrate the importance and impact of just one of these categories of program enhancements, we prepared a summary table estimating the savings for programs/measures identified with the status "New Efficiency Manitoba Offer". The table below shows energy savings totaling 14.4 GWh for Electric and 0.81 million m^3 for Natural Gas. While these totals may seem small, they represent between 1% and 2% of the total Efficiency Manitoba programs respective plan budgets.

While the ability for the Efficiency Manitoba program to meet its savings targets summarized above is based on changes to many programs, this table highlights Efficiency Manitoba's effort to pursue innovative changes, and that even these nascent programs can have a measurable impact in the first three years and could grow over time as delivery partners gain experience with them. This table also shows Efficiency Manitoba has new offers to reach the Indigenous customer group as well as traditional residential and commercial market segments.

The list of programs that are identified as New Efficiency Manitoba Offerings are:

New Efficiency Manitoba Offerings - 3 Year Plan (*)		
Sector	**Bundle**	**Measure**
Residential	Direct Install	Online Home Questionnaire
Residential	Direct Install	Home Energy Check-Up
Residential	Home Renovation	Home Energy Audit
Residential	Home Renovation	Major Renovation
Residential	Emerging Tech	Solar Energy Program
Indigenous	Small Business	Product Rebates
Indigenous	Metis Inc Qual	Home EE Upgrades
Commercial	HVAC Controls	VFDs, Hotel Pumps, Sensors
Commercial	New Construction	Deep Energy Retrofits
Commercial	Custom	Strategic Energy Management Cohorts
(*) PUB/EM 1-33a-b		

Table 4: Savings Attributed to New Programs in the Efficiency Manitoba 3-Year Plan

D. Hard to reach customers

Efficiency Manitoba has provided a detailed plan with program and measure level project and savings targets and included new and enhanced programs to extend opportunities to participate to all Manitobans. Obtaining incremental electric savings of 5% over three years compared to the existing Manitoba Hydro DSM program savings, approximately equivalent to 1.5% per year, is the overall goal of the 3-Year Plan based on the different targets Efficiency Manitoba has set for individual programs. How effective Efficiency Manitoba will be at both the individual and overall program goals requires closer examination of aspects of these programs that contribute to successful delivery.

In this chapter we discuss how well the 3-Year Plan addresses Deliverability, which includes but is not limited to the following issues:

1) Has Efficiency Manitoba set targets for number of participants / projects that seem reasonable?
2) Is the pace required to meet these targets reasonable?
3) What market forces are assumed to drive participation, including customer as well as delivery partner incentives?
4) Are more Manitobans being served as a result?
5) What caveats should be identified in order to obtain missing information or further clarity in order to gain more confidence in Efficiency Manitoba's ability to deliver savings?

Each of these six deliverability issues will be addressed using sub-components of the Renovation Program Bundle to help illustrate whether Efficiency Manitoba has anticipated these concerns or not.

E. Methodology for reasonableness assessment

We can assess how realistic Efficiency Manitoba's targets for participation and savings are by comparing them to similar information for the same legacy Manitoba Hydro DSM programs. There appears to be a direct correspondence between some Efficiency Manitoba and Manitoba Hydro DSM programs, for example Commercial Building Envelope programs. But there may be other programs that have been improved, expanded or even subtly redefined in some way, making comparison difficult and requiring some interpretation on

our part, and thus would benefit from more explanation from Efficiency Manitoba.

Manitoba Hydro's latest DSM plan includes values for key metrics for the period 2006/07 through 2018/19. Using for illustration purposes Manitoba Hydro's description of its Commercial Building Envelope (CBE) insulation program for Windows, we found baseline values for the following metrics:

- Total Number of Projects
- Total Energy Savings in GWh, and Mil m3 where applicable
- Estimate of the overall size of the market in Manitoba, including:
  - Total potential projects
  - Approximate number of replacement projects done each year
  - Expected share of total market reached by 2018/19, i.e., penetration rate %

Additional metrics from Manitoba Hydro's text description of the program discussed:

- Expected share of total market reached by 2018/19, i.e., penetration rate %.
- Barriers to participation present in the market.

Using these metrics from Manitoba Hydro's DSM plan report, we are able to compare Efficiency Manitoba's targets to the legacy DSM program to make an initial Deliverability assessment. We supplement this assessment with reference to Efficiency Manitoba's description of what is new about each program bundle and how Efficiency Manitoba plans to address barriers to participation.

An example of this baseline information for the legacy program is discussed in greater detail further below.

Electric - List of top ten measures by savings, % of savings

Measure Name	Total Three-Year Adjusted Savings (GWh)	% of Total Program - level Savings	Incentive Cost (Utility Cost) $
Load Displacement - Project One	297.0	34%	$ 8,797,362
CLP Interior Fixtures	166.6	19%	$ 27,832,861
CLP Exterior Lighting	79.0	9%	$ 5,837,723
CLP TLEDs	41.9	5%	$ 5,077,437
Compressed Air	27.2	3%	$ 3,603,048
Load Displacement - Project Two	21.5	2%	$ 9,142,780
Gaskets & Strip Curtains - Electric	15.8	2%	$ -
Refrigerators & Freezers (Electric)	13.9	2%	$ 3,385,427
New Buildings 2.1	13.0	1%	$ 3,457,706
Load Displacement - Project Three	11.5	1%	$ 4,657,282
Total - Top Ten Measures	***687.3***	***78%***	***$ 71,791,626***
Total - All Measures	***880.1***		

Table 5: Top Ten Electric Measures by Savings

Natural Gas - List of top ten measures by savings, % of savings

Measure Name	Total Three-Year Savings (million m3)*	% of Total Savings	Incentive Cost (Utility Cost) $
NG Optimization Program	5.3	17%	$ 1,685,107
Industrial Project	4.0	13%	$ 1,136,409
CBEP Insulation - Heating	2.2	7%	$ 3,806,402
Large Projects yr2	2.0	6%	$ 385,975
2020 LRP (AEP Ind & Comm - Insulation) Natural Gas CB	1.8	6%	$ 6,548,745
Windows and Doors Gas_Windows	1.5	5%	$ 205,867
New Buildings 2.1	1.5	5%	$ 5,102,236
Boilers (Gas)	1.2	4%	$ 621,077
Large Projects yr3	1.0	3%	$ 469,261
Home Insulation Gas 3-yr combo	1.0	3%	$ 2,770,436
Total - Top Ten Measures	***21.5***	***69%***	***$ 22,731,515***
Total - All Measures*	***31.3***		

**Measure-level savings not adjusted for interactive effects.*

Table 6: Top Ten Natural Gas Measures by Savings

Daymark selected from these Top Ten tables for illustration of deliverability concerns discussed above a program bundle that corresponds closely to one that is also included in the legacy Manitoba Hydro DSM plan, the Commercial

Building Envelope lighting and insulation program. This bundle includes measures that represent approximately 35% of total electric program savings and 7% of total natural gas savings among the top ten programs in each category.

While the top ten approach does not provide an exhaustive list of all the programs in the 3-Year Plan, it does cover programs that account for most of the expected savings, lending support to our selection to illustrate the deliverability issues identified above in a detailed discussion below, as well as a discussion of how to improve transparency and program design for the Efficiency Manitoba plan.

We verified this program bundle selection by performing a high-level comparison of all program bundles in the 3-Year Plan Figure 3, shown below, to the legacy DSM programs listed in Manitoba Hydro's 2018/2019 DSM Plan. We expected that this would allow us to directly compare deliverability metrics for three of the Efficiency Manitoba program bundles: HVAC and Controls, Commercial Renovation, and just the Commercial Appliances segment of the Small Business and Appliances bundle.

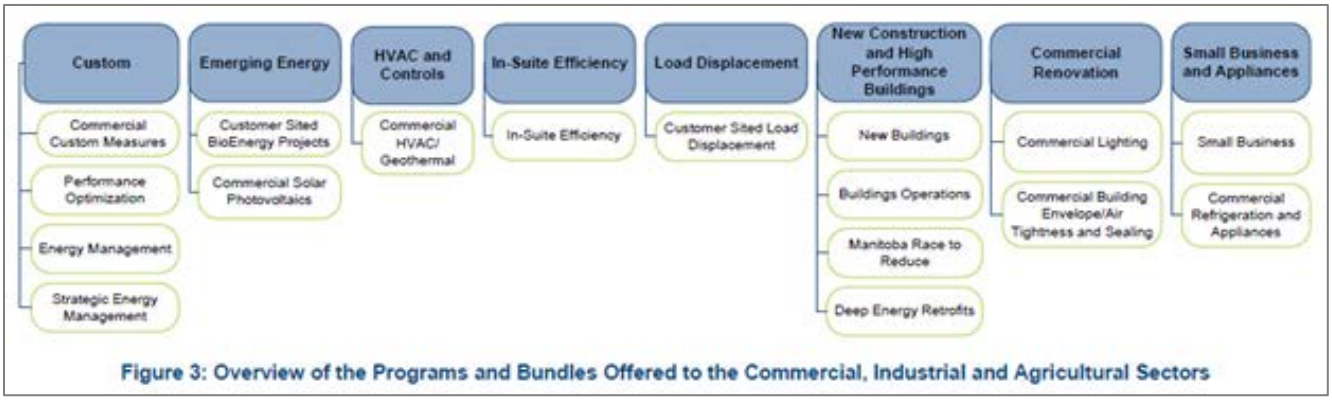


Figure 3: Overview of the Programs and Bundles Offered to the Commercial, Industrial and Agricultural Sectors

Figure 8: List of Programs and Bundles Offered to C&I, A Sectors from 3-Year Plan, Attachment 5

There are significant differences among many of the program bundles shown above to their Manitoba Hydro counterparts that meant we could not review all program bundles in Efficiency Manitoba's Figure 3. For example, after comparing the Performance Optimization programs in the Custom Bundle above to a description of Manitoba Hydro's existing Network Energy

Management Program, which appeared to involve software installations on customer PCs, we concluded that Efficiency Manitoba has taken a different approach to energy system management by relying on individuals acting as energy managers. These energy managers may be using software already installed, but the incentive available appears to cover personnel costs only. Of course, we discuss separately new programs for which there is no ready basis for comparison, e.g. the Emerging Energy and In-Suite Efficiency program bundles.

For reasons explained below, we were unable to directly compare the HVAC or Commercial Appliances bundles.

This left the Commercial Building Envelope (CBE) program bundle as offering the most direct comparison and therefore the best illustration of deliverability concerns. This is because the sub-programs within this bundle have identical names and almost identical composition as those included in the Manitoba Hydro 2018 DSM report. This comparison is provided in next section.

F. Program Bundle Evaluation

1. Overview of program

The Renovation Program Bundle combines savings generated by the Commercial Lighting and Commercial Building Envelope (CBE) programs. [27] We focused on the Commercial Lighting sub-component of the Renovation Program Bundle because it offered the most direct comparison to the existing Manitoba Hydro DSM program offering.

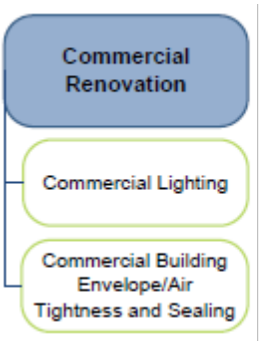
The Commercial Lighting program produces energy savings by replacing four different types of lighting fixtures plus two types of lighting control systems. The CBE program is expected to yield energy savings by replacing existing windows and doors with more energy efficient units, plus air sealing and insulation for roof, attic, wall and foundation applications to reduce heat and cooling loss. The CBE program includes insulation projects for buildings heated by natural gas as well as electricity.[28] However, only the CBE program for

[27] 3-Year Plan, Section A7.9.1, pdf Page 569, Econoler Final Report, Figure 3, Overview of the Programs and Bundles Offered to the Commercial, Industrial and Agricultural Sectors, p. 17.

[28] PUB/EM 1-33a-b, page 6 of 8, based on 3-Year Plan, Section A7, Table A7.1, page 5 of 47.

electric customers includes cooling projects, and within this sub-category incremental natural gas fired cooling equipment upgrades are offered[29].

This correspondence is illustrated in the figure below, which shows Efficiency Manitoba's Renovation Bundle of programs on the left and the individual Manitoba Hydro DSM programs listed on the right.



Programs	Participation Definition	2018/19 Participation	Capacity Savings (MW)	Energy Savings (GW.h)	Natural Gas Savings (million m³)	Utility Investment (millions $)
Commercial Lighting Program	No. of projects	1,700	15.0	60.9	-	$11.0
LED Roadway Lighting Conversion Program	No. of conversions	33,030	2.1	14.4	-	$11.5
Commercial Building Envelope - Windows Program	No. of projects	150	0.4	1.0	0.6	$0.9
Commercial Building Envelope - Insulation Program	No. of projects	270	1.5	3.2	1.1	$1.8

Figure 9: Manitoba Hydro's Commercial Renovation Programs

2. CBE Program Comparison Discussion

The Renovation Bundle includes three insulation sub-programs for the Commercial Building Envelope (CBE) program for lighting fixtures, windows and doors, and the building shell. The sub-program for which both Manitoba Hydro and Efficiency Manitoba provided a baseline metrics for total market and estimated projects per year is the CBE Windows program. Our source for this baseline information for the Manitoba Hydro CBE program is shown in the figure below including selected text and accompanying table with the metrics on Market Size and Penetration Rate and number of projects per year:

[29] 3-Year Plan, Section A7.9.1, pdf Page 569, Econoler Final Report, Figure 3, Overview of the Programs and Bundles Offered to the Commercial, Industrial and Agricultural Sectors, p. 17.

Commercial Building Envelope - Windows Program[30]

It is estimated that there are approximately 750 potential window replacement projects in Manitoba each year, of a total overall market of 27,000 potential projects.

In 2018/19, program participation is expected to be 150 projects, resulting in 1.0 GW.h and 0.4 MW of electric savings and 0.6 million cubic metres of gas savings. Combined with achievements to date, participation will be 2,023 projects resulting in 25.1 GW.h and 10.3 MW of electric savings and 3.9 million cubic metres of natural gas savings by the end of 2018/19. The program is forecast to reach 7.5% of the total potential market by the end of 2018/19.

	2006/07 to 2017/18*	2018/19	Total to 2018/19
No. of Projects	1,873	150	**2,023**
Capacity Savings (MW)	10.0	0.4	**10.3**
Energy Savings (GW.h)	24.1	1.0	**25.1**
Natural Gas Savings (million m³)	3.3	0.6	**3.9**
Utility Investment (Millions, $)	$17.3	$0.9	**$18.2**
Customer Investment (Millions, $)	$0.9	$3.9	**$4.8**
Total DSM Investment (Millions, $)	$18.2	$4.9	**$23.1**
Estimated Average Annual Bill Reduction per Customer (Electric): $213			
Estimated Average Annual Bill Reduction per Customer (Natural Gas): $412			

*Includes estimates for 2017/18

Table 10: Manitoba Hydro's Commercial Building Envelope – Windows Program Data

3. CBE Windows Program Deliverability Evaluation:

As discussed above, we find that a basic evaluation of whether Efficiency Manitoba's CBE Windows program savings will be achieved are influenced by the following deliverability issues:

1) Has Efficiency Manitoba set targets for number of participants / projects that seem reasonable?

   It is hard to question this definitively but Efficiency Manitoba's target for number of projects is higher than that for Manitoba Hydro but savings captured appears to be lower.

   What installation pace is required to meet these targets?

   Efficiency Manitoba is on a pace to increase market penetration by 2 percentage points over three years, or less than 1% per year, leaving a substantial segment of the market unserved. While this change may seem small it contributes to a risk of delivering on its expectations

2) If so, how much of the target market will be served?

[30] MH DSM Report March 2018, p. 21, and Centra Gas Manitoba Inc. 2019/20 General Rate Application Appendix 7.3, p. 43 of 204

Using Manitoba Hydro's estimate of Total Market, at the end of 3 years, market penetration would be 10% What with Efficiency Manitoba's estimate of the Target Market, which is an order of magnitude lower than Manitoba Hydro, the estimated 169 projects per year would require 4 years to reach at least 50% market saturation .

3) What market forces and other factors are assumed to drive participation, including customer as well as delivery partner incentives?

   Efficiency Manitoba states that the main drivers for the Renovation Bundle, of which the CBE program is a part, are financial incentives and technical assistance. Customers will engage with the contractor or consultant of their choosing. Trade allies must have sufficient expertise to help customers apply for incentives.[31]

4) Are more Manitobans being served as a result?

   A modest increase to 1g9 projects is forecast for Efficiency Manitoba with this program over the 150 Manitoba Hydro expected for 2018/19, but it is not clear if these are in different buildings or the same buildings served under the Manitoba Hydro program. So, it is not possible to say if more Manitobans are being served under this program.

5) What caveats should be identified in order to obtain missing information or further clarity in order to gain more confidence in Efficiency Manitoba's ability to deliver savings?

   Since this program appears to be fairly similar to the legacy Manitoba Hydro DSM program, any additional expertise required for Manitoba Hydro's existing stable of delivery partners should be minimal. In it important for delivery partners to become aware of new features such as the addition of foundation insulation and blower door testing, in order for delivery partners to increase savings – even if a legacy program building participates.

   We have focused on just the CBE Windows component of the Renovation Program Bundle for ease of comparability. But we can also say something about other Efficiency Manitoba programs that are not directly comparable to their legacy Manitoba Hydro counterparts by showing their respective projected number of project installs per year, as shown in the table below.

[31] 3-Year Plan, Appendix A, Section A7, pdf P. 380, p. 25 of 47, lines 276-279.

		MH Est for 2018/2019 (*)			EM 2020-2023 Avg /Year			
Bundle Sub-Group	Measure Group	No. of Projects	Est. Savings/Year GWh	Mil m^3	No. of Projects	Est. Savings/Year GWh	Mil m^3	comment
Renovation - CBE	Lighting Fixtures	1,700	63.36	-	1,544	87.49	-	*(2)*
Renovation - CBE	Insulation Windows and Doors	150	1.00	0.60	169	0.74	0.29	
Renovation - CBE	Program - Insulation Heating	270	3.20	1.10	2,122	2.21	0.84	*(1)*
Commercial Appliances	Kitchen Appliances	265	8.03	-	157	7.28	-	*(2)*
Commercial Appliances	Refrigeration	19	0.33	0.09	478	1.85	0.15	*(3)*
HVAC & Controls	HRV (incl ERV, VFD, Heaters, Chillers)	11	0.20	0.10	970	3.47	0.76	*(3)*
HVAC & Controls	CO2 Sensors	65	0.10	0.06	128	0.07	0.04	*(1)*
HVAC & Controls	Water Heaters	27	-	0.10	14	-	0.04	
HVAC & Controls	Boilers	112	-	1.23	25	-	0.40	
Subtotal		2,619	76	3	5,607	103	3	*(3)*

(*) Manitoba Hydro (MH) 2018 DSM Report
(1) less savings / more installs
(2) more savings / fewer installs
(3) more savings / more installs

Table 11: Efficiency Manitoba bundles with more installs and/or more savings

By comparing differences in number of installs across these programs, we can see that Efficiency Manitoba expects to meet its savings deliverability target with a step change in estimated number of projects for significant portion of its overall plan, further illustrating the reasons for the deliverability concerns discussed above.

The savings results for CBE Windows program should also provide a greater understanding of why energy savings are expected to be lower than the legacy program for other program bundles.

4. Hard to Reach

Regulation 119/2019, section 11c) says that, in evaluating the Plan, PUB must consider "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." Efficiency Manitoba has submitted a plan that meets and exceeds this goal. As shown in the chart below, the percentage of budget allocated to hard to reach programs are 6% for electric customers and 32% for natural gas programs.[32]

Figure 12: Hard to Reach Customers by Percentage of Budget

Daymark has confirmed that the percentage of the total Natural Gas budget does indeed equal 30% for Income Qualified and 2% for Indigenous in the table below.

[32] 3-Year Plan, Section 6, pdf p. 157, p. 1 of 18.

Customer segment/category	2020-23 Average		2017/2018
	Savings (%)	Budget (%)	Energy Consumption (%)
Industrial	29%	9%	
Agricultural	1%	1%	60.50%
Commercial	25%	27%	
Residential	37%	21%	
Income Qualified	7%	30%	33.90%
Indigenous	0.30%	2%	
Enabling Strategies	-	8%	-
Overhead	-	3%	-
Total	*100%*	*100%*	*100%*

Table 7: Electric Savings, Budget, and Energy Consumption by Sector in 3-Year Plan

Daymark also confirms that the share of the electric budget allocated to Income Qualified and Indigenous is 3% each respectively, and thus totals 6%.

Customer segment/category	2020-23 Average		2017/2018
	Savings (%)	Budget (%)	Energy Consumption (%)
Industrial	29%	9%	
Agricultural	1%	1%	60.50%
Commercial	25%	27%	
Residential	37%	21%	
Income Qualified	7%	30%	33.90%
Indigenous	0.30%	2%	
Enabling Strategies	-	8%	-
Overhead	-	3%	-
Total	*100%*	*100%*	*100%*

Table 8: Natural Gas Savings, Budget, and Energy Consumption by Sector in 3-Year Plan

The Income Qualified programs and the Indigenous programs are discussed in each of the next sections, respectively. It is also noteworthy to point out that while there are specific programs targeted to the Indigenous customer

segment as discussed below, members thereof may also participate in separate small business and residential programs as summarized in the table in the Indigenous section further below.[33]

a) Income Qualified Programs

(1) Overview

The Income Qualified Program is based on the legacy Manitoba Hydro Affordable Energy Program (AEP) that maintains existing incentives, while also adding a new incentive and making innovative changes to this program to increase savings and participation.[34]

Efficiency Manitoba's marketing approach also is similar to the legacy program. Efficiency Manitoba plans to continue working with marketers, community groups (including First Nation community associations), promote the program through advertising and holding customized information sessions. Efficiency Manitoba also commits to grow its contractor network in rural areas.[35]

The eligibility qualification for the 3-Year Plan has not changed and remains based on the same criteria requiring that household income must fall below 125% of Statistics Canada Low Income Threshold known as LICO 125. [36]

All financial incentives have been retained that minimize financial burden on low income customer by providing free insulation and LED light fixtures, and low on-bill financing for a high-efficiency gas *furnace* by charging $9.50/month for five years. [37]

Efficiency Manitoba's marketing approach also is similar to the legacy program. Efficiency Manitoba plans to continue working with marketers, community groups (including First Nation community associations), promote the program through advertising and holding customized information sessions.

Barriers to Participation:

[33] 3-Year Plan, pdf p. 334, Section A6, Table A6.1 Indigenous Customer Segment Offers, p. 6 of 23..

[34] 3-Year Plan, Appendix A, Section A5, p. 2 of 13, lines 29-31.

[35] 3-Year Plan, Appendix A, Section A5, p. 2 of 13, lines 32-35.

[36] MH 2018 DSM Report, Affordable Energy Program, p. 5, and 3-Year Plan, Section A5, p. 2 of 13.

[37] MH 2018 DSM Report, Affordable Energy Program, p. 5, and 3-Year Plan, Section A5, p. 7 of 13.

Both the legacy Manitoba Hydro and Efficiency Manitoba programs recognize the importance of targeting multi-unit residential buildings (MURBs) because residency can be substituted for a separate income qualification test that requires sharing tax return information.[38]

This reduces two barriers to participation: MURB owners and residents may be reluctant to sign up because the former pays the customer incentive while the latter receives the energy savings. It is also important to identify rental occupants who are separately metered, rather than pay rent including utilities, in order to interest them in participation and to monitor savings on their bill.

(2) Program Incentive Drivers

Efficiency Manitoba expanded financial incentives to include a rebate towards a high efficiency natural gas *boiler* of $3,000 and a free front load washing machine. But customers must wait until the 2nd year of the 3-Year Plan to avail themselves of this benefit.

Efficiency Manitoba appears to have pursued further customer segmentation besides the LICO 125 threshold: Efficiency Manitoba is working with Neighborhood Renewal Corporations to identify geo-targeted neighborhoods with older homes to approach more residents directly and function as an alternative means to by-pass the LICO 125 income qualification test.[39]

Efficiency Manitoba wants to enhance outreach and assistance to this customer segment by providing a dedicated energy advocate to help customers with the application process. Efficiency Manitoba will provide funding for the dedicated energy advocate's salary and enhanced marketing expenses and will rely on the community partner organizations to find and hire the energy advocate and report back to Efficiency Manitoba. If this is a new position, then Efficiency Manitoba is also supporting job-creation.

(3) Comparability to Best Practices

ACEEE completed a very recent study that recommends best practices to reach traditionally underserved markets who might not have sufficient funds to participate in discounted equipment upgrades. The first best practice is to

[38] 3-Year Plan, Section A5, p. 9 of 13.

[39] 3-Year Plan, Section A5, p. 9 of 13.

make sure that over the full loan term on-bill financing costs are no more than the expected savings (bill-neutral) or even below (bill-positive).[40]

The second best practice is to increase the pool of funds that can be used to offset program costs to achieve a bill-positive outcome for low-income customers. Efficiency Manitoba should investigate the availability of funds backed by financing instruments called Commercial Property Assess Clean Energy (C-PACE) for EE and renewable projects. If a similar instrument exists in Manitoba or elsewhere in Canada, it may be accessible to commercial property owners to finance up-front costs to be repaid over time through voluntary tax bill assessment.[41]

A third best practice that Efficiency Manitoba may be doing already but if not should consider, is to offer on-bill financing and C-PACE alternatives that allow the cost obligation (and savings) to remain with the property and rental unit meter even after the owner sells the property and renters move.

(4) Deliverability Drivers: Target Market, Budget, Marketing and Program Features

The Income Qualified program bundles represents a small percentage of the total plan, the electric energy component of Efficiency Manitoba's Income Qualified Program accounts for only 1% of total energy savings and 0.5% of total budget, while for the Natural Gas Portfolio includes the Income Qualified programs that are expected to provide 7% of energy savings and account for 30% of the budget. This is consistent with the Regulation that requires the Plan to allocate 5 percent its overall budget to hard to reach programs.[42]

Although these allocations seem modest, Efficiency Manitoba has demonstrated an earnest attempt to use this budget to extend its reach across this customer segment. Efficiency Manitoba has shown that it not only plans to meet the requirements of the Act[43], but also that it has a plan to reduce barriers to participation by working with community organizations. At this time, it appears that no member of group Efficiency Manitoba plans to partner

[40] ACEEE "Extending the Benefits of Nonresidential Energy Efficiency to Low-Income Communities", Report U191-, Nov 2019, p. 48.

[41] ACEEE "Extending the Benefits of Nonresidential Energy Efficiency to Low-Income Communities", Report U191-, Nov 2019, p. 49; C-PACE in the US is authorized by State legislation and can be provided by the government or through a third-party finance firm.

[42] 3-Year Plan, Section 1, p. 26 of 32, lines 224-227, and table on p. 27 of 32.

[43] 3-Year Plan, Section 2, Table 2.5 referencing Section 11(c) of Act, p. 26 of 27.

with to promote the Income Qualified program sits on the EEAG, including the example given of the "Neighborhood Renewal Corporations" throughout Manitoba.[44] However, their interests may be aligned with the organization Association of Manitoba Municipalities (AMM), who is a current member of the EEAG.[45]

The Manitoba Hydro DSM Affordable Energy Program estimates total market size at 110,000 homes excluding MURBs in Manitoba. As of 2018/19 Manitoba Hydro estimates that approximately 15,500 insulation customers and 3250 standard furnace customers remaining unserved in the market, which suggests about 85% saturation. The Efficiency Manitoba plan updated this data based on the 2017 Residential End Use Survey to show that the total number of homes that fall below the LICO 125 threshold equals 159,000. comprised of 111,000 single detached homes, 18,000 multifamily homes and 28,000 MURBs, and approximately 72%, or 115,000. of these homes are owner occupied while the remaining 28%, or 44,000 customers are renters.[46] This update to include a higher total number of units suggests that the market saturation rate is actually lower.[47] This residential structure distribution is fairly consistent with housing stock across the province; it is age of the structures and customer demographics that require enhance programs to meet the budget target.[48]

Efficiency Manitoba projects cumulative Income Qualified projects (at the measure level) totaling 25,299 (both electric and gas), which is almost the same as the number of apartment suites under the LICO 125 threshold[49], which could include single family homes in the geo-targeted communities. At the same time, Efficiency Manitoba has projected 18,300 retrofit projects (8,500 for natural gas and 9,800 for electric customers), which is well below their detailed measure level projection.[50] This discrepancy could be explained by one "retrofit" being comprised of energy audits, appliance and/or thermostat installations.

[44] 3-Year Plan, Section A5, p. 13 of 13, lines 241-242.
[45] 3-Year Plan, Section A2, p. 37 of 40, line 720.
[46] 3-Year Plan, Section A5, p. 3 of 3, lines 44-52.
[47] MH 2018 DSM Report, Affordable Energy Program, p. 5
[48] 3-Year Plan, Section A4, Figure A4.1, p. 9 of 38.
[49] MH 2018 DSM Report, Affordable Energy Program, p. 5
[50] 3-Year Plan, Attachment 3 – Technical Tables, pp. 512 and 518.

Efficiency Manitoba expects increased completion rates for the natural gas furnace incentive by adding a new "Decluttering Service" to prepare the customer site for installation. This will require hiring a separate service provider to assist traditional delivery partners who focus on appliance installation. While this addition adds to cost, it holds promise for increasing participation in other Income Qualified programs.

(5) Summary Evaluation

Efficiency Manitoba is maintaining an existing affordable energy program that successfully reaches the single-family home sector but needs more work to achieve a similar penetration of the MURB cohort. Efficiency Manitoba is expected to achieve its target savings because it is:

- pursuing efforts to connect with local organizations and pay for local residents to promote its programs
- conducting further market segmentation to identify micro-communities that represent opportunities to "meet low-income customers where they live" and reduce the requirement for them to self-identify as low-income
- Adding an innovative de-cluttering service, which may turn out to be a very cost-effective means to increase participation as well, because it shows not only sensitivity to income limitations, but also to senior residents who may not have friends and family members readily available to help them[51]
- Offering potential to qualify – starting in year two -- for a free washing machine and a discount on the cost of a high efficiency natural gas boiler

Success with achieving Income Qualified program savings targets is enhanced by the new features itemized above and the availability of most of the delivery partners by mid-2020, including for free insultation offers and the de-cluttering service, both of which require extended engagements before savings are realized. However, reaching this program's savings could be delayed by Efficiency Manitoba's acknowledgement that it won't be able to identify, or "pre-qualify", and secure service contracts for delivery partners to provide appliances (including the free washing machine) and thermostats until year two. [52]

[51] Daymark is aware of other jurisdictional programs where delayed installations have occurred and where delivery partners have taken this responsibility on themselves at the risk of not keeping appointments with other customers who are waiting for service. EM's solution should be considered for inclusion in other jurisdiction programs for this reason.

[52] 3-Year Plan, Section A5, p. 10 of 13.

The smart thermostat program delay until year two may be appropriate if Efficiency Manitoba's adjustment to participation in this program reflects the results of benchmarking against LICO 125 demographic information for home wifi availability, perhaps revealing that universal access to affordable internet service is lagging within this customer segment compared to non-low-income Manitobans.[53]

b) Indigenous Programs

(1) Overview

The Indigenous population has been signaled out for special focus in the energy efficiency programs in Manitoba for many years. The indigenous population includes;

- 63 First Nations
- 15,500 Homes
- 23,100 Businesses or Commercial Buildings

The Indigenous population has been a focus at the federal level as they continue to strive toward reconciliation of the past and establishing some degree of equity today for the indigenous people. The population of the indigenous people lives and works both on and off the reserve. Reserves are located in some of the most isolated parts of the province.

(2) Barriers to Participation

There are specific challenges to bring energy efficiency that clearly affect deliverability and costs to deliver;

- The special nature of condition of the structure for dwellings and business on the reserves
- Qualifying the segment of the indigenous population and businesses that are off reserve
- The distance from population centers and even from other First Nations reserves
- Lack of natural gas access
- Electric isolation of the Diesel Community and the cost structure that results
- Access to capital
- Higher occupancy of first Nations dwellings

[53] PUB/EM 1-13d-e, p. 7 of 7 and Attachment 1, page 1 of 1, column "How Participation is Determined"

The special nature of the indigenous population and businesses do provide some opportunities that can help overcome the challenges:

- Strong tribal and community organizations exist among the indigenous population as potential allies in marketing programs, delivering programs and even advising on the design of programs
- In these smaller communities the impacts to the local economy are easier to see
- The potential exists for Efficiency Manitoba programs to work in concert with or obtain supplemental funding from provincial and federal programs

To help overcome these barriers, Efficiency Manitoba will be establishing two to three First Nation Community Advocates. They have also pledged to work with AMC to utilize the indigenous population in supplier, vendor and consultant roles, and have held preliminary discussions with Manitoba Indigenous Housing Capacity Enhancement and Mobilization Initiative (MIHCEMI) on development of a First Nations' Building Code, with support from the Northern Manitoba First Nations and the Tribal Council. Further, Efficiency Manitoba has proposed to a volunteer working group with First Nations and Metis representation to discuss and address needs best suited to their needs. [54]

(3) Program Drivers

Just as with the Income Qualified portion of the Hard to Reach customer base, Efficiency Manitoba has designed specific energy efficiency bundles and programs for the Indigenous Group. Throughout the report and responses to IRs Efficiency Manitoba has made it clear that all programs are open to the Indigenous population.

We see the tables below showing savings and budget portions by sector relative to the size of the sector.

In electric we see that generally the savings portion is proportional to the budget. The sectors with the lowest savings compared to budget are not surprising the two hard to reach, Income Qualified and Indigenous people. Combined they use 6% of the budget for about 1.5% of the savings. They are slightly over the amount that the Regulations suggest should be a minimum to spend on this group.

[54] MKO/EM 1-12 a) and MKO/EM 1-32.

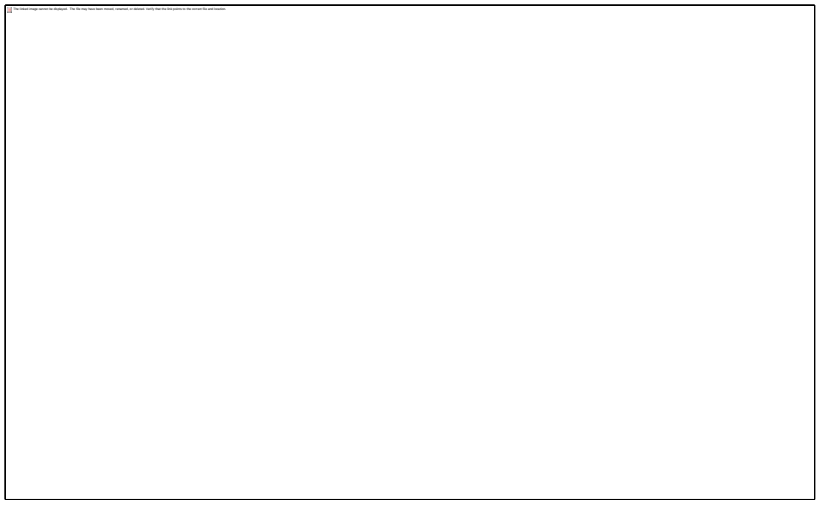


Table 9: Electric Savings, Budget, and Energy Consumption by Sector in 3-Year Plan

In natural gas we see that the savings portion is not proportional to the budget. The sectors with the lowest savings compared to budget include one of the hard to reach, the Indigenous sector and not surprising agriculture since we would expect lower relative use of natural gas compared to electricity in that sector. The Efficiency Manitoba plan will spend 30% of its budget within the Income qualified sector, with a highly incented bundle of programs that are expected to produce only 7% of the natural gas savings. The combined funding is over 6 times what the Regulations suggest should be a minimum to spend on this group.

Customer segment/category	2020-23 Average		2017/2018
	Savings (%)	Budget (%)	Energy Consumption (%)
Industrial	29%	9%	
Agricultural	1%	1%	60.50%
Commercial	25%	27%	
Residential	37%	21%	
Income Qualified	7%	30%	33.90%
Indigenous	0.30%	2%	
Enabling Strategies	-	8%	-
Overhead	-	3%	-
Total	*100%*	*100%*	*100%*

Table 10: Natural Gas Savings, Budget, and Energy Consumption by Sector in 3-Year Plan

The table below provides the programs and savings that make up the Indigenous bundle.

Program	Measures	Status	Delivery
Insulation and Direct Install Offers	**Home Energy Efficiency Upgrades:** - Insulation - Direct Install Measures - Smart Thermostats - ENERGY STAR® certified clothes washers	Existing program with enhancements	Participating First Nations (installation)
Small Business Offers	**Product Rebates:** - Aerators and showerheads - Lighting - Smart/programmable thermostats	New offer	Contracted third-party (supply, installation)
Community Geothermal	**Geothermal heat pumps**	Existing program with enhancements	Indigenous social enterprise (coordination), First Nation (installation)
Metis Income Qualified	**Home Energy Efficiency Upgrades:** - Insulation - Direct Install Measures - Smart Thermostats - ENERGY STAR® certified clothes washers	New Offer	Contracted third-party (installation)

Table 11: Hard to Reach Customer Programs and Measures in 3-Year Plan

The programs have been designed with much more aggressive incentives to overcome the significant barriers within this sector. The programs however are typically assuming a slight reduction in the amount of projects than Manitoba Hydro had been experiencing.

The plans for the Community Geothermal Program by EM have been further explained in response to PUB/EM 1-6 showing the intent to provide multiple points of engagement into the Indigenous groups, rather than just the program participant;

"A Community Driven Outcome Contract (CDOC) model is similar to a social impact bond (SIBS). With a CDOC or SIB, the upfront capital costs are provided by investors to a social-purpose organization to implement a new approach in solving a problem. For this model, several foundations and the communities themselves are providing the upfront investment. When implemented, the outcomes purchaser or buyer is typically government or in this case with energy savings, it will be Efficiency Manitoba.

A CDOC must meet the needs which have been prioritized by the communities. For the purpose of the Community Geothermal Program, the desired outcomes or needs set out by the participating communities are; skills training and job creation, lower utility costs, and reduced dependency on social assistance. Community members are trained to install and maintain the geothermal systems. The training and work required meets the need for skills training, job creation, and reduced dependency on social assistance. Once the systems are installed and running, this meets the need of reduced utility costs and saving energy. Efficiency Manitoba will "buy" the saved energy outcome through an outcomes purchase contract with Raven Indigenous Capital Partners, an Indigenous social finance intermediary. Previously, an incentive was used to buy down the cost of a loan which was used to finance the geothermal system. In this model, combining the purchasing power of all of the outcomes buyers means that the installed cost of the geothermal system is completely paid for and therefore First Nations communities are not being burdened with more community debt and are seeing more immediate savings.

Efficiency Manitoba's investment of $4900 per install in the CDOC model is the same as it was under the previous program."

(4) Comparability to Best Practices

The best practices for Income Qualified discussed above are equally appropriate for the Indigenous program in that they include efforts to reach traditionally underserved markets who might not have sufficient funds to participate in discounted equipment upgrades. These best practices are focused on increasing funding and offering on-bill financing:

- Making sure that over the full loan term on-bill financing costs are no more than the expected savings (bill-neutral) or even below (bill-positive)[55]
- Increasing the pool of funds that can be used to offset program costs to achieve a bill-positive outcome for customers
- Offering on-bill financing and C-PACE alternatives that allow the cost obligation (and savings) to remain with the property and rental unit meter even after the owner sells the property and renters move

Deliverability Drivers: Target Market, Budget, Marketing and Program Features. The key factor for success is whether EM can put its good ideas,

[55] ACEEE "Extending the Benefits of Nonresidential Energy Efficiency to Low-Income Communities", Report U191-, Nov 2019, p. 48.

promises and plans for engaging the First Nations populations into place and will it be effect. EM outlined its approach in response to PUB/EM 1-3 b, c below:

"b. The Plan will address barriers for participation in DSM initiatives as follows:

On Reserve

For targeted Indigenous programs, Efficiency Manitoba will work directly with the band and make program participation easier for First Nation on reserve customers by reducing administrative requirements for program participation. Recognizing that many communities do not have resources for administration, Efficiency Manitoba will remove as much administrative work as possible by using bulk application processes. Available program materials and resources will be provided to First Nations band offices and housing managers. In the absence of a housing manager, Efficiency Manitoba will work with First Nation to find out what best suits their needs to disseminate information. Efficiency Manitoba will have dedicated program staff to work closely with First Nations on reserve customers and be available for questions about programs. Additionally, material and labour costs for the Insulation and Direct Install offers for First Nation community members to perform the work will be funded by Efficiency Manitoba.

The Community Geothermal Program also reduces barriers to participation by eliminating upfront capital costs for First Nations and by providing training for local community members to perform the installs and any required future maintenance.

The Indigenous Small Business Program also reduces barriers to participation for small businesses by providing incentives to cover the majority of the cost for the upgrades offered under the program as well as supplying the materials needed for the upgrades. This applies to band owned buildings or businesses operated by First Nations in the community where the First Nation is paying the utility bill.

Off Reserve

A specific plan to address barriers to participation for First Nations living off reserve has not been developed; however, it should be noted that all energy efficiency programs will be available to First Nations off reserve customers. Efficiency Manitoba will engage with the established Energy Efficiency Advisory

Group (EEAG) to establish an Indigenous Energy Efficiency Working Group with First Nation and Metis representation to address barriers for First Nations off reserve if the current available programming is not addressing the needs.

c. Efficiency Manitoba will approach engagement with First Nations on-reserve customers in multiple ways. First, Efficiency Manitoba will contact all the First Nation communities to discuss and explain programs and offers. This will be done through different mediums; in-person, phone calls, emails, and distribution of materials. Secondly, Efficiency Manitoba will work to establish relationships with representatives from the First Nation Tribal Councils to capitalize on the Manitoba Indigenous Housing Capacity Enhancement and Mobilization Initiative that currently exists, which has representation from all 63 First Nations. Thirdly, Efficiency Manitoba will work to be a part of any intergovernmental working groups where Manitoba Hydro was previously the representative for energy efficiency. Lastly, in addition to the existing EEAG, Efficiency Manitoba will aim to establish an Indigenous Energy Efficiency Working Group with First Nation and Metis representation. The objective will be for regular communication and for Indigenous groups to receive the same information, share ideas, and create a dialogue for future program design or enhancements that will assist with meeting the needs of Indigenous customers and Efficiency Manitoba's targets. The engagement strategy will be an opportunity to find additional solutions to participation barriers in DSM initiatives, when required."

The main deliverability drivers for the Indigenous program are:

- Engaging with the Indigenous customer segment by working with key organizations that understand and represent their interests; throughout the responses to IRs and within the Plan document itself EM has made it clear that its intensions are to be highly engaged with the First Nations organizations, including establishing 2-3 First Nations Community Advocates. However, the number of organizations is dozens and that may be a stretch for truly being impactful to help assure accessibility to meaningful Indigenous program designs
- Providing training for members of those organizations and communities that may lead to local job growth;

5. Limitations to the Deliverability Assessment

Continuity across the Manitoba Hydro DSM and Efficiency Manitoba plans cannot be completely confirmed based on Efficiency Manitoba's plan. This is not just because Efficiency Manitoba includes new and significantly enhanced programs but also because Efficiency Manitoba programs that continue a legacy Manitoba Hydro DSM program appear to define participation differently. For example, the Efficiency Manitoba plan defines CBE insulation projects based on square footage, which may be equal to one or more projects in the parlance used in the Manitoba Hydro 2018 DSM report.

In addition, while the 3-Year Plan states that Efficiency Manitoba program administrators estimated total market size for each program, this estimate was found to be missing for some program components in the Market Analysis tab of the supporting measure-level spreadsheets. For example, this was the case for the Commercial Boiler – Natural Gas Program, which would seem to be capable of being informed by available industry data.

We also found that the CBE Lighting program for Interior Fixtures sized the Total Market to be much larger number than the number appearing in the Manitoba Hydro 2018 DSM report, a difference that should be explained by growth or different calculation methodology.

For its part, the Manitoba Hydro 2018 DSM report did not provide a Total Market estimate for every program either. This was true for the HVAC and Commercial Appliances program bundles. And although Manitoba Hydro did provide estimated projects installed per year for 2018/19, Efficiency Manitoba appears to expect a markedly faster rate of installs per year without an explanation why, leaving us to conclude that the definition of a project install may have been revised under Efficiency Manitoba's plan.

Finally, and just as important, we would like to understand whether the pace of annual installations for the Manitoba Hydro program was limited by budget or an accurate reflection of customer interest. If budget limited, this suggests a faster pace of market penetration might be possible. If instead it reflects less demand, this brings into question why Efficiency Manitoba believes their version of the same or similar program will produce a different result.

6. Summary of Findings

Based on our review of the overall program and comparison to the legacy Manitoba Hydro DSM program, it appears that Efficiency Manitoba has included fairly aggressive savings and participation targets for certain programs, including:

However, we do find savings at risk for the following specific reasons:

- Program Design:
  The Commercial Building Optimization programs are not clearly distinguished from similar programs, for example both In-Suite Efficiency and Renovation include LED lighting and HRV controls. Overlap such as this raises concerns about difficulty with marketing communication and training, as well as double counting of savings in the CRM system.

- Innovative components related to program design include:
  - The addition of a de-cluttering service that should prove very attractive from both the customer and the delivery partner perspective, and should become a best practice that Efficiency Manitoba can contribute to the literature once data are available
  - The Efficiency Manitoba plan includes financial support for a new position called the EBCx agent to support the Enhanced Building Operations program, without an explanation for how this position differs from Efficiency Manitoba staff, existing delivery partners or customer management[56]
- Resource Constraints:
  - There are two deliverability concerns related to resource constraints with the Efficiency Manitoba plan. The first is Efficiency Manitoba's acknowledgement that it will not meet its target for first year Natural Gas savings without an explanation why.[57] The second is Efficiency Manitoba's acknowledgement that it has yet to identify the delivery partners needed to serve its new programs, such as programs designed to serve hard to reach markets[58]
  - Aggressive market penetration assumptions based on ambitious savings targets
  - The comparison of the CBE Windows program above was an example of Efficiency Manitoba projecting lower savings captured per year, but it

[56] 3-Year Plan, pdf pp. 391-393.
[57] 3-Year Plan, pdf p. 78, page 3 of 26, lines 26-28.
[58] Response to DAYMARK/EM I-13a-f pdf pp. 324-329, pp. 2-7.

served the purpose of illustrating how the market penetration rate differs between Manitoba Hydro's and Efficiency Manitoba's plan. However, other programs such as CBE Shell Insulation, HVAC HRV Controls and Commercial Appliances assume an increase in project installations greater than 100% over the Manitoba Hydro program. Reaching this target may be difficult unless the ranks of delivery partners increases, training is sufficient and budgets for incentives are adequate

IV. COST/BENEFIT ANALYSIS

A. Introduction

Efficiency Manitoba has proposed a plan to deliver the 1.5% per year electricity savings and 0.75% per year natural gas savings specified as the targets in the Efficiency Manitoba Act and adopted in the Efficiency Manitoba Regulations. As one would expect with a large variation in the uses for electricity and natural gas energy spread across the full array of sectors and throughout the province, the Efficiency Manitoba Plan includes a long list of energy efficiency initiatives that collectively contribute to the total savings in electricity and natural gas. As you can see below, the savings achieved by Efficiency Manitoba include the efficiency that is gained as a result of government codes & standards that lower the use of energy by many pieces of equipment that are being put in service in Manitoba each year. The codes & standards savings will not be discussed in this section. This section explicitly examines the 77% of the total plan electric savings, and 68% percent for natural gas, that are attributed to the Efficiency Manitoba proposed electric and natural gas efficiency programs. See Table 12 below. The codes and standards projected savings are discussed further in the report.

Description	Electric		Natural Gas	
	Savings (GWh)	Percentage	Savings (Million cu. m.)	Percentage
Program-related savings	880.1	77%	25.7	68%
Codes and Standards Savings	256.0	23%	12.0	32%
Total Savings	***1136.1***	***100%***	***37.7***	***100%***

Table 12: Three-year Savings for Electric and Natural Gas Portfolios

There is extensive discussion in our report regarding the risks or concerns relative to whether the efficiency program part of the Plan will deliver the 880 GWh of savings in the above table. In this section, except for sensitivity analysis toward the end of the section, the review of cost effectiveness will not focus on any risk of measures, programs, or bundles falling short of the estimates provided by Efficiency Manitoba, but rather on the cost effectiveness of the programs, bundles, and measures proposed, assuming they perform as projected.

The table above shows the savings at the portfolio level. Naturally, it is impossible to perform cost effectiveness analysis at the portfolio level. Efficiency Manitoba's focus for cost effectiveness was at the bundle or program level. As discussed in the Deliverability Section, in order to reach the six sectors of the Manitoba customer base, Efficiency Manitoba is sponsoring 21 bundled program offerings for electric and 17 for natural gas. Within the bundles there are 35 electric programs covering over 200 measures, while correspondingly there are 26 programs and about 100 measures utilized within the bundles to create natural gas savings. To review cost effectiveness, Daymark found that insights would be gained by exploring cost effectiveness at the measure level as well.

1. Value creation in addition to energy savings

The Act itself requires, not only that the savings targets be met, but that Efficiency Manitoba analyze the cost effectiveness of its proposed initiatives. Cost effective programs mean that value is created in Manitoba. The costs of Manitoba Hydro and Centra decrease when energy efficiency occurs.

Regulation 119/2019 further defines this requirement, stating that cost effectiveness should be analyzed by comparing "the levelized cost to Efficiency Manitoba" of the net electrical or gas savings resulting from efficiency initiatives to "the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives." This is, in fact, a commonly-used approach to testing the cost-effectiveness of utility programs, slightly adapted to account for the fact that Efficiency Manitoba is an independent entity funded by the utility, whose activities are intended to benefit the utility and its customers. The expectation that is implied is that Efficiency Manitoba will be able to reach the savings targets established with initiatives that have been determined to be cost effective. However, Efficiency Manitoba is expected to propose and execute a plan that meets the targets even if the cost

effectiveness analysis reveals initiatives where the benefits do not outweigh the costs.

Efficiency Manitoba completed the required analysis and reported the results in the Plan. In reporting these results, Efficiency Manitoba reported not only the overall cost effectiveness of its proposed initiatives at the broad portfolio level (natural gas and electricity) and at the "program bundle" level, but also cost effectiveness results for nineteen individual program bundles grouped by six different customer segments.

The table below shows that in its electric portfolio Efficiency Manitoba expects its plan to create significant value measured on a net present value (or NPV) basis, $345 million, specifically. The value created within each sector for specific bundles of initiatives will vary depending on the scope of the savings achieved and the extent of cost effectiveness within the measures that comprise the bundle.

The table also shows that the natural gas portfolio, while achieving the targets for savings specified in the Efficiency Manitoba Act and Regulations, is essentially breaking even on an NPV basis. Since the natural gas portfolio is made up of many measures within 17 bundles, one would expect that some specific bundles do not produce positive NPVs. This was discussed and significant visibility provided by Efficiency Manitoba in the Plan report. Daymark will offer additional visibility and suggest some insights gained in its review.

Description	Total Three-Year Energy Savings (GWh or million cu m)	PACT Net Benefits ($ Million)	PACT Ratio
2020-2023 Electric EE Plan	880.1	345.1	3.27
2020-2023 Natural Gas EE Plan	25.7	(0.8)	0.99

Table 13: Savings and PACT Net Benefits and Ratio at the Portfolio-level

2. Daymark's approach

As part of our review of the overall Efficiency Manitoba Plan, Daymark has been asked to review Efficiency Manitoba's cost effectiveness analysis. The review included the examination of the filing of the Plan, including appendices, issuing Information Requests, reviewing responses to the Information Requests from all parties, and a detailed examination of all the workpapers Efficiency Manitoba used to develop the Plan in the form of several excel workbooks, provided to Daymark with the signing of a Confidentiality Agreement.

The workpapers allowed Daymark to look at methodologies; details regarding budgets; bundle, program and measure level savings in terms of energy and dollars; the marginal values for electric and natural gas energy provided to Efficiency Manitoba by Manitoba Hydro/Centra; the metrics calculated and other information. Daymark's understanding is that Commercially Sensitive Information (CSI) in this Matter is limited to the marginal values for electricity and natural gas, Centra's forecasted volume of natural gas,[59] and information that could lead to the association of any energy cost or consumption data to a specific customer. CSI is to be protected by Daymark in its reports and responses to Information Requests and during appearances at hearings, such that any information that, when combined with other public information, would allow someone to calculate the CSI data defined earlier would require redacting.

Several technical conference calls were held with Efficiency Manitoba staff to assure Daymark's understanding of the work papers.

In our review, presented below, Daymark focused on several areas:

- the accuracy of Efficiency Manitoba's analysis
- the methodologies used by Efficiency Manitoba to determine its cost effectiveness metrics
- the assumptions used by Efficiency Manitoba in the Cost Effectiveness analyses

Daymark also examined cost effectiveness by reviewing the information and results on a more granular or disaggregated level. As we discussed above, there are 38 total electric and natural gas delivery bundles encompassing over 300

[59] Centra's natural gas load forecast information is inclusive of customer usage coefficients, forecast purchased gas volume information, impact of weather on Manitoba market demand and gas supply operations, forecast and actual average use per customer and actual and forecast effective heating degree-days.

actual measures that when installed and operated consume less electricity or natural gas. Our analysis includes breaking cost effectiveness results down to the level of individual measures.

Daymark was specifically asked to look at cost effectiveness through the lens of some alternative methodologies and metrics that are commonly used in energy efficiency evaluations. This effort will bring more visibility to some of the economic drivers of the overall plan and allow Daymark to discuss these and provide information to the PUB, Efficiency Manitoba and the stakeholders involved in the review. This should allow the parties to have additional information for consideration and should facilitate insights into the impacts of the Efficiency Manitoba Plan.

Lastly, the Daymark review incorporated some sensitivity analysis by changing key assumptions, given there is uncertainty regarding the forecast of certain parameters.

The discussion of the observation and insights from the review of the cost effectiveness analyses that support the development of the three-year Efficiency Manitoba Plan is conducted mostly at the bundle level below, even though much of the inspection and reaggregation of the Daymark analysis was conducted at the specific measure level. Daymark has chosen to provide tables and figures that do not contain Commercially Sensitive Information either explicitly or that can be derived by combining numbers within the report, this section included. The analysis and review process provided Daymark with full visibility of the CSI information; however, Daymark believes that the discussion of its review, findings and insights can be communicated without including information that would need to be redacted.

B. Review of Efficiency Manitoba cost effectiveness analysis

Efficiency Manitoba is proposing a total budget of $209.6 million for its electric and natural gas portfolio for its 2020 – 2023 Plan. Table **14**[60] shows the annual budget proposed for both the electric and natural gas portfolios. The cost effectiveness analyses performed by Efficiency Manitoba were conducted with significant disaggregation and activity cost estimation breaking up the over $200 million proposed spending in the three-year plan.

[60] 2020-2023 Efficiency Plan, Section 1, pdf page 21 of 591.

Annual Budget (Million $)	2020/21	2021/22	2022/23	Total
Electric EE Plan	44.55	51.15	50.98	146.68
Natural Gas EE Plan	18.64	21.27	23.05	62.96
Total Annual Budget	*63.19*	*72.43*	*74.03*	*209.64*

Table 14: Proposed Annual Budget for Electric and Natural gas portfolio Plan for 2020-2023 Period.

1. Overall accuracy of the costs and benefits information

In its treatment of costs and savings, Efficiency Manitoba did considerable work to identify the costs of each specific activity necessary to support the creation, promotion, oversight and delivery of the different program. The breakdown is discussed more below. In its review and utilization of the spreadsheets, workpapers and models provided by Efficiency Manitoba, Daymark did not encounter any modeling or spreadsheet-level errors. The linkage of the detailed measure-level activity costs and savings feeding into program and bundle cost effectiveness analyses was handled with intricate spreadsheet modeling.

Savings estimates were built up from individual estimates of measure-specific savings from programming to help ensure that savings counted represented savings attributable to Efficiency Manitoba programs and not to other factors, while addressing key factors that can erode projected savings over time.

2. Methodologies used by Efficiency Manitoba

The proposed budget for 2020/23 Efficiency Plan includes incentive costs as well as costs to support administrative activities - program design, administration, customer support, program delivery, and corporate overhead.[61] Efficiency Manitoba estimated these different cost categories at different levels of granularity. The incentive cost was estimated at the measure level. Efficiency

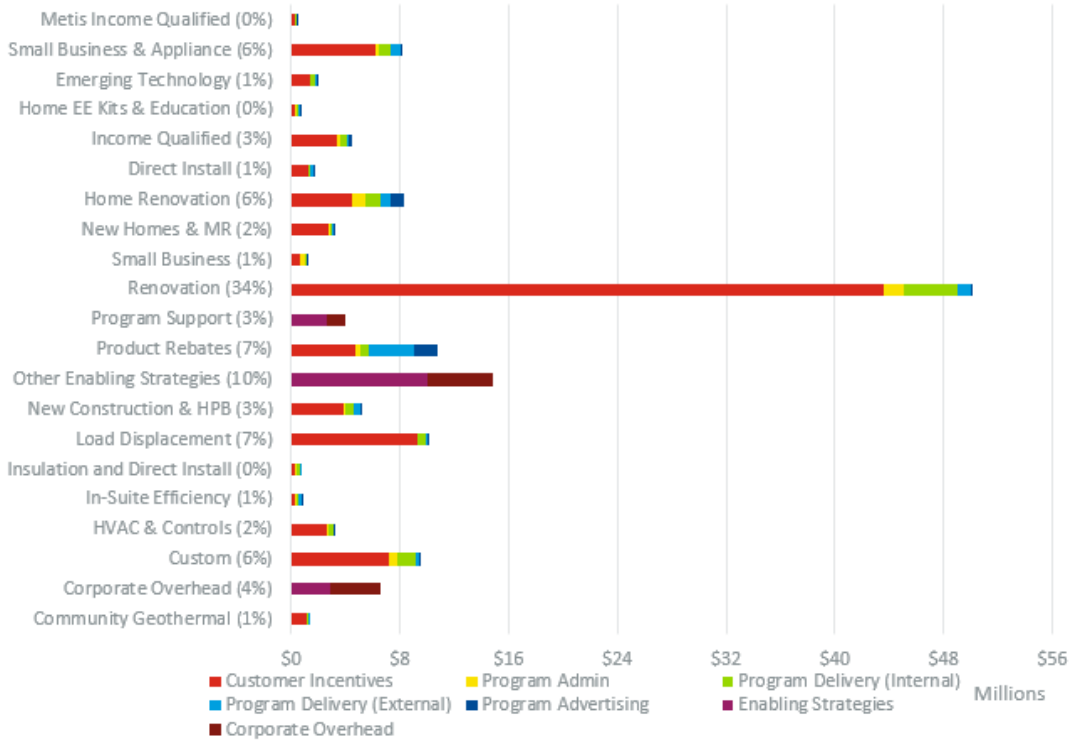
[61] Incentives represent the financial contribution made by EM for installing energy efficiency measures and programs. Program delivery costs represent budget associated with hiring and supporting third-party providers for program delivery functions such as direct install and program rebate offers. Program Administrative portion of the budget represents costs to support EM staff for designing, managing, administering, and supporting the programming. Program advertising includes budgeted amounts for specific programs that are required to achieve the forecasted participation and resulting energy savings. Enabling strategies include general energy efficiency support activities by customer segment that are not specific to a program or offer. Corporate overheard covers cost associated with functions such as leadership and expenses related with office, IT, and corporate support. (2020/23 Efficiency Plan, pdf page 217 – 221 of 591)

Manitoba also included direct program administration cost related to delivering specific measures in the measure-level analysis. The costs associated with program delivery, program advertising, and program administration were added at the program level, whereas program support costs, corporate overhead, and costs to support enabling strategies initiatives were estimated at the portfolio-level.

The further breakdown of cost categories at the Bundle level is presented in Figure 13 for the electric portfolio and in Figure 14 for the natural gas portfolio. These figures illustrate the detail used to estimate the costs of the measures, programs and bundles.

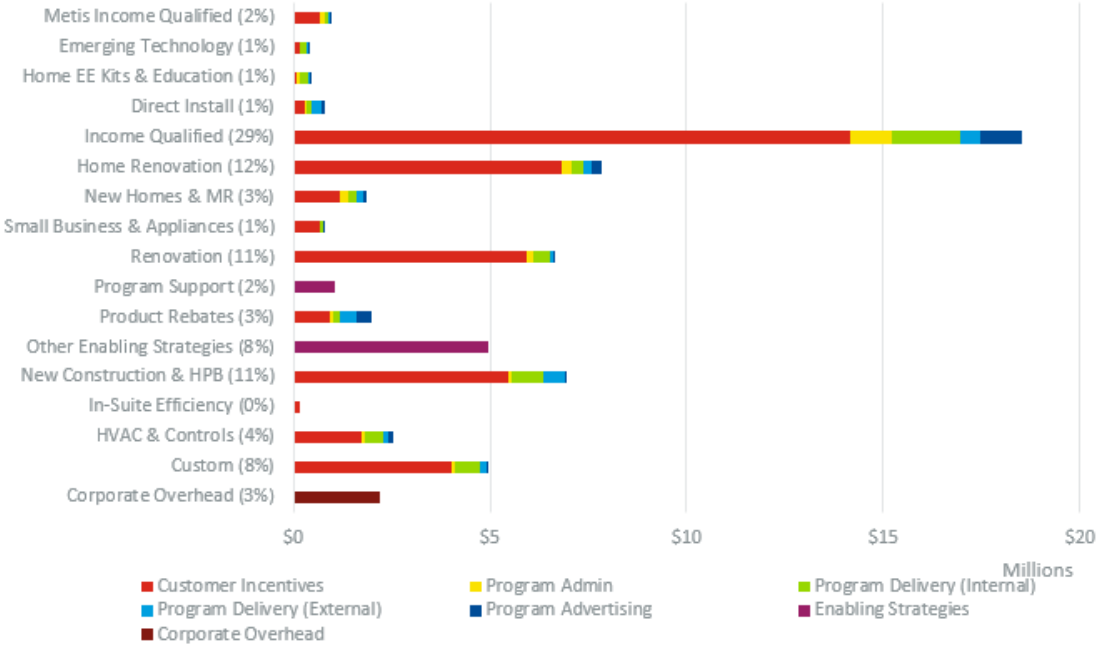
Within Figure 13 we see that there is indeed a considerable variation in the funding of the different bundles within the Plan. This variation is dependent on the potential energy savings opportunity available within the measures delivered in the bundle. Seven of the eighteen electric bundles each represent 6% or more of the electric portfolio budget. Figure 13 also shows that the Renovation Bundle receives about 1/3 of the total electric budget.

Figure **14** shows the spread of funding through the 17 bundles in the natural gas portfolio. Six of the bundles each represent 8% or more of the natural gas portfolio budget. The Income Qualified bundle represents almost 30% of the natural gas portfolio budget.



Percentage in y-axis represents the share of total three-year electric budget for each bundle.

Figure 13: Electric Portfolio Bundle Costs



Percentage in y-axis represents the share of total three-year Natural gas budget for each Bundle.

Figure 14: Natural Gas Energy Portfolio Bundle Costs

a) Derivation of energy savings in Efficiency Manitoba's analysis

Efficiency Manitoba performed detailed analyses to estimate savings at the measure level. For each measure/initiative, Efficiency Manitoba estimated quantities of installation or adoption of a measure or group of similar measures included in each year of the Plan. Efficiency Manitoba then used savings per unit to calculate the savings associated with each measure. The measure-level savings numbers were then rolled up to generate program-level and bundle-level savings. In addition to the program-related savings, Efficiency Manitoba also considered Codes & Standards savings, which are discussed in the later part of the Report.

Efficiency Manitoba included several adjustments while estimating measure-level savings. Specifically, the analysis accounted for "natural conservation[62]," free-ridership, and free drivers (spill over), while estimating annual incremental program-driven sales. Natural conservation refers to a measure sponsored by a program that is installed or implemented without participation in the program sponsoring that measure. During the technical conference, Efficiency

[62] Natural conservation, as defined by Efficiency Manitoba, is the estimation of annual energy efficiency sales if the program had never been launched.

Manitoba mentioned that the values used for these adjustments are based on historical program information from Manitoba Hydro and on market analysis. Free Ridership estimates vary among the electric and natural gas measures. Free rider level assumptions are frequently set around twenty or thirty percent, but in some cases, the assumed free rider impact is zero, and in other cases, it can be 60%. The total incentive is based on total annual rebates participation, which includes both program-driven rebated sales and free-ridership. Free-ridership accounts for any participants of the program that would have installed measures without financial incentives offered via programs.

In order to adjust per-unit savings, which is another input in estimated total energy savings, Efficiency Manitoba also included a "persistence factor" for each measure in its analysis. The persistence factor, which is expressed in terms of percentage, accounts for any failure, early replacement, and any uninstalled products. Efficiency Manitoba mentioned in the filing that the persistence factor is determined for each technology based on a number of factors, including customer surveys, engineering estimates, historical program experiences and industry research.[63]

The analysis then used measure-life information to calculate savings in each year for each measure. The energy savings information, along with the marginal values of energy and capacity (only for electrical savings), was used to estimate monetary benefits resulting from energy savings. In making this calculation, Efficiency Manitoba used marginal values of electrical energy and capacity based on on-peak and off-peak seasonal values developed by Manitoba Hydro.[64] Similarly, natural gas marginal values are based on natural gas primary pricing and natural gas purchasing and transportation costs.[65]

This detailed measure-level information, aggregated up to programs then bundles, yields the information in the tables below. The electric bundles distribution of savings shows that the bundles targeted at commercial and industrial customers, and agriculture, produce over 90% of the savings of the plan. However, examined more closely, over 70% of total electric portfolio savings comes from two bundles within the "Commercial, industrial and

[63] 2020/23 Efficiency Plan, pdf page 227 of 591, Line 475 – 482.
[64] 2020/23 Efficiency Plan, pdf page 130 & pdf page 228.
[65] 2020/23 Efficiency Plan, pdf page 229

agricultural" sector: "Renovation" and "Load displacement." This concentration is discussed in the Deliverability section of this report.

Sector	DSM Bundle	Total Three-Year Savings (Kwh)	Savings %
Residential	Direct Install	5,693,673	0.6%
	Product Rebates	34,696,632	3.9%
	Home Renovation	15,278,433	1.7%
	New Homes $ MR	10,612,322	1.2%
	Home EE Kits & Education	2,507,292	0.3%
Income Qualified Programs	Income Qualified	7,881,921	0.9%
Indigenous Programs	Insulation and Direct Install	791,367	0.1%
	Small Business	1,185,774	0.1%
	Metis Income Qualified	554,441	0.1%
	Community Geothermal	3,255,840	0.4%
Commercial, Industrial, & Agriculture	Small Business & Appliance	45,655,479	5.2%
	In Suite Efficiency	3,019,822	0.3%
	Renovation	309,292,587	35.1%
	HVAC & Controls	10,312,458	1.2%
	New Construction & HPB	21,915,904	2.5%
	Custom	70,646,282	8.0%
	Load Displacement	329,967,000	37.5%
Emerging Technology Program	Emerging Technology	6,880,972	0.8%
Total		***880,148,200***	***100%***

Table 15: Three-year Savings by DSM Bundle – Electric Portfolio

The natural gas bundles distribution of savings shows that the bundles targeted at commercial and industrial customers and agriculture produce only about 2/3 of the natural gas savings. Specifically, the savings from the Income Qualified segment within the natural gas portfolio is much more significant than savings from the Income Qualified segment within the electric portfolio.

Efficiency Manitoba also includes in its savings estimates projected interactive effects for some programs, which are discussed below.

Sector	DSM Bundle	Total Three-Year Savings (m3)	Savings %
Residential	Direct Install	499,384	1.9%
	Product Rebates	1,205,670	4.7%
	Home Renovation	2,737,423	10.6%
	New Homes $ MR	401,910	1.6%
	Home EE Kits & Education	139,893	0.5%
Income Qualified Programs	Income Qualified	3,237,979	12.6%
Indigenous Programs	Metis Income Qualified	157,774	0.6%
Commercial, Industrial, & Agriculture	Small Business & Appliance	958,599	3.7%
	In Suite Efficiency	346,736	1.3%
	Renovation	3,387,948	13.2%
	HVAC & Controls	2,268,681	8.8%
	New Construction & HPB	2,287,686	8.9%
	Custom	13,348,583	51.9%
Emerging Technology	Emerging Technology	332,286	1.3%
Interactive Effects	Interactive Effects	(5,585,543)	-21.7%
Total		***25,725,008***	***100%***

**Note- Bundle-level PACT values do not account for interactive effects.*

Table 16: Three-year savings by DSM Bundle – Natural Gas

b) Measure life

After reviewing all the data in the worksheets and developing an understanding of how the savings, costs and cost effectiveness numbers in the Plan are all derived from measure characteristics, Daymark determined that additional insight into a number of important issues, including the long term impact of the three-year plan and the meaning of cost-effectiveness metrics such as net present value creation, could be provided if we first looked at the make-up of the electric and natural gas portfolio in terms of the life of the individual measures that make them up. The tables below were produced from the detailed worksheets provided by Efficiency Manitoba and shows measure savings by different five-year measure life groups. The chart not only shows the total savings associated with each group of measures but provides the cumulative impacts of the measures from the shortest-lived to the longest-lived. So, for example, for the first measure life group (measures with a lifespan

of 1-5 years), the measures expected in the plan total 42% of projected three-year electric portfolio savings. For the second group of measures (measures with a lifespan of 6-10 years) the percent of total savings is 3%, and for the third group (11-15 years), the percent of total savings is 39%. The cumulative column shows that these three groups total 84% -- that is, it shows that 84% of the electric savings project in the Plan come from measures with expected lives of 15 years or less.

In the natural gas measures table, the same format is used. The table shows that only 22% of the projected natural gas savings comes from measures with lives of 15 years or less.

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %
1-5	371,112,450	42%	42%
6-10	27,286,730	3%	45%
11-15	345,589,248	39%	84%
16-20	76,082,351	9%	93%
21-25	42,615,692	5%	98%
26-30	12,264,138	1%	99%
31+	5,767,240	1%	100%
Total	*880,717,849*		

Table 17: Savings by measure-life strata - electric

Year Range	Total Three-Year Savings (m3)*	Savings as % of Total	Cumulative Savings %
1-5	1,112,134	4%	4%
6-10	1,070,171	3%	7%
11-15	4,785,178	15%	22%
16-20	7,843,158	25%	47%
21-25	13,344,427	43%	90%
26-30	2,864,947	9%	99%
31+	162,666	1%	100%
Total	***31,182,679***		

**Does not include program-level interactive effects.*

Table 18: Savings by measure-life strata - natural gas

This variation of the measure life among the portfolios is another factor that is relevant to a consideration of the economics of the measures.

c) Cost effectiveness – a positive net present value perspective

As discussed earlier, Regulation 119/2019 further defines the requirement to analyze cost effectiveness, stating that cost effectiveness should be analyzed by comparing "the levelized cost to Efficiency Manitoba" of the net electrical or gas savings resulting from efficiency initiatives to "the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives."

The most common determination of any investment, and of the funding of efficiency programs (and Efficiency Manitoba in particular) as an investment by the province, is to determine whether the value of the program is positive, in that the present value of all the costs are less than the present value of all the benefits.

To calculate this, one can begin with benefits. Each bundle contains energy savings projections for each measure in each year that the measure is in place. So, a bundle would have an energy savings value that would equal the total of the annual savings produced by each of its measures. The "Present Value" of those savings is a calculation of what all those savings are worth today using a discount factor to adjust for the fact that savings are spread out over thirty years (on the principle that a dollar I will receive in thirty years is worth less to

me today than a dollar I can receive immediately). The “Net” in “Net Present Value” reflects the next step, which involves subtracting the present costs of the program from the present value of the program. (Exactly which costs and savings should be counted is an analytical question related to the choice of different cost-benefit tests, an issue which we will discuss later.) The first metric that was produced by Efficiency Manitoba shows the NPV of each bundle over 30 years, calculated incorporating the fact that measures with 5-year life spans will only affect, at most, seven years of savings (i.e., a measure installed in year 3 is project to be in place only through year 7).

The table below, for electric portfolio bundles, shows that, while the energy savings from bundles targeted at the residential, income qualified and indigenous sectors produce less than 10% of the energy savings (in kWh), they produce 14% of the value (NPV) created from the electric portfolio. The electric portfolio table also shows that 50% of the value is created in the Renovation program that is extended to commercial, industrial and agricultural sector customers.

The table for natural gas bundles provides a very different picture. If you recall, the Efficiency Manitoba report and Table 18 showed that the NPV of the overall natural gas portfolio was approximately zero. The bundles for the residential, income qualified and indigenous sector all show a negative NPV, except for the home renovation bundle. This means that, from a simple utility cost effectiveness perspective (utilizing utility cost savings and Efficiency Manitoba costs), the costs exceed the benefits. We do not point this out to suggest the bundles should be changed dramatically or eliminated. Further examination is warranted. The bundles offered to the commercial, industrial and agricultural sector customers create positive NPV, except for the new construction bundle. The custom bundle produces a very high percentage of the overall NPV for the natural gas portfolio.

Sector	DSM Bundle	Total Three-Year Savings (Kwh)	Savings %	PACT NPV	PACT NPV %
Residential	Direct Install	5,693,673	0.6%	$ 860,779	0.2%
	Product Rebates	34,696,632	3.9%	$ 7,533,261	2.0%
	Home Renovation	15,278,433	1.7%	$ 14,705,108	4.0%
	New Homes $ MR	10,612,322	1.2%	$ 16,885,441	4.6%
	Home EE Kits & Education	2,507,292	0.3%	$ 353,266	0.1%
Income Qualified Programs	Income Qualified	7,881,921	0.9%	$ 7,576,305	2.1%
Indigenous Programs	Insulation and Direct Install	791,367	0.1%	$ 613,464	0.2%
	Small Business	1,185,774	0.1%	$ (461,000)	-0.1%
	Metis Income Qualified	554,441	0.1%	$ 559,019	0.2%
	Community Geothermal	3,255,840	0.4%	$ 3,816,177	1.0%
Commercial, Industrial, & Agriculture	Small Business & Appliance	45,655,479	5.2%	$ 9,945,000	2.7%
	In Suite Efficiency	3,019,822	0.3%	$ 1,055,321	0.3%
	Renovation	309,292,587	35.1%	$ 187,956,512	50.9%
	HVAC & Controls	10,312,458	1.2%	$ 5,501,208	1.5%
	New Construction & HPB	21,915,904	2.5%	$ 9,311,153	2.5%
	Custom	70,646,282	8.0%	$ 37,133,059	10.1%
	Load Displacement	329,967,000	37.5%	$ 61,521,326	16.7%
Emerging Technology Program	Emerging Technology	6,880,972	0.8%	$ 4,156,484	1.1%
Total		***880,148,200***	***100%***	***369,021,884***	***100%***

Table 19: Savings and PACT NPV $ by sector and bundle – Electric

Sector	DSM Bundle	Total Three-Year Savings (m3)	Savings %	PACT NPV*	PACT NPV %
Residential	Direct Install	499,384	1.9%	$ (165,898)	-0.8%
	Product Rebates	1,205,670	4.7%	$ (402,307)	-1.8%
	Home Renovation	2,737,423	10.6%	$ 1,481,619	6.7%
	New Homes $ MR	401,910	1.6%	$ (491,953)	-2.2%
	Home EE Kits & Education	139,893	0.5%	$ (242,659)	-1.1%
Income Qualified Programs	Income Qualified	3,237,979	12.6%	$ (8,887,742)	-40.2%
Indigenous Programs	Metis Income Qualified	157,774	0.6%	$ (519,356)	-2.4%
Commercial, Industrial, & Agriculture	Small Business & Appliance	958,599	3.7%	$ 540,611	2.4%
	In Suite Efficiency	346,736	1.3%	$ 350,568	1.6%
	Renovation	3,387,948	13.2%	$ 3,773,917	17.1%
	HVAC & Controls	2,268,681	8.8%	$ 3,772,840	17.1%
	New Construction & HPB	2,287,686	8.9%	$ (2,692,833)	-12.2%
	Custom	13,348,583	51.9%	$ 25,683,933	116.2%
Emerging Technology	Emerging Technology	332,286	1.3%	$ (103,619)	-0.5%
Interactive Effects	Interactive Effects	(5,585,543)	-21.7%		0.0%
Total		***25,725,008***	***100%***	***22,097,121***	***100%***

**Note- Bundle-level PACT values do not account for interactive effects.*

Table 20: Savings and PACT NPV $ by sector and bundle – Natural Gas

C. Cost effectiveness – multiple perspectives

The question of cost effectiveness can be approached from multiple perspectives, depending on which costs and benefits are included in the analysis and whether programs are analyzed as single entities, or whether the analysis breaks down programs into smaller components and looks at the individual cost-effectiveness of each program.

In our analysis of Efficiency Manitoba's work, we look at cost-effectiveness from multiple perspectives, including two types of cost effectiveness tests and applying the analysis to multiple levels of program aggregation.

1. Cost effectiveness tests

There are several different "tests" that can be used in the cost-effectiveness analysis of efficiency programs, each of which looks at the benefits and costs of programs from different perspectives. As directed by the act and the regulations in its Plan, Efficiency Manitoba provides the results of the Program Administrator Cost Test (PACT). This is a common approach used by many other jurisdictions, and we analyze PACT findings below. Another test commonly

used as a supplement to the PACT is the Total Resource Cost Test (TRC Test). Although the results were not reported in the Plan, Efficiency Manitoba did in fact do the analysis necessary for TRC tests, and in our discussion, we will include TRC analysis. Below, we discuss what these tests are and what they measure.

The metric for these tests can be either the NPV, as discussed above, or a Benefit-Cost Ratio. The metrics deal with the same costs and benefits. While the NPV is a true measure of value created, it is not helpful in comparing the quantity of energy savings produced by individual programs. As an example, in the electric bundle savings breakdown (Table **20**, above), we see that the renovation and the load displacement bundles produce about the same energy savings but have markedly different NPV results. This suggests a large difference in costs of the bundle. Often, instead of the net present value, it is helpful to see the amount of benefits created, compared to the costs, in ratio form. Thus, the NPV and ratio metrics work in concert with each other. A Benefit-Cost ratio of 1.0 means that benefits equal costs. In this case, the NPV would be zero. A benefit-cost ratio of 2.0 means that costs are equal to half the benefits. The corresponding NPV for a B/C ration of 2.0 would depend on the size of the program.

2. Program Administrator Cost Test (PACT)

The PACT focuses on the costs and savings of a program from the program administrator's point of view. For utility-run energy efficiency programs, a PACT test (also sometimes called a Utility Cost Test) would look at the utility's costs to administer a program and compare this to what the utility saves because of the program. Savings would consist primarily of savings on the cost of providing electricity and/or natural gas service, including both immediate energy generation or purchase costs and longer-term costs associated with building the capacity required to meet energy demand. Savings in these areas, in turn, translate into a reduction in the payments collected from customers. The PACT analysis deals with the costs and benefits as described in the Efficiency Manitoba Act and the Efficiency Manitoba Regulations. In the case of Efficiency Manitoba, the program administrator is Efficiency Manitoba, but the savings are realized by Manitoba Hydro and Centra and their customers—so when we develop a ratio within the PACT, the savings to the utility and its customers is compared to Efficiency Manitoba's costs.

A major advantage of the PACT is the relative accessibility and reliability of the necessary data. Because the PACT measures program administrator and utility costs and benefits, program administrators and utilities have good access to this information. In addition, in the case of the Efficiency Manitoba Plan, the PACT is also a perfect match for the testing approach required by Regulation 119/2019, which calls for a comparison of "the levelized cost to Efficiency Manitoba" of the net electrical or gas savings resulting from efficiency initiatives to "the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives."

3. Other cost effectiveness analyses

As described above, the legislation and regulations pertaining to Efficiency Manitoba mandate the use of a cost-effectiveness test that is consistent with the Program Administrator Cost Test (PACT). Within its worksheets and models, Efficiency Manitoba did calculate two additional tests: Total Resource Cost Test, and a version of a Ratepayer Impact Analysis. In this, Efficiency Manitoba followed a practice common among energy efficiency programs in Canadian provinces including New Brunswick, Ontario, and British Columbia. In each of these cases, regulations provide that the PACT either must or may be supplemented by additional tests—by the Total Resource Cost Test, in Ontario and British Columbia, and by the Participant Cost Test, in New Brunswick. In addition, Nova Scotia utilizes the PACT test to determine which programs should be pursued.

Below, we discuss these four supplementary tests and their potential relevance for Manitoba. We also discuss the Societal Cost Test, which may be considered either an additional supplementary test or an expanded version of the Total Resource Cost Test.

Participant Cost Test. The Participant Cost Test (PCT), used in New Brunswick as a supplement to the PACT, includes only quantifiable costs and benefits to program participants—the homeowner, renter, or business owner who adopts a DSM measure. Such benefits would typically include items like utility bill reductions, rebates, or tax benefits. Costs would include any investment the participant makes to take advantage of a DSM program—money spent purchasing a new appliance, for example, or spending on promoted home improvements. Because the costs reflected in the Participant Cost Test are also incorporated in the Total Resource Cost Test, this test has not been separately called out in our review. While this test does have the potential to show the

economics of participating in a program, it does not provide an indication if the program is economic for the utility.

Ratepayer Impact Measure (RIM) Test. Another test that is sometimes used in evaluating utility programs is the ratepayer impact test. This test brings in the revenue reduction from customers due to lower consumption from participants in programs, which is termed 'lost revenue'. This test is not a cost-effectiveness test, but it is an approach to measuring possible bill impacts on hypothetical non-participating customers who would help to support program costs without benefitting directly from savings related to program participation. In the case of a large energy efficiency program, lasting many years and prioritizing wide outreach, one of the challenges of such a test is that, while some customers may reduce their energy consumption more than others, it is not clear that there will be a group of permanent total non-participants over the course of a fifteen-year program. Daymark does not advocate using the RIM ratio or economics at the program level.

The Efficiency Manitoba Regulation 119/2019, Section 11(g), requires the PUB, in its review, to consider "the impact of the efficiency plan on rates and average customer bill amounts." Noting the difficulty of a full ratepayer impact calculation in the absence of a full rate study, Efficiency Manitoba approaches the analysis of the likely rate impacts of the program, not from the perspective of individual customers, but in overall terms, asking what rate changes would be needed to fund the program, levelizing the costs of the program over 30 years. We will be discussing this within a separate section of the report.

Total Resource Cost Test and Societal Cost Test. The Total Resource Cost Test (TRC Test) brings in additional information about the economy-wide effects of a program by including customer (and sometimes other local or regional) costs and expenses that do not pass through the utility or program administrator. For example, for a home retrofit program, for which the program administrator provides expertise and subsidies, but homeowners pay some costs as well, the TRC Test incorporates the additional customer costs of program participation. On the benefits side, the TRC Test, applied to a utility's service territory, might include any applicable federal tax credits for which customers become eligible as a result of participation in efficiency programs.

There is some variation in the other benefits generally included in a TRC Test. The value of greenhouse gas emissions reductions, for example, is included in

some TRC tests, but not in others. As a more and more comprehensive set of social benefits and costs are monetized and included, the TRC Test expands into a broad test of all social costs and benefits associated with a program, a test which is sometimes referred to as the "Societal Cost Test." We have not attempted a full societal cost test in our analysis; however, our TRC Test does include the following:

- Program Administrator costs
- Estimates of additional costs covered by customers
- Program benefits (either in terms of customer savings or utility savings)
- Benefits of avoiding federal charges for greenhouse gas emissions
- Benefits of reduced water consumption associated with energy efficiency programs

The TRC Test does have some limitations and challenges. Once you get beyond utility (or program administrator) costs and benefits, it can be harder to measure these and to know what to count. For example, if a customer spends money on an energy efficient air conditioner, should the full expense be counted? Or just some additional amount that could be attributed to the "high efficiency" quality of the air conditioner, given that the customer probably would have spent money on some air conditioner, even in the absence of incentives? Similarly, not all benefits are easy to monetize and/or quantify. For example, customers may experience increased comfort at home due to weatherization, but it is difficult to attach a specific monetary value to this, so this kind of benefit is often omitted from TRC testing (comfort benefits are not included in our analysis, for instance). However, while keeping these limitations in mind, TRC testing can be a helpful tool in thinking about the overall impact of programs on Manitoba as a whole.

a) Non-energy benefits

In addition to direct energy savings, the energy efficiency programs could also provide other non-energy benefits (NEBs) from installing energy efficiency measures. Typical non-energy benefits could include benefits such as reduced costs for operation and maintenance associated with efficient equipment or practices or reduced environmental and safety costs.[66] There are NEBs attributable to both participants and to society at large.

[66] Non-energy Impacts Approaches and Values: An Examination of the Northeast, Mid-Atlantic, and Beyond. Northeast Energy Efficiency Partnerships: NEEP. https://neep.org/file/5856/download?token=u0ZVJqYq

Although the PACT analysis – the primary cost-effectiveness as per the Efficiency Manitoba Regulation 119/2019 Section 12 (1) and (2), does not consider any non-energy benefits, Efficiency Manitoba included a couple of non-energy benefits in its TRC analysis. Specifically, benefits associated with reduced greenhouse gas emissions and reduced water consumption are the only non-energy benefits quantified and included in the program selection and evaluation.[67]

The difference between TRC and PACT benefits provides non-energy benefits. Daymark calculated portfolio-level NEBs by taking the difference between TRC NPV benefits and PACT NPV benefits estimated by Efficiency Manitoba. We also present NEBs as a percentage of total PACT[68] and TRC benefits. For the electric portfolio, the total NEBs considered comprise of just 4% of the total PACT benefits. Whereas, for the natural gas portfolio, the non-energy benefits are sizeable as compared with either PACT benefits or TRC benefits, primarily attributed by benefits associated with the GHG savings.[69] The non-energy benefits are 61% of total PACT benefits and 38% of total TRC benefits.

Portfolio	PACT Benefits ($ Million)	TRC Benefits ($ Million)	Non-energy benefits ($ Million)	NEB as % of PACT Benefits (additional)	NEB as % of TRC Benefits
Electric	497.0	517.7	20.8	4%	4%
Natural Gas	59.1	94.9	35.8	61%	38%

Table 21: Portfolio-level non-energy benefits considered in 2020-2023 Efficiency Plan

It is a possibility that Efficiency Manitoba could consider other non-energy benefits in its TRC analysis in the future. In the filing, Efficiency Manitoba highlighted other types of non-energy benefits such as reduced waste, economic benefits, societal benefits, improved comfort and convenience, and savings through reduced maintenance frequency. In any event when Efficiency Manitoba considers any additional non-energy benefits in the future, they

[67] Response to EM/AMC I-14.

[68] We present NEBs as percentage of PACT benefits to the comparison purpose only. As mentioned in the Report, NEBs are not considered in PACT benefits.

[69] GHG gas emission were estimated using Manitoba Hydro natural gas GHG emission factor of 0.0019 tonnes CO2eq /m3 for the industrial, commercial, and residential combustion of natural gas. (Source: 2020/23 Efficiency Plan, Appendix A- Section A2, pdf pages 229 and 230)

should be rigorously quantifiable, and the methodology used in estimating should be reviewed by other stakeholders and technical consultants.

b) Interactive effects

Efficiency Manitoba adjusted the total electric and natural gas savings by accounting the potential change in respective fuel consumption as a result of installing energy efficiency measures. This impact, known as interactive effects, can either increase or decrease energy consumption.[70] An example of such an effect is the increase in fuel for heating requirement (or decrease in cooling requirement) as a result of heat loss from lighting fixtures after installing efficient types. Both electric and natural gas savings and cost-effective analyses are adjusted with the respective interactive effects.

For facilities and homes heated by electricity, the increased electric heating requirements are subtracted from the electric measure savings. For facilities and homes that are electrically cooled, the decreased cooling requirements are added to the measure savings. The net measure savings after considering the estimated heating and cooling interactive effects are used in the measure forecasts in the 2020/23 Efficiency Plan.[71] Similarly, increases in natural gas usage due to the interactive effects from electricity DSM programs are treated as a reduction in natural gas saving for purposes of net savings and percent of the target achieved.[72]

4. Levels of analysis

In addition to looking at cost effectiveness from the point of view of different cost effectiveness tests, another way to get additional insight is to look at different levels of analysis. In Efficiency Manitoba's Plan, individual efficiency measures are combined into programs, programs are combined into bundles targeted at customer segments, and bundles roll up into the electric and natural gas portfolios.

In our cost effectiveness analysis, in addition to looking at portfolios, bundles, and programs, we worked with the Efficiency Manitoba data to drill down to the measure level, in order to be able to identify any individual measures that were particularly successful or unsuccessful from the standpoint of cost-effectiveness. There are some challenges in going to the measure level of

[70] 2020/23 Efficiency Plan, pdf page 226 & 227, line 462-468.
[71] Response to Daymark/EM I-40.
[72] Response to PUB/EM I-6.

analysis, as some judgment must be applied to questions of how administrative costs should be assigned to individual measures and whether the benefits of an individual measure (say, a measure contained within a home retrofit) can be counted separately from the measures that accompany it. However, our analysis was facilitated by the fact that, although measure-level results are not reported publicly in Efficiency Manitoba's plan, for most measures, Efficiency Manitoba already had measure-level cost and benefit estimates. We have included a review of this measure-level analysis in our work utilizing only measure costs as will be discussed below.

D. PACT benefit cost ratio analysis

Efficiency Manitoba estimated the PACT benefit/cost ratio utilizing measure-level benefit-cost analysis along with additional cost considerations.[73] Efficiency Manitoba reported the portfolio-level PACT ratios in the Filing. Bundle-level and program-level PACT ratios were estimated in their workpapers. This section discusses PACT ratio results at the portfolio level and bundle level.

As shown in **Error! Reference source not found.**, the electric portfolio included in 2020-2023 Plan has a PACT ratio of 3.27 – meaning utility benefits for successfully administering and delivering programs proposed in 2020-2023 plan are at least three times the cost of the program. However, the PACT ratios at the bundle level vary. The bundle-level PACT ratios along with the energy savings of electric portfolio are presented in Table 22[74] where bundles are arranged from high to low PACT ratios. The bundle-level PACT ratios show that all electric bundles proposed for 2020/2023 Plan have a PACT ratio of greater than one showing that, at the bundle-level, utility benefits associated with avoided cost is larger than the cost for delivering these bundles.

In terms of cost-effectiveness from the utility's perspective at the bundle level, PACT results show that the new homes & major renovation bundle is the most favorable. However, this bundle comprises only about 1% of the total savings of electric portfolio. The next two bundles on the list - custom and renovation – have very high PACT ratios and also represent almost 43% of total savings. Both bundles have a PACT ratio of around 5, meaning utility benefits are around five

[73] The additional costs are related with associated with program support, delivery, administration, enabling strategies and corporate overhead.

[74] Please note that PACT ratios estimated at the bundle-level do not account for any support cost added at the portfolio-level.

times larger than the utility cost at the present value. Efficiency Manitoba's analysis shows that load displacement[75], which is projected to deliver 37.5% of the savings, has a PACT ratio of 3.72.

Description	Total Three-Year Electric Savings (GWh)	PACT Ratio
2020-2023 Electric EE Plan	880.1	3.27

Table 22: Portfolio level results (GWh and PACT ratio)

[75] We discuss the consideration of load displacement bundle in EM's plan and its potential impact in savings target and cost-effectiveness in later part of the Report.

DSM Bundle	Total Three-Year Electric Savings (GWh)	PACT Ratio
New Homes & MR	10.6	6.56
Custom	70.6	5.18
Renovation	309.3	4.97
Community Geothermal	3.3	4.03
Load Displacement	330.0	3.72
Emerging Technology	6.9	2.96
New Construction & HPB	21.9	2.95
Home Renovation	15.3	2.90
HVAC & Controls	10.3	2.81
Income Qualified	7.9	2.80
Metis Income Qualified	0.6	2.58
In Suite Efficiency	3.0	2.48
Small Business & Appliance	45.7	2.30
Insulation and Direct Install	0.8	1.90
Product Rebates	34.7	1.74
Home EE Kits & Education	2.5	1.61
Direct Install	5.7	1.53
Small Business	1.2	0.57
Program Support	-	-
Total	*880.1*	*3.27*

Table 23: Bundle level results

For natural gas, the overall portfolio-level PACT ratio, shown in Table 24, is 0.99 – meaning, at the net present value, the cost associated with the three-year Plan is slightly lower than the benefits. However, at the bundle level, the PACT ratio varies considerably.

Description	Total Three-Year Natural Gas Savings (million cu m)	PACT Ratio
2020-2023 Natural Gas EE Plan	25.7	0.99

Table 24: Portfolio level results (cu m and PACT ratio)

Table 25 presents the bundle level PACT ratios of the natural gas portfolio. There are 8 bundles out of 14 that have PACT ratios less than 1. However, the remaining 6 natural gas bundles that have a PACT ratio greater than 1 comprised almost three-quarters of natural gas savings.[76] The 8 bundles that have a PACT ratio less than 1 represent the remaining quarter of total savings.

The bundles considered for the commercial, industrial, & agriculture sectors are more favorable than bundles developed for other sectors. Out of six bundles that have a PACT ratio greater than one, five of them belong to the commercial, industrial, & agriculture sector, and these five bundles represent 65% of the total natural gas savings.[77]

There could be different reasons for the PACT ratio of many natural gas bundles to be lower than one. As discussed earlier in the Report, the PACT ratio only considers benefits associated with the avoided cost and utility cost for delivering these bundles. It could be that the measures considered in the bundles that have low PACT ratios are delivering less savings. It is also a possibility that Efficiency Manitoba's Plan bears most of the cost[78] for implementing measures included in the bundle. We discuss the PACT test under the lens of other cost effectiveness testing in the next section of the report.

[76] The six bundles with PACT ratio greater than 1 have represent 73.4% (23.05 million out of 31.31 million) of the total natural gas savings. The natural has savings used in this calculation are not adjusted for interactive effects

[77] The percentage is estimated without accounting for interactive effects (20.31 million out of 31.31 million cu m savings)

[78] The other portion of the total cost for delivering Bundles are net customer cost contributed by participating customers

DSM Bundle	Total Three-Year Savings (m3)	PACT Ratio
Custom	13,348,583	6.51
In Suite Efficiency	346,736	3.15
HVAC & Controls	2,268,681	2.59
Small Business & Appliance	958,599	1.75
Renovation	3,387,948	1.60
Home Renovation	2,737,423	1.20
Emerging Technology	332,286	0.89
Product Rebates	1,205,670	0.79
Direct Install	499,384	0.78
New Homes & MR	401,910	0.72
New Construction & HPB	2,287,686	0.59
Income Qualified	3,237,979	0.49
Metis Income Qualified	157,774	0.44
Home EE Kits & Education	139,893	0.41
Program Support	-	-
Interactive Effects	(5,585,543)	-
Total	*25,725,008*	*0.99*

Table 25: Bundle level results

The natural gas bundles have a considerable amount of savings from bundles that are technically uneconomic from the perspective of the PACT, with ratios below 1.0. The table also included the estimated interactive effects, where introducing electric efficiency measures cause a higher heating requirement for natural gas heated structures and thus increase natural gas usage or reducing the net change in natural gas savings.

The cost-effective test results show that the adjustment of interactive effects, related with the installation of electric measures, in natural gas savings reduces the overall benefits of natural gas portfolio.[79] Daymark agrees that interactive effects should be considered in the analysis. However, in order to assess the

[79]Although this approach reduces natural gas portfolio's cost effectiveness, Efficiency Manitoba mentioned that it would not appropriate to convert the increased natural gas consumption into an equivalent amount of electricity because this would not reflect the actual energy consumption change that is occurring in the province and it would not accurately reflect the actual net savings achieved by the DSM Program portfolio. Moreover, Efficiency Manitoba mentioned that this approach is consistent with the approach previously used by Manitoba Hydro. (Source: Response to Coalition/EM I-6(c))

cost-effectiveness of the "natural gas only" portfolio only, it is important to consider the results by not considering interactive effects as well. **Error! Reference source not found.** shows PACT results with and without considering interactive effects.[80] The overall natural gas portfolio has PACT ratio of 0.99 but when interactive effects are not considered the PACT ratio increases to 1.24.

	PACT ratio	PACT NPV	PACT levelized cost (¢/m3)
Program only metrics	1.42	$22 mil.	13.03
No interactive effects metrics	1.24	$14.4 mil.	14.96
Overall portfolio metrics	0.99	($0.8 mil.)	18.69

Note: Program only metrics do not include impact of interactive effects, enabling strategies or corporate overhead. Overall portfolio metrics include these impacts. No interactive effects metrics do not include impact of interactvie effects bu do include costs associated with enabling strategies and corporate overhead

Table 26: Cost effectiveness of natural gas portfolio with and without considering interactive effects

E. Total Resource Cost (TRC analysis)

As a supplement to the PACT analysis, Daymark reviewed program and bundle cost-effectiveness from the point of view of the Total Resource Cost test, which includes any customer costs for program participation, as well as benefits associated with greenhouse gas emission reductions and water conservation.

Overall, as can be seen in Table 27, below, for the electric portfolio, the inclusion of additional costs in the TRC Test reduced the benefit/cost ratio, while still leaving the electric portfolio showing benefits more than twice as great as costs.

[80] Response to Coalition/EM I-6(d)

Description	Total Three-Year Electric Savings (GWh)	PACT Ratio	TRC Ratio
2020-2023 Electric EE Plan	880.1	3.27	2.05

Table 27: Electric Portfolio level Cost Effectiveness results

At the bundle level, as shown in Table 28, the results from the TRC test show that, for the electricity portfolio, almost all proposed bundles continue to show benefits exceeding costs (with the exception being emerging technologies). In some cases, however, the numbers do shift considerably. This shift makes sense, in the case of items such as "new homes and major renovations," for which one would anticipate that considerable customer investment is required. On the other hand, TRC ratios higher than PACT ratios reflect programs involving incentives or payments to customers that go beyond the cost of the measure itself.

DSM Bundle	Total Three-Year Electric Savings (GWh)	PACT Ratio	TRC Ratio
New Homes & MR	10.6	6.56	1.74
Custom	70.6	5.18	1.58
Renovation	309.3	4.97	2.52
Community Geothermal	3.3	4.03	22.26
Load Displacement	330.0	3.72	5.64
Emerging Technology	6.9	2.96	0.56
New Construction & HPB	21.9	2.95	1.19
Home Renovation	15.3	2.90	1.92
HVAC & Controls	10.3	2.81	2.24
Income Qualified	7.9	2.80	3.46
Metis Income Qualified	0.6	2.58	2.94
In Suite Efficiency	3.0	2.48	3.09
Small Business & Appliance	45.7	2.30	2.40
Insulation and Direct Install	0.8	1.90	2.07
Product Rebates	34.7	1.74	1.24
Home EE Kits & Education	2.5	1.61	3.14
Direct Install	5.7	1.53	1.99
Small Business	1.2	0.57	0.80
Program Support	-	-	-
Total	*880.1*	*3.27*	*2.05*

Table 28: Electric Bundle level Cost Effectiveness results

For the natural gas portfolio, application of the TRC Test actually results in a slight improvement in the reported benefit/cost ratio, as can be seen in Table 29, below, reflecting the additional value of greenhouse gas emissions reductions being counted as part of the TRC analysis.

Description	Total Three-Year Natural Gas Savings (million cu m)	PACT Ratio	TRC Ratio
2020-2023 Natural Gas EE Plan	25.7	0.99	1.00

Table 29: Natural Gas portfolio level cost effectiveness results

Drawing on Efficiency Manitoba's workpapers, we examined the TRC Ratio for bundles in the natural gas portfolio, compared to PACT ratios, shown in Table 30.

DSM Bundle	Total Three-Year Savings (m3)	PACT Ratio	TRC Ratio
Custom	13,348,583	6.51	3.62
In Suite Efficiency	346,736	3.15	4.47
HVAC & Controls	2,268,681	2.59	1.88
Small Business & Appliance	958,599	1.75	6.83
Renovation	3,387,948	1.60	1.84
Home Renovation	2,737,423	1.20	0.79
Emerging Technology	332,286	0.89	0.32
Product Rebates	1,205,670	0.79	0.49
Direct Install	499,384	0.78	1.81
New Homes & MR	401,910	0.72	0.32
New Construction & HPB	2,287,686	0.59	0.37
Income Qualified	3,237,979	0.49	0.92
Metis Income Qualified	157,774	0.44	0.84
Home EE Kits & Education	139,893	0.41	2.97
Program Support	-	-	0.00
Interactive Effects	(5,585,543)	-	-
Total	*25,725,008*	*0.99*	*100%*

Table 30: Natural Gas Bundle level Cost Effectiveness results

The natural gas bundle level results show dramatic improvement for three bundles: Direct Install, Home Energy Kits, Income Qualified, and Metis Income Qualified. The results also show substantial decreases for Product Rebates, New Home & MR, and emerging technology.

Overall, however, the TRC test does not dramatically change the cost-benefit picture at the portfolio level.

F. Testing energy efficiency measure values

In the prior sections of this cost effectiveness review, the data has shown that there are few natural gas bundles that have PACT and TRC ratios below 1.0. Reflecting on the dynamics between the benefits and the different type of costs we thought some additional drill down to the measure level could be helpful. The most basic question that we wanted to answer is, "Is it good for Manitoba for a measure to get installed, whether there is a program or not?". In order to answer this question, we had to select a cost effectiveness test that was appropriate. We felt that the Manitoba perspective from the benefits side would include at least the marginal value of electricity for electric saving measures and the marginal value of natural gas plus the value of GHG reduction for natural gas savings measure, along with the value of water savings. These are the same benefits as described above in the TRC Test. There are other benefits that could be included in the total resource cost analysis such as non-energy benefits but for now the we are working with the benefits prescribed in the Act and Regulations.

The next question is, "What costs are relevant to answer the question posed for Manitoba at the measure level?" The costs that Daymark is choosing as most relevant are only the costs of the measure itself. That would be, for example, the incremental cost of an efficient piece of equipment compared to a standard piece of the functionally similar equipment. If we wanted to think in program terminology, it would be the sum of participant cost and utility incentive. In this report we are going to refer to this test as the Pure Measure Value Test (PMVT). This PVMT will indicate whether it is good for Manitoba if someone installs a measure without any program existing.

Why is this important? Efficiency Manitoba, in order to meet the target savings established in the ACT and regulations, has put forward a natural gas portfolio where some bundles are producing negative NPV or PACT and TRC ratios less than one. . Is this the result of choosing poor measures that do not save enough energy and dollars, or is this the result of having to expend relatively high amounts on program related costs too high? The answer to this question may determine what, if anything, should be changed in the Plan.

Thus, we performed the PMVT on each measure, electric and natural gas. In Table 31 below we show that at the electric portfolio level 7% of the savings come from measures for which the measure cost alone is larger than the benefits. We calculate how removing those measures from the Plan would increase the PACT ratio and the TRC ratio. Similarly, the natural gas portfolio gets 26% of its savings from measures for which the measure cost exceeds the benefits.

Description	Total Three-Year Energy Savings (GWh or million cu m)	PACT Ratio	TRC Ratio	Savings from measures with PMVT ratios <1
2020-2023 Electric EE Plan	880.1	3.27	2.05	7%
2020-2023 Natural Gas EE Plan	25.7	0.99	1.00	26%

Table 31: Portfolio-level results after the pure measure value test

This analysis should not be taken as a recommendation to reduce the portfolios or eliminate certain measures. The PACT, TRC and Daymark created PMVT to all look at the energy efficiency program investments in the three-year period in isolation. By this we mean that our analysis does not consider any residual benefits associated with these investments after the measure life of those installed. An example of why this may be important relates to market transformation. An objective of every energy efficiency program is to help the technology become mainstream, either due to customer acceptance or through the technology becoming part of codes & standards. That benefit is not considered in the calculation of the cost effectiveness of the bundles in this Plan.

There can be additional bundle strategic values which are not included in Efficiency Manitoba's or Daymark's analyses, such as:

- Market transformation
- Societal benefits
- Important to the local economy, etc.

With this discussion as context, we can now look at the bundles and see what portion of any bundles have measures that perform relatively poorly from an economic perspective.

Table 32: Bundle-level results after pure measure value test – electric portfolio shows that five electric saving bundles have significant savings associated with low PMVT ratio measures;

- Emerging technology
- New construction & HPB
- Home renovation
- In Suite efficiency
- Product rebates

These bundles warrant some more detailed evaluation to see if all the measures should remain in the offering.

DSM Bundle	Total Three-Year Electric Savings (GWh)	PACT Ratio	TRC Ratio	Savings from measures with PMVT ratios <1
New Homes & MR	10.6	6.56	1.74	0%
Custom	70.6	5.18	1.58	12%
Renovation	309.3	4.97	2.52	2%
Community Geothermal	3.3	4.03	22.26	0%
Load Displacement	330.0	3.72	5.64	0%
Emerging Technology	6.9	2.96	0.56	72%
New Construction & HPB	21.9	2.95	1.19	70%
Home Renovation	15.3	2.90	1.92	37%
HVAC & Controls	10.3	2.81	2.24	-2%
Income Qualified	7.9	2.80	3.46	13%
Metis Income Qualified	0.6	2.58	2.94	12%
In Suite Efficiency	3.0	2.48	3.09	45%
Small Business & Appliance	45.7	2.30	2.40	7%
Insulation and Direct Install	0.8	1.90	2.07	3%
Product Rebates	34.7	1.74	1.24	44%
Home EE Kits & Education	2.5	1.61	3.14	8%
Direct Install	5.7	1.53	1.99	19%
Small Business	1.2	0.57	0.80	-8%
Program Support	-	-	-	-
Total	*880.1*	*3.27*	*2.05*	*7%*

Table 32: Bundle-level results after pure measure value test – electric portfolio

Table 33: Bundle-level results after pure measure value test – natural gas portfolio shows that four natural gas saving bundles have the majority or all their savings associated with low PMVT ratio measures;

- Emerging technology
- New construction & HPB
- New home & major renovation
- Product rebates

These bundles warrant some more detailed evaluation to see if all the measures should remain in the offering.

DSM Bundle	Total Three-Year Electric Savings (GWh)	PACT Ratio	TRC Ratio	Savings from measures with PMVT ratios <1
New Homes & MR	10.6	6.56	1.74	0%
Custom	70.6	5.18	1.58	12%
Renovation	309.3	4.97	2.52	2%
Community Geothermal	3.3	4.03	22.26	0%
Load Displacement	330.0	3.72	5.64	0%
Emerging Technology	6.9	2.96	0.56	72%
New Construction & HPB	21.9	2.95	1.19	70%
Home Renovation	15.3	2.90	1.92	37%
HVAC & Controls	10.3	2.81	2.24	-2%
Income Qualified	7.9	2.80	3.46	13%
Metis Income Qualified	0.6	2.58	2.94	12%
In Suite Efficiency	3.0	2.48	3.09	45%
Small Business & Appliance	45.7	2.30	2.40	7%
Insulation and Direct Install	0.8	1.90	2.07	3%
Product Rebates	34.7	1.74	1.24	44%
Home EE Kits & Education	2.5	1.61	3.14	8%
Direct Install	5.7	1.53	1.99	19%
Small Business	1.2	0.57	0.80	-8%
Program Support	-	-	-	-
Total	*880.1*	*3.27*	*2.05*	*7%*

Table 33: Bundle-level results after pure measure value test – natural gas portfolio

Strategically, in evaluating bundles with a relatively questionable economic and strategic value, measure life might also be something to consider. One of the strategic reasons for the increased focus on energy efficiency in the Act is to help defer or avoid a major capital project. The shorter the measure life, the less likely that the bundles are contributing to that objective.

The tables below were produced from the detailed worksheets provided by Efficiency Manitoba and show measure savings grouped by different five-year measure life strata. Table 34: Savings by measure-life Group – electric not only shows the total savings associated with each group of measures but provides the cumulative impacts of the measures from the shortest-lived to the longest-lived. So, for example, for the first measure life group (measures with a lifespan of 1-5 years), the measures expected in the plan total 42% of projected three-year electric portfolio savings. For the second group of measures (measures with a lifespan of 6-10 years) the percent of total savings is 3%, and for the third group (11-15 years), the percent of total savings is 39%. The cumulative column shows that these three groups total 84% of savings--that is, it shows that 84% of the electric savings project in the Plan come from measures with expected lives of 15 years or less.

In Table 35: Savings by measure-life group – natural gas, the same format is used. The table shows that only 22% of the projected natural gas savings come from measures with lives of 15 years or less.

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %
1-5	371,112,450	42%	42%
6-10	27,286,730	3%	45%
11-15	345,589,248	39%	84%
16-20	76,082,351	9%	93%
21-25	42,615,692	5%	98%
26-30	12,264,138	1%	99%
31+	5,767,240	1%	100%
Total	***880,717,849***		

Table 34: Savings by measure-life Group – electric

Year Range	Total Three-Year Savings (m3)*	Savings as % of Total	Cumulative Savings %
1-5	1,112,134	4%	4%
6-10	1,070,171	3%	7%
11-15	4,785,178	15%	22%
16-20	7,843,158	25%	47%
21-25	13,344,427	43%	90%
26-30	2,864,947	9%	99%
31+	162,666	1%	100%
Total	***31,182,679***		

**Does not include program-level interactive effects.*

Table 35: Savings by measure-life group – natural gas

G. Sensitivity analysis

Efficiency Manitoba conducted sensitivity testing using two different layers – discount rate and time period. First, Efficiency Manitoba adjusted the real discount rate down to 3% from the original 4%, and then adjusted the rate upward by one percent to 5%. The sensitivity analyses performed by Efficiency Manitoba are presented in the Filing Report[81] and are also shown in the tables below. The results can be seen in Table 36: Sensitivity results – electric portfolio for the electric portfolio and Table 37 for the natural gas portfolio. Additionally, Efficiency Manitoba tested a 15-year time period for calculating NPV, also reflected in the respective tables.

Daymark performed sensitivities on PACT NPV under a wider range of discount rates, in addition to introducing a third layer of sensitivity analysis related to savings achieved. The sensitivity analysis surrounding savings achieved allows us to look at the impact on cost-effectiveness, should there be risks of all estimated savings not being realized. In this sensitivity analysis, while costs of programs would remain the same, benefits would be lost should Efficiency Manitoba fail to reach their targeted savings. Daymark considered a sensitivity of only 80% of total savings being achieved for both electric and natural has portfolios.

[81] 2020/23 Efficiency Plan, pdf page 136 & 137, Table 5.5

1. Electric

Table 36 also presents the results of sensitivity analyses for electric portfolio. In the electric portfolio, Efficiency Manitoba's sensitivities showed the portfolio remaining above a $300 million PACT NPV and above a 3.00 PACT ratio, showing the programs still provide significant value when tested for different discount rates and reduced time frame of 15 years.

Daymark's sensitivities for two discount rates show that the cost-effectiveness of the electric portfolio is robust from the perspective of discount rates. With the lower discount rate of 2%, PACT values improve. And even when the discount rate of 10% is used, the PACT ratio for electric portfolio is 2.44. Daymark's sensitivity around 80% savings being achieved produced sound PACT cost-effectiveness results, even though net PACT NPV decreased by $100 million, compared to the proposed Plan for the electric portfolio.

	PACT Ratio	PACT NPV (millions)
Base Case per Efficiency Manitoba	3.27	345.1
Sensitivies Considered by EM		
Discount Rate (3%)	3.47	$380.5
Discount Rate (5%)	3.10	$313.8
Time frame (15 years)	3.00	$302.8
Additional Sensitvities		
Discount Rate (2%)	3.68	$420.5
Discount Rate (10%)	2.44	$200.6
Savings - Only 80% Achieved	2.62	$245.7

Table 36: Sensitivity results – electric portfolio

2. Natural gas

The sensitivity tests around the natural gas portfolio are presented in Table 37. The sensitivity results for the natural gas portfolio point in similar directions as those for the electric portfolio; however, one thing to note is that the PACT ratio of the natural gas portfolio included in the Plan is just 0.99. So, the factors that affect cost effectiveness, such as a higher discount rate than that considered by Efficiency Manitoba and risks of savings not being fully realized, will further reduce the PACT ratios. Under the sensitivity case discount factor of

10%, the PACT ratio drops to 0.62 from 0.99. When sensitivity related to achieving only 80% of savings is considered, the PACT drops to 0.79.

Daymark's sensitivity test on the discount rate further supports the indications of Efficiency Manitoba's tests. Discounting the future less gives higher PACT NPV values, showing benefits may either be backloaded or more evenly distributed across time compared to the electric portfolio benefits. Importantly, the natural gas portfolio already starts at a negative PACT NPV. Any risks associated with savings not being fully realized would only serve to push the entire portfolio further into negative values.

	PACT Ratio	PACT NPV (millions)
Base Case per Efficiency Manitoba	0.99	-0.8
Sensitivies Considered by EM		
Discount Rate (3%)	1.08	5.1
Discount Rate (5%)	0.90	-5.7
Time frame (15 years)	0.72	-16.6
Additional Sensitvities		
Discount Rate (2%)	1.20	12.1
Discount Rate (10%)	0.62	-21.2
Savings - Only 80% Achieved	0.79	-12.6

Table 37: Sensitivity results – natural gas portfolio

H. Lifecycle Revenue Impact (LRI) analysis

1. Efficiency Manitoba analysis

Efficiency Manitoba used a simplified rate and bill impact analysis to provide a directional indicator of the rate impacts that are associated with the three-year Plan. Efficiency Manitoba used a Lifecycle Revenue Impact (LRI) measure to indicate an equivalent one-time change in rates (for both electric and natural gas) that is required to establish a balance between the marginal benefits and the revenue reductions/program investments of the Plan, on a net present value basis. The one-time rate increase would be in place for 30 years in this metric.

Efficiency Manitoba's LRI analysis was completed on a 30-year net present value basis separately for both the electric and natural gas portfolios. This metric was selected as it applies the standard components of the energy efficiency rate impact measure cost test. In general, if the change in utility revenue plus the energy efficiency costs associated with a portfolio is greater than the utility benefits, the LRI will indicate an increase in rates. Similarly, if the utility benefits associated with a portfolio are greater than the change in utility revenue plus the energy efficiency costs, the LRI will indicate a decrease in rates. Therefore, the LRI test indicates the direction and magnitude (measured per unit energy) of the expected change in utility rate levels attributed to the Plan. The formula to calculate the LRI is as follows:

$$LRI = \frac{[PV(Program\ Costs + Incentives) + PV(Revenue\ Loss) - PV(Marginal\ Benefits)]}{PV(System\ Energy\ kWh)}$$

Where:

- program costs and incentives are defined consistently within the Program Administration Cost Test (PACT)
- marginal benefits are defined consistently with the PACT (levelized benefits of the marginal values)
- revenue loss includes the decrease in revenue realized by Manitoba Hydro resulting from lower electricity or natural gas sales as a result of customers' energy savings. The revenue losses were calculated by applying the current Manitoba Hydro Rate structure[82] with assumed escalation to the reduced sales resulting from the efficiency programs over the 30-year period
- system energy is the Base Electric Load Forecast or Actual Natural Gas extended throughout the 30-year period

2. Results of Efficiency Manitoba LRI analysis – 30-year period

Table 39 and Table 39 show the LRI measures for the entire electric and natural gas portfolios respectively. The LRI metrics are represented both as an equivalent single year cents/kWh (electric) or cents/m^3 (natural gas) increase required, and as a percentage assuming various average electric and natural gas rates for the purposes of comparison.

[82] Public Utilities Board (PUB) approved rates from June 1, 2019 and November 2018 and adjusted for inflation were used for electric and natural gas respectively.

Efficiency Manitoba's plan shows that the one-time equivalent rate increase levelized over a 30-year period was determined to be 0.019 ¢/ kWh and 0.23 ¢/ m3 for electric and natural gas portfolios respectively. This corresponds to an increase of 0.32% and 1.22% from the current average base rates for electric and natural gas portfolios as shown in Table 39 and Table 39. Results are also shown for two higher electric and natural gas average rates.

	One-Time Equivalent 30-Year Rate Increase
LRI (¢/kWh)	0.019 ¢/ kWh
LRI Percent Increase (using 6¢/kWh)	0.32%
LRI Percent Increase (using 8¢/kWh)	0.24%
LRI Percent Increase (using 10¢/kWh)	0.19%

Table 38: Lifecycle revenue impact results – electric portfolio[83]

Similarly, for the natural gas portfolio, if the base natural gas rate of 21¢/m3 is considered, a 1.10% one-time equivalent rate increase is determined through the LRI.

Table 39 below also shows the results of the directional one-time equivalent rate increase for the natural gas DSM portfolio.

	One-Time Equivalent 30-Year Rate Increase
LRI (¢/m3)	0.23
LRI Percent Increase (using 19¢/m3)	1.22%
LRI Percent Increase (using 21¢/m3)	1.10%
LRI Percent Increase (using 23¢/m3)	1.00%

Table 39: Lifecycle revenue impact results – natural gas portfolio[84]

[83] 2020/23 Efficiency Plan, Section 5.4, Page 18 of 32, Line 178.
[84] 2020/23 Efficiency Plan, Section 5.5, Page 19 of 32, Line 179.

3. Daymark review

The Daymark review found the formulas and modeling in this analysis to be proper and accurate. There is one concern; the equivalent one-time rate increase is based upon spreading the effects of the respective portfolios over 30-years. This spreads the effects of short-lived measures over 30-years, even if the measure life is only 5-years. Any rate effects from an energy efficiency measure would occur only over the measure life. The 30-year equivalent one-time rate increase would be a reasonable approximation if most of the energy savings came from long-lived, 20-year or more measures.

As discussed in an earlier section but repeated here for convenience, the tables below were produced from the detailed worksheets provided by Efficiency Manitoba and shows measure savings grouped by different five-year measure life strata. The chart not only shows the total savings associated with each group of measures but provides the cumulative impacts of the measures from the shortest-lived to the longest-lived. For example, the first measure life group (measures with a lifespan of 1-5 years), the measures expected in the plan total 42% of projected three-year electric portfolio savings. For the second group of measures (measures with a lifespan of 6-10 years) the percent of total savings is 3%, and for the third group (11-15 years), the percent of total savings is 39%. The cumulative column shows that these three groups total 84% -- that is, it shows that 84% of the electric savings project in the Plan come from measures with expected lives of 15 years or less.

In the natural gas measures table, the same format is used. The table shows that only 22% of the projected natural gas savings comes from measures with lives of 15 years or less.

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %
1-5	371,112,450	42%	42%
6-10	27,286,730	3%	45%
11-15	345,589,248	39%	84%
16-20	76,082,351	9%	93%
21-25	42,615,692	5%	98%
26-30	12,264,138	1%	99%
31+	5,767,240	1%	100%
Total	***880,717,849***		

Table 40: Savings by measure-life group – electric

Year Range	Total Three-Year Savings (m3)*	Savings as % of Total	Cumulative Savings %
1-5	1,112,134	4%	4%
6-10	1,070,171	3%	7%
11-15	4,785,178	15%	22%
16-20	7,843,158	25%	47%
21-25	13,344,427	43%	90%
26-30	2,864,947	9%	99%
31+	162,666	1%	100%
Total	***31,182,679***		

**Does not include program-level interactive effects.*

Table 41: Savings by measure-life group – natural gas

4. Daymark LRI analysis

To determine whether the Plan's LRI analysis based on a 30-year levelization period presents the best indicator of how the one-time equivalent rates should be calculated, Daymark performed additional LRI tests to analyze the rate impact using levelization periods associated with the different measure lives. Daymark's analysis used the same present value costs, benefits and loss revenue metrics as provided in the Plan and its associated work papers.

a) Methodology

To determine the LRI[85] by measure life, Daymark conducted the same analysis as Efficiency Manitoba for each of the 5-year groups of measures. The difference is that the rate increases were only spread over the period equal to the highest measure life of the groups. The measures in the group with 1-5 year life produce an estimated average annual LRI for years 1 through 5. This is one piece of the rate impact for those years. All the measure groups will impact rates in years 1 through 5. The measures in the group with 5-10 year life produce an estimated average annual LRI for years 1 through 10 with similar analysis for each group. By looking at the impact of all the groups of measures, we found a much higher average rate impact in the first five years, then decreasing impacts in the subsequent 5-year periods.

- The LRI for the first five years results from all measure life groups combined, since all measures are active in the first five years.[86]
- The LRI for the second five years results from combining all measure life groups with lives greater than 5-years, i.e., excluding the first five years measure group.[87]

While over the 30-year period Efficiency Manitoba used, the impact, on a present value basis, is the same, this methodology more closely estimates the potential impact on rates in the early years. The results for the first two 5-year periods for electric and natural gas portfolios are shown in Table 42 and Table 43 respectively.

b) Electric portfolio

The table below compares the Efficiency Manitoba LRI equivalent one-time rate increase to the Daymark estimated rate impact in the first 10-years.

[85] LRI = RIM Benefits -RIM Costs – Revenue Loss

[86] Years 1-5, 6-10, 11-15, 16-20, 21-25, and 26-30.

[87] Years 6-10, 11-15, 16-20, 21-25, and 26-30.

	Efficiency Manitoba One-Time	Measure life adjusted rate increase	
	Equivalent Rate 30-year Increase	Average 1st 5-Years	Average 2nd 5 Years
LRI (¢/kWh)	0.019	0.059	0.031
LRI Percent Increase (using 6¢/kWh)	0.32%	0.99%	0.52%
LRI Percent Increase (using 8¢/kWh)	0.24%	0.74%	0.39%
LRI Percent Increase (using 10¢/kWh)	0.19%	0.59%	0.31%

Table 42: Electric portfolio – rate impact by measure life

The Efficiency Manitoba LRI equivalent one-time rate increase of 0.019 ¢/kWh compares to our estimated average impact of 0.059 ¢/ kWh (0.99%) for years 1 through 5, followed by a lower an average impact of 0.031 ¢/kWh (.52%) for the years 6 through ten. There are two important observations in this comparison:

- The first five years of the electric portfolio could have a rate impact three times (3x) as large as the 30-year LRI shown in the Plan
- Both methods show a relatively small impact on rates resulting from the proposed three-year Plan

c) Natural gas portfolio

The table below compares the equivalent 30-year one-time rate increase to the rate increase that accounts for measure life, showing the Daymark estimated rate impact in the first 10-years for natural gas rates.

	One-Time Equivalent Rate Increase	Measure Life Adjusted Rate Increase	
		Average 1st 5 Years	Average 2nd 5 Years
Lifecycle Revenue Impact (¢/m^3)	0.23	0.41	0.24
LRI Percent Increase (using 19¢/ m^3)	1.22%	2.17%	1.25%
LRI Percent Increase (using 21¢/ m^3)	1.10%	1.97%	1.13%
LRI Percent Increase (using 23¢/ m^3)	1.00%	1.79%	1.03%

Table 43: Natural gas portfolio – rate impact by measure life[88]

The Efficiency Manitoba LRI equivalent one-time rate increase of 0.23 ¢/ m^3 (1.22%) compares to our estimated average impact of 0.41 ¢/ m^3 (2.17%) for years 1 through 5, followed by the impact being the same as the 30-year LRI, with an average of 0.24 ¢/ m^3 (1.25%) for the years 6 through 10.

There are two important observation in this comparison:

- The impact of capturing measure life in the estimate of LRI for the natural gas portfolio is less than the electric portfolio, due to the higher percentage of savings in the natural gas portfolio attributed to measures with longer lives
- The rate impact of the first five years of the natural gas portfolio could be two times (2x) as large as the 30-year LRI shown in the Plan
- For the natural gas portfolio, both methods show a relatively small impact on rates resulting from the proposed three-year Plan

V. PLAN FOR EVALUATION, MEASUREMENT & VERIFICATION (TRACKING)

Efficiency Manitoba is planning multiple approaches to monitor, track, and evaluate its proposed Three-year Plan. Specifically, Efficiency Manitoba is planning to monitor energy savings and budget at the measure-level with the help of the Customer Relationship Management/Demand-Side Management (CRM/DSM) System. In order to self-evaluate its program and corporate performances, Efficiency Manitoba is proposing to implement a scorecard methodology to evaluate its performances and benchmark it's outcome with other jurisdictions' energy efficiency programs. Moreover, Efficiency Manitoba

[88] Levelized over a 30-year period.

is planning evaluation, measurement, and verification (EM&V) of its programs and developed an EM&V Framework that was submitted with the Filing.[89]

The following sub-sections provide an assessment of Efficiency Manitoba's proposed plans to monitor, track, and evaluate the 2020/23 Efficiency Plan.

A. Efficiency Manitoba proposed Plan

1. System enhancement

Efficiency Manitoba is proposing to use the Customer Relationship Management/Demand-Side Management (CRM/DSM) System to monitor and track on savings and budget at measure and program-levels via dashboards and reports. Once the CRM/DSM system is fully deployed, the dashboard will report key parameters such as energy savings, GHG reductions, budget expenditure, and participant information, both at the program bundle-level and sector-level.[90] Moreover, the CRM/DSM system is planned to streamline and centralize operations from both customer-facing and internal operations perspectives.[91]

A preliminary proposed architecture of CRM/DSM system is presented in the following figure.

[89] 2020/23 Efficiency Plan, Attachment 5, pdf page 549 – 591.
[90] 2020-2023 Efficiency Plan, Response to Daymark/EM I-49.
[91] 2020/23 Efficiency Plan, Section 7, pdf page 180.

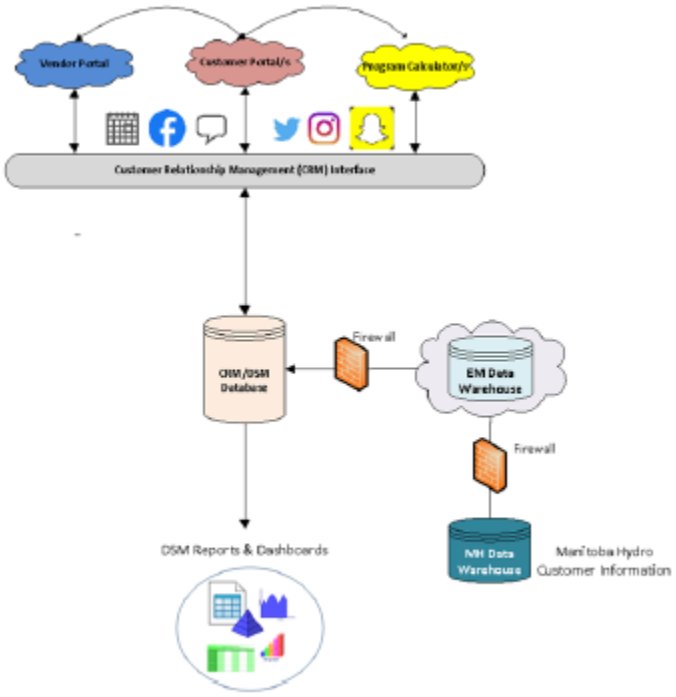


Figure 15: Proposed High-Level Architecture of CRM/DSM System[92]

The process for procuring and implementing CRM/DSM System is currently ongoing. Efficiency Manitoba mentioned that it plans to issue a request for proposal by December 2019, perform vendor evaluation and selection by February 2020, and start implementation work commencing by March 2020.[93]

As the implementation of CRM/DSM system will begin in March 2020, the full functionality of CRM/DSM functionality will not be available at the beginning of the start of the 2020-23 Efficiency Plan. The various features of the CRM/DSM system are scheduled to be live in a phased approach between August 2020 and November 2020, which is in the middle of Year 1 of the 2020-23 Efficiency Plan.[94] Efficiency Manitoba will continue to be using a legacy tracking system as the CRM/DSM system is fully operated. It is important to make sure that the legacy tracking system is gathering enough information that can be used for on-going program monitoring and evaluation once the program delivery is completed. Moreover, Efficiency Manitoba should make sure that a proper process is set up to successfully transition from the legacy tracking

[92] 2020/23 Efficiency Plan, Section 7, Figure 7.2, pdf page 181.
[93] 2020-2023 Efficiency Plan, Response to Daymark/EM I-49.
[94] 2020-2023 Efficiency Plan, Response to Daymark/EM I-49.

system to CRM/DSM system and transfer the data gathered via legacy tracking system to the CRM/DSM System.

As Efficiency Manitoba mentioned that the procurement and implementation of CRM/DSM System is foundational to the success of Efficiency Manitoba, it is important that the procurement of CRM/DSM system and successful transition occurred in the scheduled time.

2. Self-evaluation via DSM scorecard

Efficiency Manitoba is planning to assess its portfolio-level and corporate performances with the help of the DSM Scorecard.[95] Efficiency Manitoba developed a baseline DSM scorecard[96] by assessing the performance of Manitoba Hydro regarding DSM activities of Fiscal Year 2018. And it is planning to evaluate its internal performance annually and compare with the baseline data.

The baseline DSM Scorecard was developed by Dunsky Energy Consulting to allow a mechanism for Efficiency Manitoba to self-evaluate their own performance and benchmark their performances with six other anonymized energy efficiency program administrators throughout North America. The scorecard is developed in three equally weighted parts – operations, planning, and delivered value. Operations focuses on present-day activities including stakeholder engagement, DSM design, company culture, and customer participation. Planning primarily focuses on future goals, targets, and program equity. Delivered value scores a program administrator on how they performed relative to their targets, including the difficulty and lasting savings effects of the measures achieved. For each of the scored categories, the Report evaluated and assigned scores on different metrics. And these scores are combined to provide overall score for Manitoba Hydro's DSM activities of Fiscal Year 2018.[97]

[95] 2020/23 Efficiency Plan, pdf page 40.

[96] 2020-2023 Efficiency Plan, Response to Daymark/EM I-2a-Attacment 1, Efficiency Manitoba Demand Side Management Balanced Scorecard.

[97] Dunsky praised Manitoba Hydro's Planning section, giving high scores to program equity and strategic planning measures. Operations was identified as an area of improvement for Efficiency Manitoba moving forward, including end-to-end DSM program design, suggestions to include a program theory and logic model into program design, and including an independent EM&V program. In Delivered Value, key

Similarly, for the benchmarking across six different anonymized energy efficiency program administrators, the report compared Manitoba Hydro's performance across three categories.[98] Besides developing baseline scores and benchmarking, the Report also outlines areas of improvements for Efficiency Manitoba to enhance both program and corporate related activities.

Efficiency Manitoba is intending to update the DSM Scorecard on an annual basis and benchmarked energy efficiency program administrators.[99] Any annual scoring or update to the benchmarked program administrators should be done by third-party assessor.

Efficiency Manitoba's plan to evaluate its performance with the goal of improving the energy efficiency plan in a future is a positive step and the DSM Scorecard will help that purpose. However, some of the metrics developed in the Scorecard may be difficult to quantify as they are of qualitative nature. For example, the sub-metrics for leadership & culture,[100] which is one of the metrics of Operation category can either be scored in a yes/no fashion, thus can get either zero or full possible scores. Moreover, the reasoning behind the weights provided to each sub-category were not well discussed in the Report.[101] Thus, the Scorecard results could provide some ideas for future enhancements of program and delivery, but these results should not be taken as a single source for determining the success of Efficiency Manitoba's Plan.

areas of improvement include improving natural gas savings target realization from the current level of 71.4%, and electric from 82%.

[98] When compared to the other six program administrators scored anonymously by Dunsky, Manitoba Hydro's benchmark score fell right in the middle. Three programs fell above Manitoba in the "Top Performer" category, while the three that scored below Manitoba fell into the same "Moderate" category as Manitoba Hydro. Manitoba's ranking was carried by strength in the Planning category, particularly leading all other program administrators in Program Equity and Emerging Programs. The overall Operations score was lowest among the compared administrators, with Manitoba taking the lowest scores in Leadership & Culture and Customer Participation & Satisfaction scores (particularly driven by under-realized participation in the industrial and residential sectors). Delivered Value scored lower than average but had the second-highest DSM Investment Level category. This was brought down by having the second-lowest Achievement of Energy Savings category.

[99] 2020-2023 Efficiency Plan, Response to Daymark/EM I-51 (d)

[100] 2020-2023 Efficiency Plan, Response to Daymark/EM I-2a-Attacment 1, Efficiency Manitoba Demand Side Management Balanced Scorecard, Page 16.

[101] The three categories scored (Operations, Planning, and Derived Value) are scored out of possible score of 20 for each category. And each category have five metrics with varying level of weights assigned to them.

3. Evaluation, measurement, & verification methodology

The savings targets estimated by Efficiency Manitoba for the programs proposed in 2020-2023 Plan are based on assumptions surrounding hours of usage, unit savings, and market studies, and historical experiences. It is possible that the actual incurred savings be different than estimated savings presented with the Filing. For this purpose, it is imperative to perform rigorous, statistically-sound evaluation of each of the programs considered so that the actual savings can be identified and compared against the savings target calculated during the planning and included with the Filing. Thus, evaluation, measurement, & verification (EM&V) process is crucial for the successful delivery of 2020-23 Plan and any future energy efficiency plans.

Efficiency Manitoba considers savings associated with both program-related and codes & standards in its targets. As discussed earlier in the Report, the codes & standards related savings comprise of 22.5% of total savings for electric portfolio and 31.7% of total savings for natural gas portfolio for the next three-year plan. The program-related DSM activities comprise of remaining savings for both portfolios. Thus, evaluation is necessary to verify savings associated with activities considered in both program-related and codes & standards related savings.

As mandated by the Act, Efficiency Manitoba plans to engage third-party assessors to evaluate the programs considered in the 2020/23 Plan.[102] Efficiency Manitoba developed evaluation framework & planning report as a partial requirement under Efficiency Manitoba Act Section 9 (m). The Framework provides a common understanding of EM&V best practices and outlines evaluation guidelines for 2020-2023 Plan.

In addition to providing guidelines to evaluation for the proposed three-year Plan, the EM&V Framework,[103] developed by Econoler, also provides recommendation on timelines, cycles, and priorities for specific types of evaluations. Specifically, Econoler lays out four different evaluations that can be performed for each program – impact, process, market, and cost-effectiveness. Impact evaluation primarily reviews the key performance metrics of the program, such as energy savings. The process evaluation uses both qualitative and quantitative approach to measure other aspects of program

[102] 2020-23 Efficiency Plan, pdf page 183

[103] 2020/23 Efficiency Plan, pdf page 548 – 549, Attachment 5, Evaluation Framework & Planning Report.

evaluation such as customer reach, customer satisfaction, and tries to identify root cause for a program to be successful or lagging in meeting targets. Market evaluations study how Efficiency Manitoba's programs are impacting the greater market for the measures they are introducing or can be done pre-emptively to determine if goals are realistic to be achieved given supply and demand forces. Cost-effectiveness evaluations help compare the benefits and cost related with the implemented programs and help enhance currently used cost-effectiveness methodology if needed.

The Framework lays out recommendation on specifically which programs and bundles should undergo which types of evaluation, as well as, when they should occur over the three years of the Efficiency Manitoba Plan. While savings verifications for each program should occur every year, the Framework suggested that full impact evaluation for most programs should be conducted at least once over the three years.[104] Additionally, Econoler provides a suggested budget of the evaluations to be undertaken by year.

The evaluation framework was developed based on elements of evaluation best practices and protocols like the uniform methods project (UMP)[105]. Moreover, while selecting an independent assessor, Efficiency Manitoba mentioned that they will be tasked to develop detailed evaluation methodologies using the UMP and other protocols.[106]

a) Codes & standards

In addition to program-related savings, as mentioned earlier, the codes & standards (C&S) related savings comprise of at least a quarter of total savings for both electric and natural gas portfolios in the 2020/2323 Plan. The share of C&S savings warrants rigorous evaluation to verify savings associated with them. Efficiency Manitoba confirmed that it is planning to perform an evaluation of the codes and standards savings forecast over the 2020/23 Plan period.[107] Although the evaluation Framework acknowledges the need to

[104] A full schedule evaluation and their timeline are recommended by Econoler to fully comply with their suggested Framework, with reasoning as to why they have suggested the timings and types of evaluations. For example, process evaluations were recommended in year one for the electric Retail Rebates and Performance Optimization programs (among others) due to the programs contributing the largest amount of energy savings to the portfolio.

[105] Department of Energy, Office of Energy Efficiency & Renewable Energy, Uniform Methods Project for Determining Energy Efficiency Program Savings. Online: https://www.energy.gov/eere/about-us/ump-home, Accessed December 7, 2019.

[106] Response to Daymark/EM I-52

[107] Response to Daymark/EM I-88 (a).

evaluation savings associated with C&S,[108] the evaluation methodologies were not fully developed as program-specific methodologies.

Efficiency Manitoba is counting C&S related savings to its target as per the mandate by Efficiency Manitoba Regulation Section 8 part 1(c). Specifically, the mandate allows Efficiency Manitoba to claim savings from codes & standards towards its target as a result of Manitoba Hydro's past engagement and Efficiency Manitoba's ongoing and futures activities impacting codes & standards. However, it will be challenging to accurately measure C&S savings that are resulting from historical Manitoba Hydro and Efficiency Manitoba activities. In fact, Efficiency Manitoba recognized that there is no universally accepted standard approach by program administrations[109] for claiming C&S related savings. Thus, it is important that rigorous methodologies are established to appropriately measure and verify C&S savings included in Efficiency Manitoba's 2020/23Plan so that savings targets are accurately represented. Efficiency Manitoba has also recognized this need and has mentioned that the detailed evaluation methodology will be determined by the independent assessor selected through a request for proposal that Efficiency Manitoba is planning to develop within the first half of 2020/21.[110]

b) Role of Energy Efficiency Advisory Group (EEAG)

Efficiency Manitoba anticipates working with Energy Efficiency Advisory Group (EEAG) for reviewing the scope and selecting third-party evaluation as per the Efficiency Manitoba Act Section 27 (3) (b). [111] This is an important step because it allows EEAG members to provide any feedback to the proposed method. The stakeholder engagement process, as observed in Nova Scotia via DSM Advisory Group and other jurisdictions, has been successful.

c) Recommendation

Even though, Efficiency Manitoba is yet to develop evaluation methodologies and select independent assessor, they mentioned that the Evaluation Framework and Plan document will be used as the basis for Efficiency Manitoba's request for proposal to contract for external private sector

[108] 2020-2023 Efficiency Plan, pdf page 564.
[109] Response to Coalition/EM-71.
[110] Response to Daymark/EM I-88 (b).
[111] Response to Coalition/EM I-125(c).

evaluation services of the 2020/23 programs.[112] Based on the methodologies outline in the Evaluation Framework and our assessment, Daymark offers following recommendation:

- The programs/bundles that offer large share of portfolio-level savings should undergo annual full program evaluation. In addition to evaluating all the programs within the three-year Plan period, the success of programs that have the largest share of total savings is crucial for overall portfolio success. The programs that have savings greater than 10% of portfolio savings should have a full evaluation performed so that findings/learnings can be used for the next year's plan[113,114]
- Based on the evaluation plan outlined in the evaluation framework, all programs would be fully evaluated at least once in three years. The results of the programs that will be fully evaluated in the third year will not be available while developing the next three-year Plan. Daymark recommends exploring options to perform full evaluations of all programs within the first two-years so that findings can be incorporated in developing the next three-year Plan
- The EM&V framework & plan proposed four types of studies – impact evaluation, process evaluation, market evaluation, and cost-effectiveness analysis. Although the recommended timeline of impact and process evaluations is outlined, Efficiency Manitoba should also develop a list and timeline of market evaluation and cost-effectiveness studies to be conducted during 2020-2023 Plan prior to issuing request for proposal to contract for external private sector evaluation services of the 2020/23 programs
- The codes & standards savings comprise of 33% of total savings for natural gas portfolio and 23% of total savings for electric portfolio. The evaluation method for codes & standards should be fully developed and reviewed by EEAG members

[112] Response to Daymark/EM I-86.

[113] In 2020-2023 Plan, there are two bundles with savings greater than 10% in electric portfolio. They are Load Displacement (37.5%) and Renovation (35.1%). Similarly, there are four bundles in natural gas portfolio with savings greater than 10%. They are Home Renovation (10.6%), Income Qualified (12.6%), Renovation (13.2%), and Custom (51.9%).

[114] Efficiency Manitoba confirmed that Load Displacement bundle will have full impact evaluation during each of the Plan. (Response to Daymark/EM I-89)

VI. SAVINGS TARGETS

In this section we will discuss the targets that have been established for Efficiency Manitoba in the Act and adopted with the PUB Regulations. We will discuss the issues that arise in relation to the interpretation of the eligibility requirements for savings to be counted and how Efficiency Manitoba is interpreting the eligibility. We will discuss any concerns we have, based on the discussion and observations earlier in this report that present challenges to accomplishing the savings targets on an annual and long-term basis. Daymark recognizes that the PUB's interpretation will be the one that matters. Our intention is not to make a recommendation, but to provide the PUB with insight and some alternatives that might prove useful in informing the PUB's decisions on savings eligibility. Lastly, this section addresses the extent to which Daymark has found information in its review that might mean raising or lowering targets might be worth consideration by the PUB.

A. Targets in the regulations

The annual savings targets have been established at a 1.5% for electric efficiency and 0.75% for natural gas in the Act and the regulations, as we have discussed several times earlier in this report. The Act and regulations also described what would be eligible to count toward savings achieved:

- Energy efficiency savings that result from activities by Efficiency Manitoba in an approved Plan
- Energy efficiency savings that results from actions by Manitoba Hydro, provided they were part of the approved Efficiency Manitoba Plan
- Energy efficiency savings that results from the adoption of codes & standards to the establishment of which either Efficiency Manitoba or Manitoba Hydro contributed

The percentages above would be applied to the prior year Manitoba Hydro electric sales and to the most recent publicly available annual natural gas sales by Centra. If appropriate, the savings are to be weather normalized.

Efficiency Manitoba proposes a Plan where part of the savings target achievement comes from programs and the remainder from codes & standards. This applies to both the electric portfolio and the natural gas portfolio, as shown in Table 44 below.

Description	Electric		Natural Gas	
	Savings (GWh)	Percentage	Savings (Million cu. m.)	Percentage
Program-related savings	880.1	77%	25.7	68%
Codes and Standards Savings	256.0	23%	12.0	32%
Total Savings	***1136.1***	***100%***	***37.7***	***100%***

Table 44: Electric and natural gas percent savings target achievement for codes and standards

We will discuss the program Plan savings and the codes & standards savings in the following sections.

B. Three-year Efficiency Manitoba program Plan for determining savings

The three-year Efficiency Manitoba plan proposes quite an expansive array of bundles, programs and measures for each portfolio, both electric and natural gas. The planning of activities is derived from a focus on the annual target achievement for each of the three years of the Plan.

Efficiency Manitoba calculates the annualized savings for measures enacted during any part of the fiscal year, meaning that the same measure, whether installed January 2 and December 31, provides the same contribution to meeting the goal. This means that during the first Plan year the savings amount toward the target would be substantially higher than the actual savings during the first Plan year, since, on average, measures are in place for about six months. This effect could be compounded by the fact that seasonally impactful measures may miss their first year 'high savings' season. Daymark does not have any concern about this method as long as everyone recognizes how it is being done.

This annualized savings, using one year of savings for each measure, means that the measure life does not affect the savings that is counted toward a single year achievement. For example, a 5-year life measure and a 30-year life measure each contribute one year of annualized savings toward establishing the plans forecast and towards actual accomplishments and whether targets are met.

1. Electricity program savings

When we reviewed the electric savings further, we found that Efficiency Manitoba is interpreting the regulations to mean that programs the result in customer generation behind the meter using renewable energy such as biomass and solar as eligible to count as electric savings since they argue fuel switching to fossil fuel from electricity is explicitly prohibited (and, presumably, the lack of prohibition in the case of renewable energy means these savings are permitted). There is significant behind the meter generation being counted as energy savings in the load displacement program.

The installations and use of behind the meter generation as a 'measure' in the load displacement program present an interesting need for interpretation. If the savings result in any projects requiring continued incentives each year, out of the then current year budget, the Efficiency Manitoba Plan assumes that the savings is counted as contributing to each year's annual target for savings achievement. It is the equivalent of a one-year measure life that is implemented again each single year. The amount of measure savings is a significant portion of the savings Efficiency Manitoba is crediting from programs. This leads to the question, what the best way is to do the accounting, in terms of what savings should be attributed to Efficiency Manitoba's accomplishments each year.

Another program that might have similar accounting and interpretation issues is community geothermal. The Efficiency Manitoba plan describes the potential for alternative financing of the community geothermal program in a way that suggests it could create the need for similar accounting decisions, since Efficiency Manitoba might be making on-going payments rather than incentives.

We singled out this accounting for savings so that the PUB could decide on the way Efficiency Manitoba should do the accounting. Some of our thoughts are:

- The way incentives are paid should not affect the way a measure is accounted.
- Measures should only count in one year
- Measures such as these are long-lived and that should be recognized for long-term targets

Daymark has analyzed the calculation for savings concerns discussed above. We have collected the impact of these savings, and show them on the bar chart below to see if they put delivering the savings at risk. The following

items are either open to interpretation as to whether they should be included or have risk of not being delivered to the extended forecast:

- Savings via customer generation
- Savings from the same measure counting each year, since some incentive payment is made from each year's budget to keep the measure generating or saving (or even perhaps due annualized incentive payments that could occur in a year as an alternative to single year incentives which would only count the installations savings once)
- Savings that would be reduced if bundle offering were reduced to eliminate measures that might be uneconomic uneconomic (as discussed in the cost effectiveness section, 7% of projected electric savings were found to result from measures found to be uneconomic from the perspective of the Pure Measure Value Test)
- Savings at deliverability risk due to program design
- Savings at deliverability risk due to resource constraints
- Savings at deliverability risk due to new start-up or substantially changed delivery approaches from what Manitoba Hydro has been assuming
- Savings at risk due to aggressive penetration number assumptions

2. Natural gas program saving

- We should discuss interactive effects increasing natural gas uses as electric waste heat increases natural gas usage for heating
- We should highlight discussions from the Deliverability Section where we see potential risk to below target accomplishments
- Daymark has analyzed the calculation for savings concerns discussed above. We have collected the impact of them and shown them on the bar chart below to see if they are put delivering the savings at risk. The following items are either open to interpretation as to whether they should be included or have risk of not being delivered to the extent forecasted
  - Savings that would be reduced if bundle offering were reduced to eliminate measures that might be uneconomic (the cost effectiveness section 32% of natural gas savings to be attributable to uneconomic measures);
  - Savings at deliverability risk due to program design;
  - Savings at deliverability risk due to resource constraints;
  - Savings at deliverability risk due to new start-up or substantially changed delivery approaches from what Manitoba Hydro has been assuming;

- Savings at risk due to aggressive penetration number assumptions.

C. Codes & standards

Electric and natural gas savings from improvements in codes & standards make up a significant fraction of the savings projected in Efficiency Manitoba's three-year plan—approximately 23% of electric savings and 32% of natural gas savings, as shown in Table 45 below. Daymark reviewed Efficiency Manitoba's approach to including codes & standards-related savings, as well as Efficiency Manitoba's specific estimates.

Description	Electric		Natural Gas	
	Savings (GWh)	Percentage	Savings (Million cu. m.)	Percentage
Program-related savings	880.1	77%	25.7	68%
Codes and Standards Savings	256.0	23%	12.0	32%
Total Savings	***1136.1***	***100%***	***37.7***	***100%***

Table 45: Three-year savings for codes & standards

1. Legislative and regulatory background

The inclusion of savings from codes and standards is explicitly permitted in Regulation 119-2019, Section 8(1)(c), which states that "Net savings in the consumption of energy or natural gas count towards the respective savings target established in Section 7 of the Act if the net savings are reasonably attributable to a code, standard or regulation to which Efficiency Manitoba or Manitoba Hydro has made a material contribution."

The language in the regulation establishes a framework, but leaves open the question of which codes, standards, or regulations should be considered as something to which "Efficiency Manitoba or Manitoba Hydro has made a material contribution."

Efficiency Manitoba's position is that Manitoba Hydro can be considered to have made a "material contribution" to a list of thirteen enacted or anticipated codes and/or standards, either by supporting efficiency that helped pave the way for future standards, or through direct advocacy and involvement in the

passage of the standards.[115] Accordingly, they consider the impact of all these codes & standards in their three-year plan.

2. Efficiency Manitoba's approach to calculating codes & standards savings

In calculating codes and standards savings, Efficiency Manitoba developed an approach that is intended to avoid double-counting and to ensure that, in addition to energy savings, any possible increases in energy consumption resulting from codes and standards are also considered. Thus, in each year of the Plan, codes & standards savings are calculated similarly to the impact of program measures. In a given year, Efficiency Manitoba considers codes & standards energy savings to be the annual, one-year savings resulting from new actions taken under the codes & standards—for example, new installations of standard-compliant equipment, or buildings newly constructed in compliance with efficiency codes & standards. The intention is, for a given year, to count only additional savings attributable to the codes & standards—the "incremental savings" compared to the baseline technology.[116]

In addition, Efficiency Manitoba recognizes that savings in one area can potentially result in increased consumption in another. The main example of this is energy-efficient lightbulbs, which emit less heat than incandescent bulbs. This property of efficient light bulbs can help consumers conserve on air conditioning in the summer, but in the winter, heat not produced in the home by light bulbs may need to be replaced by increased use of natural gas for heating. For this reason, in Efficiency Manitoba's analysis, codes and standards related to lighting show positive savings in the electric sector, but negative savings in the natural gas sector.

Finally, Efficiency Manitoba's savings estimates from codes and standards is adjusted to reflect imperfect compliance rates. In its Plan, Efficiency Manitoba states that they "will work closely with provincial departments to support compliance activities in the market." However, in the current Plan, Efficiency Manitoba has only included compliance improvements for savings related to commercial new construction, where Efficiency Manitoba projects compliance rates rising from 50% in year 1 to 85% in year 3 of the Plan.

[115] Information request response to PUB-49

[116] Plan, A.9,4.5

3. Composition of Efficiency Manitoba's projected codes & standards

Efficiency Manitoba's projected codes and standards savings are summarized in Table A9.1 of the Plan[117] which is reproduced as Table 46 below.

Codes & standards	Electric savings (GWh)			Natural gas savings (million m3)		
	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23
Residential building code	16.1	14.8	13.6	4.10	4.10	4.00
Residential general service lighting	17.1	9.1	5	(0.80)	(0.40)	(0.20)
Residential appliance standards	17.2	15.4	13.7	-	-	-
Other residential equipment standards	3.8	3.5	3.2	-	-	-
Commercial building code	18.7	28.1	31.8	0.50	0.80	0.90
Commercial general service lighting standards	14.5	14.5	14.5	(0.30)	(0.30)	(0.30)
Other commercial equipment standards	0.6	0.6	0.5	-	-	-
Total	**88**	**86**	**82.3**	**3.5**	**4.2**	**4.4**

Table 46: Annual forecasted savings from codes & standards initiatives

In the electric sector, the vast majority of codes & standards savings (taking the commercial, industrial, and residential sectors together) is made up of savings related to building codes, lighting, and appliance standards, as illustrated by Figure 16.

[117] Some of these values were updated in information request PUB-39

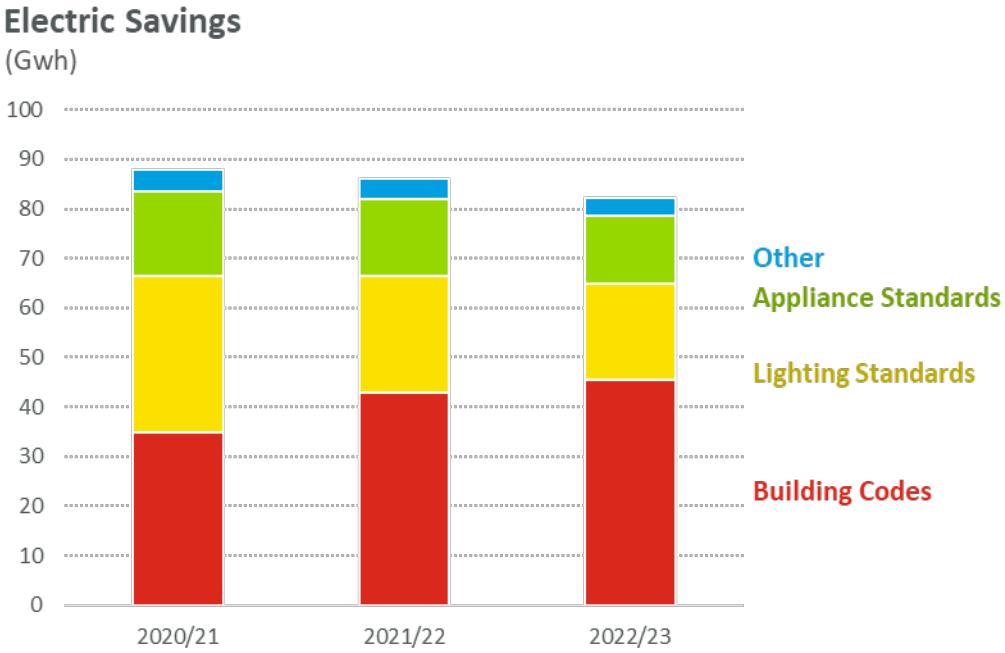


Figure 16: Electric savings in codes & standards

In the natural gas sector, all projected savings come from building codes (insulation and other standards), as illustrated by Figure 17. As discussed above, a small negative savings impact on natural gas is seen from conversion to more efficient (but less heat-producing) light bulbs, resulting in greater use of natural gas for heating.

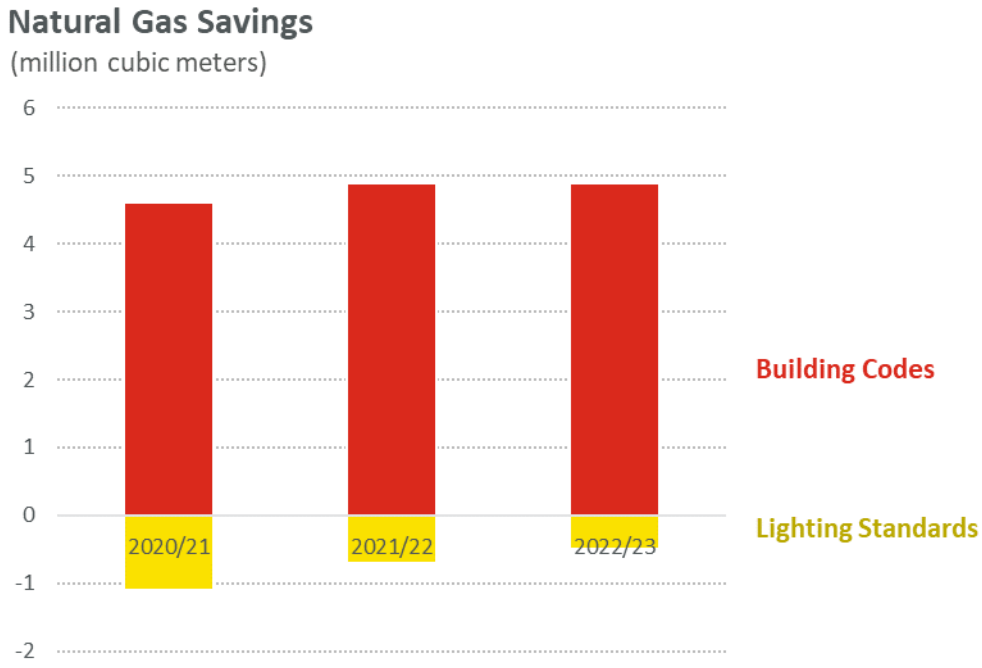


Figure 17: Natural gas savings in codes & standards

4. Additional adjustments to codes & standards savings

There are two main differences between how Efficiency Manitoba treats savings from codes and standards and how they treat savings resulting from programs. First, certain adjustments Efficiency Manitoba makes for program savings—adjustments for natural conservation, free riders, and free drivers—are not made in estimating codes and standards savings. Furthermore, while estimates of measure effectiveness sometime include reductions or phase-out of savings with measure age, there is no similar adjustment of savings for codes and standards as they age.

In both these respects, Efficiency Manitoba is missing something important about understanding the true efficiency impacts of codes & standards. Although "free ridership" is not a concept that applies directly to codes & standards, a very similar phenomenon exists. There will always be some customers who would choose the more energy efficient approach or technology even in the absence of codes & standards. These customers are not "free riders," since they are not taking advantage of any subsidies or other benefits—but they may be considered analogous to free riders in the codes & standards context. This savings is often referred to as "naturally occurring market adoption" (NOMAD) savings.

Another factor that should be considered in getting a sense of the true energy efficiency impact of codes & standards is whether the impact of codes & standards changes as they age. For some codes & standards, as technologies and markets evolve, it will become more common that the more efficient technologies they require become the default option. An empirical question, in thinking about longstanding codes & standards, could be how much of compliance-related savings should, on an ongoing basis, be attributed to the code or standard itself, and how much may be considered integrated into a new baseline.

Over the long term, failure to make these adjustments could end up significantly distorting Efficiency Manitoba's savings reporting, as more and more savings become attributed to older codes and standards that may no longer have a meaningful effect.

To get a sense of the potential impact of these two factors (NOMAD and aging codes and standards), Daymark did some additional examination of the data. Of the codes & standards whose impacts Efficiency Manitoba considers in its Plan, the earliest enacted dates back to 2004 (a code regulating lighting efficiency in exit signs). Other codes & standards date to as early as 2006, while some are not yet enacted (but are expected to be enacted within the Plan period). Table 47 lists the codes & standards included in the savings projections[118] and the dates in which they were enacted or are expected to be enacted.

[118] As identified in Efficiency Manitoba's response to PUB-39

Building Codes	**12/1/2010**	New efficiencies incorporated into new construction and homes undergoing extensive renovations
Provincial Building Code	**2020**	Promote and offer incentives to customers to install energy efficient technologies and building practices within the new home construction industry
Residential Lighting		
General Service Lamps	**1/1/2014**[ɣ] **12/31/2014**[†]	Introduced Minimum Energy Performance Standards
Residential Appliances		
Residential Appliances	**Continuing**	New products are added to Energy Efficiency Regulations every year through the Canadian Standards Association Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER)
Other Residential Equipment		
Central Air Conditioning	**11/15/2006**	Minimum SEER rating of 13
High Efficiency Furnace	**12/30/2009**	Minimum of 92% AFUE required for replacement furnaces up to 225,000 Btu/h sold in Manitoba
	12/31/2009	Minimum of 90% AFUE‡ required for replacement furnaces up to 225,000 Btu/h sold in Canada
COMMERCIAL		
Commercial New Construction		
Building Code	**12/1/2014**	Energy code for new commercial construction
Commercial Lighting		
General Service Lamps	**1/1/2014**[ɣ] **12/31/2014**[†]	Introduced Minimum Energy Performance Standards
Exit Signs	**11/1/2004**	22W for signs 120V or less; 27W for signs greater than 120V
Fluorescent Lamp Ballasts	**11/15/2006**[ᵡ] **4/1/2010***	Minimum energy performance standard required for fluorescent lamp ballasts
Other Commercial Equipment		
Pre-Rinse Spray Valve	**4/1/2011**	Maximum flow rate of 6.1L/minute
Commercial Boilers	**2020**	90% minimum efficiency ratings for new construction, and 85% for replacement

[ɣ]75 to 100W equivalent lamps
[†]40 to 60W equivalent lamps
[ᵡ]New Construction Market
**Renovation Market*

Table 47: Effective dates of respective codes & standards

To explore the level of impact that accounting for NOMAD and codes & standards aging might have, Daymark did an illustrative analysis for each code & standard area, approximating possible NOMAD rates by using free rider percentages found in Efficiency Manitoba's analysis of programs for related technologies. This analysis shows the potential impact of phasing out codes & standards savings for codes & standards more than seven years old.

For electricity, the hypothetical impacts of these adjustments on codes and standards savings can be seen in Figure 18:

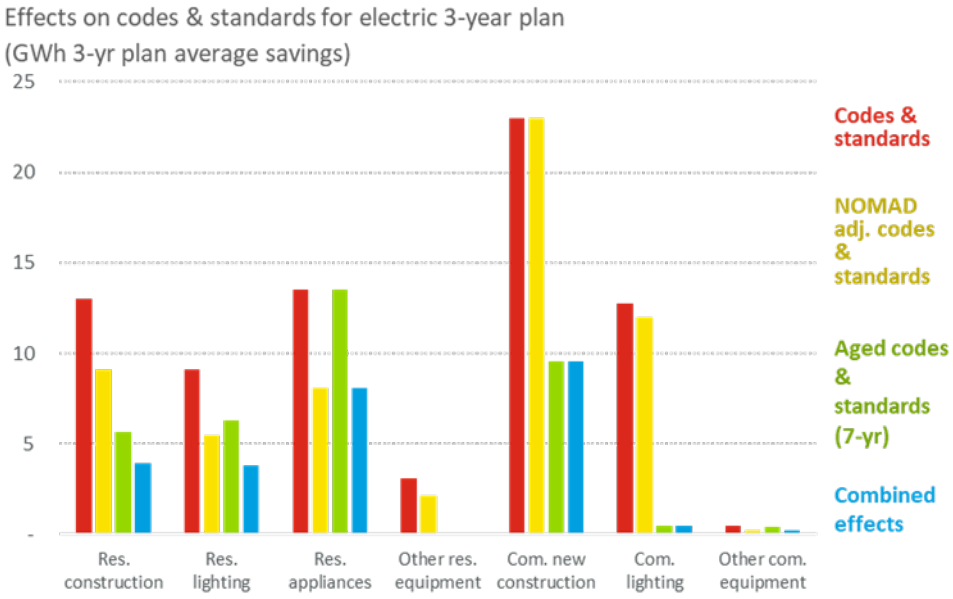


Figure 18: Effects on codes & standards for the electric 3-year plan

For natural gas, the hypothetical adjustment impacts are illustrated in Figure 19:

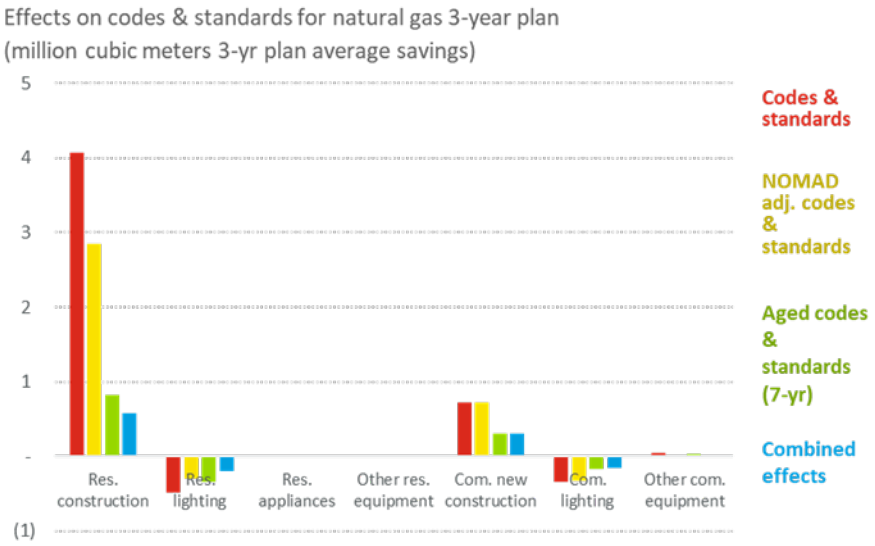


Figure 19: Effects on codes & standards for the natural gas 3-year plan

In both cases, the impacts of including these adjustments are significant. They would, of course, vary depending on the selected NOMAD adjustment factor and age cut off for codes & standards. Our choice of early adopter adjustment factors based on "free rider" factors and of a seven-year code cut off for codes & standards is not intended to be prescriptive advice that these are the correct factors to use—the point is to create a framework to explore how significant an impact these factors might have.

Our analysis shows that the potential for over-counting codes & standards impacts is potentially significant. Adapting the codes & standards methodology to avoid over-counting could be valuable in the future, in terms of ensuring that the focus is on measuring the realized impact of energy efficiency initiatives. Identifying the correct NOMAD and code aging adjustment factors could, however, prove to be challenging. Simpler options that might be considered by the PUB include capping the share of the annual savings requirement that can be fulfilled through codes and standards or putting a 10-year limit on savings time frames.

D. Long Term Impact

1. Outlook for meeting the 15 year targets/expectations

In addition to the ACT and the Regulations proving annual savings targets for energy efficiency for electric (1.5%) and natural gas (0.75%), long term, 15-year, savings levels were discussed. The ACT and regulations were not very descriptive as to how to account for long-term and ongoing savings.

The 15-year savings expectations were numerically determined in the limited discussion as 15 years of efficiency-driven energy savings x 1.5% each year = 22.5% savings after 15 years for electric, and similarly 15 years of efficiency driven energy savings x 0.75% each year = 11.25% for natural gas. These could be taken as an expectation or a target.

We are not sure if this is meant to be the percentages that are still contributing to savings at the end of the 15 years or the percentages that have contributed over the last 15 years. We will illustrate what savings will be in effect after year 15 to compare to the simple expectations of 22.5% and 11.25% for electric and natural gas respectively.

Daymark was concerned that since many of the measures in the electric programs had lives of 15 years or less, we were expecting a drop off in on-going savings by year 15 from the first 3-year plan. We needed to model how measure life affects the 'still contributing' savings concept and show the 15-year table including a single three-year program illustration.

Since measure life is primarily a program effect, we wanted to illustrate the effect on just the programs. In the total electric savings of 1.5%, the programs make up about 75% or 1.13%. For natural gas programs are about 68% of the 0.75% or 0.51% annually from programs. This would make the 15-year numbers for electric programs about 16.95% and 7.65% for natural gas programs.

The figure below illustrates the effect of this first three-year plan for electric. The red represents increasing the savings by 1.5% each year, the annual target. The green represents the amount of savings that ends after the prior year due to measures reaching the end of their respective lives. We see that for this single three-year program that added 1.13% each year or 3.4% the effect of savings going away after measures reach their life slowly erodes to only 1.16% at the end of 15 years. This occurs since most of the savings for electric comes

from measures with lives less than 15 years. On the chart, but not illustrated but inside the box we have put the total effect at the end of 15 years if we layered 4 more three-year plans, 9.22%, quite a shortfall from the 16.95% expectation from electric programs.

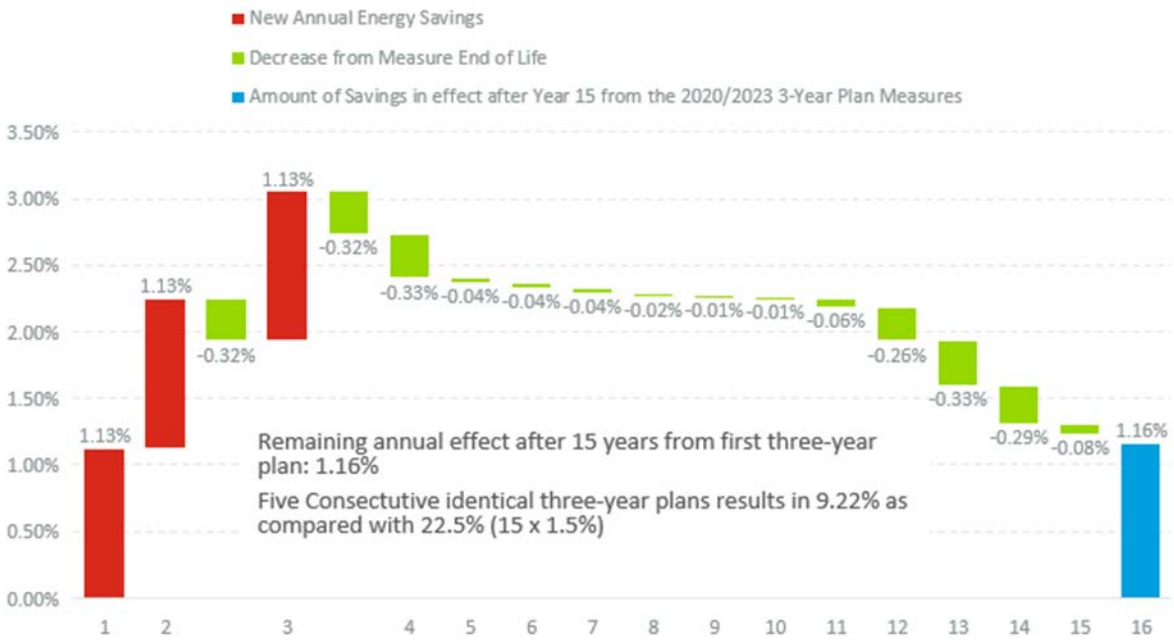


Figure 20: Savings in effect after year 15 from electric 2020/23 Plan measures

The measure life effect on long-term savings is much smaller for the natural gas portfolio since a significant amount of the savings comes from measures with lives longer than 15 years. In the figure below the red represents increasing the natural gas savings from programs by 0.51% each year, the annual target. The green represents the amount of savings that ends after the prior year due to measures reaching the end of their respective lives. We see that for this single three-year program that added 0.51% each year or 1.5% the effect of savings going away after measures reach their life slowly erodes slightly to 1.13% at the end of 15 years. This occurs since most of the savings for electric comes from measures with lives less than 15 years. On the chart, but not illustrated but inside the box we have put the total effect at the end of 15 years if we layered 4 more three-year plans, 6.63%, just a single percentage point lower than the 7.65% expectation from the natural gas programs.

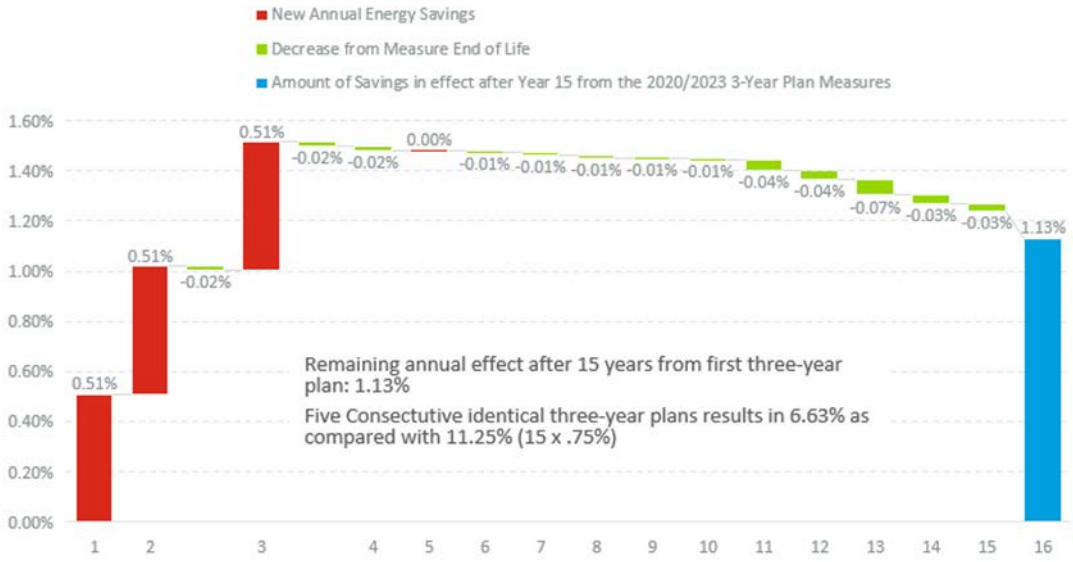


Figure 21: Savings in effect after year 15 from natural gas 2020/23 Plan measures

Efficiency Manitoba has not focused on the long-term implications of this first plan. This illustration does not say that anything must change other than the long-term expectation. However, if the long-term 15-year savings for energy demand be lower for electric by 22.5% and for natural gas 11.25% then something would have to change, such as increasing the annual savings target with each plan to account for replacing measures already out of service.

2. Potential for revisions to targets

Daymark has not found any compelling data that a higher savings target show be set since we have found that there are challenges ahead for Efficiency Manitoba to achieve savings goals of this plan. Daymark also has not arrived at a recommendation to lower the goals to account for the potential challenges ahead for Efficiency Manitoba.

VII. SUMMARY

A. Compliance

Our review has found that but for a critique in over estimation of deliverability or a misinterpretation in the Regulations that the Efficiency Manitoba Plan complies with the requirements.

1) Efficiency Manitoba has proposed a Plan that on average over the three years averages producing enough savings to meet the targets in the Regulations

2) Efficiency Manitoba has produced a Plan that should successfully present programs that are highly accessible to the Hard to Reach Manitobans

3) Efficiency Manitoba has performed cost effectiveness testing of the Plan programs using the prescribed costs and benefits

B. Deliverability/implementation plan review

Our initial review finds deliverability concerns because Efficiency Manitoba acknowledges in the report and in responses to discovery that:

4) Efficiency Manitoba has committed to increase energy savings under a substantially lower budget compared to the existing Manitoba Hydro program

5) Efficiency Manitoba plans to achieve this savings goal with 30% less staff than Manitoba Hydro had

6) The transfer of staff and delivery partner contracts will offset some of the start-up challenges Efficiency Manitoba will face to help reduce some of the potential for shortfalls in achieving savings

7) Based upon our review of Canadian and US energy efficiency program budgets, Efficiency Manitoba's program plans fit generally from a sector breakdown and incentive concentration

8) Efficiency Manitoba has included aggressive market penetration assumptions based on ambitious savings targets

9) Efficiency Manitoba relies on new or updated sources for estimating participation, including consultations with delivery partners, survey data and recent permit applications, which produce a step change increase in the level of saving expected for existing programs

10) The Commercial Building Optimization programs are not clearly distinguished from similar programs, for example both In-Suite Efficiency and Renovation include LED lighting and HRV controls. Overlap such as this raises concerns about difficulty with marketing communication and training, as well as double counting of savings in the CRM system

11) Efficiency Manitoba will not be able to meet its natural gas savings target for the first year

12) The second is Efficiency Manitoba's acknowledgement that it has yet to identify the delivery partners needed to serve its new programs, such as programs designed to serve hard to reach markets

13) The Efficiency Manitoba Plan has much to accomplish in staffing, infrastructure and public engagement in order to effectively reach the Indigenous population

14) The Efficiency Manitoba Plan is relying on immediate and effective collaboration with first Nations leadership groups

15) Efficiency Manitoba's CRM system remains under development at this time and is untested

C. Accounting for savings from codes & standards

16) Efficiency Manitoba has a very liberal and inclusive interpretation of the eligibility for all codes & standards savings to count toward annual savings targets

17) Efficiency Manitoba does not appear to assume that the effects of a code or standard implementation lessens over time as the normal penetration of newer more efficient technologies or practices would be adopted at higher rates without the code or standard, likely resulting in an over-estimation of savings

18) Efficiency Manitoba does not appear to be incorporating some sunsetting timetable for the effects of a code or standard, despite some being in place more than 10 years

19) Efficiency Manitoba's achievement of the savings targets is relying on the establishment of a few compliance coordinators to successfully move codes & standards compliance by the end on this plan from the current estimate of 50% to 100%

D. Efficiency Manitoba has based its cost effectiveness benefit/cost fit or concerns

20) Efficiency Manitoba has performed a rigorous analysis of costs and benefits in its cost effectiveness testing

21) Efficiency Manitoba has based its cost effectiveness on the savings and costs prescribed by the act and the Regulations, utilizing the Program Administrator Cost perspective

22) Efficiency Manitoba has produced an electric portfolio of bundles and programs that are cost effective

23) Daymark estimates that 7% of the electric savings identified comes from measures where the measure costs alone exceed the benefits

24) Efficiency Manitoba has produced a natural gas portfolio of bundles and programs that meets the target prescribed by the Act and Regulations but in aggregate breaks even over the 30-year planning period

25) About half the natural gas programs are not cost effective from the program administrator cost perspective

26) Daymark estimates that 30% of the natural gas savings identified comes from measures where the measure costs alone exceed the benefits

27) Approximately 84% of the Electric Portfolio savings comes from measures with lives of 15 years or less, half of that, 42%, with lives of 5 years or less

28) Only 22% of the Natural Gas Portfolio savings comes from measures with lives of 15 years or less

29) The metric used by Efficiency Manitoba to measure impact on rates, Lifecycle Revenue Impact, LRI, is calculated in a manner that underestimates significantly the impact during the next 10 years for the Electric Portfolio of the plan due to the high percentage of short-lived measures

30) The Efficiency Manitoba LRI metric methodology for overestimates the rate impact of the natural gas portfolio but to a lesser extent than the electric portfolio

E. Evaluation & measurement and verification

31) Efficiency Manitoba is proposing to use the Customer Relationship Management/Demand-Side Management (CRM/DSM) System to monitor and track on savings and budget at measure and program-levels via dashboards and reports

32) The process for procuring and implementing CRM/DSM System is currently ongoing. Efficiency Manitoba mentioned that it plans to issue a request for proposal by December 2019, perform vendor evaluation and selection by February 2020, and start implementation work commencing by March 2020

33) Efficiency Manitoba plans to evaluate its portfolio-level and corporate performances and benchmark it's performances with other energy efficiency program administrators throughout North America with the help of the DSM Scorecard

34) The DSM scorecard, intended to be updated annually, assesses Efficiency Manitoba's performance equally in three categories in operations, planning, and delivered values

35) Some of the metrics included in the Scorecard are of qualitative nature. It may be difficult to assign scores to these qualitative metrics

36) Efficiency Manitoba plans to perform evaluation studies by independent assessors selected through a request for proposal process

37) Efficiency Manitoba filed an evaluation framework and plan with the Filing that forms a guideline for evaluation studies for 2020/23 Plan and outlines common understanding of EM&V best practices

38) The Framework recommends that all programs be fully evaluated at least once in three years. The results of the programs that will be fully evaluated after the end of the third year will not be available while developing the next three-year energy efficiency Plan

39) Although Efficiency Manitoba is planning to perform an evaluation of the codes and standards savings forecast via independent assessors, the methodologies are not fully developed in submitted evaluation Framework

40) Efficiency Manitoba anticipates working with Energy Efficiency Advisory Group (EEAG) for reviewing the scope and selecting third-party assessors for evaluation work

41) Efficiency Manitoba should monitor program rollout in early 2020 in order to make early tweaks to improve participation by gathering information from both participants and non-participants through process evaluation focus groups or other survey approaches to get a handle on areas for improvement

42) Also, a concern is the data reliance for evaluation purposes, which we know Efficiency Manitoba leadership recognizes, as the early program rollout will not be in the final system developed to track information, Efficiency Manitoba must be careful to gather and maintain the information necessary to ensure evaluations are complete

F. Long-term impact

43) The 15-year anticipated savings level will not be met without changing annual savings targets, requiring longer lived measure focus, and/or changing the way savings are determined

VIII. APPENDICIES

APPENDIX A: EFFICIENCY MANITOBA ACT

2nd Session, 41st Legislature,
Manitoba,
66 Elizabeth II, 2017

2e session, 41e législature,
Manitoba,
66 Elizabeth II, 2017

BILL 19

THE EFFICIENCY MANITOBA ACT

Honourable Mr. Schuler

PROJET DE LOI 19

LOI SUR LA SOCIÉTÉ POUR L'EFFICACITÉ ÉNERGÉTIQUE AU MANITOBA

M. le ministre Schuler

First Reading / Première lecture : _____

Second Reading / Deuxième lecture : _____

Committee / Comité : _____

Concurrence and Third Reading / Approbation et troisième lecture : _____

Royal Assent / Date de sanction : _____

EXPLANATORY NOTE

This Act establishes Efficiency Manitoba Inc.

Efficiency Manitoba is given the mandate to achieve electrical energy savings of 1.5% annually and natural gas savings of 0.75% annually in Manitoba during the first 15 years of its operations. Additional savings targets are to be established by regulation for subsequent 15-year periods.

Efficiency Manitoba is to achieve these targets through a series of three-year plans that it prepares and submits to the Public Utilities Board. The plans are reviewed by the PUB and are to be implemented by Efficiency Manitoba after they have been approved by the minister.

Efficiency Manitoba is given authority to implement on-meter efficiency programs and to administer, on a transitional basis, the affordable energy fund. This fund was previously provided for in *The Energy Savings Act*.

In recognition of the benefits received by Manitoba Hydro from the efforts of Efficiency Manitoba, Manitoba Hydro is responsible for funding Efficiency Manitoba's operations.

Efficiency Manitoba may also be given a mandate to achieve savings in respect of electrical power, potable water and fossil fuels consumed in Manitoba's transportation sector. A comprehensive set of regulation making powers is provided to govern Efficiency Manitoba's activities in these areas.

The Energy Savings Act is repealed and consequential amendments are made to four other Acts.

NOTE EXPLICATIVE

La présente loi constitue la Société pour l'efficacité énergétique au Manitoba.

Au cours de la première période de 15 ans suivant sa constitution, la Société a pour mandat de réaliser au Manitoba des économies annuelles au chapitre de la consommation d'énergie de 1,5 % pour l'électricité et de 0,75 % pour le gaz naturel. Des objectifs d'économies additionnelles sont fixés par règlement pour chaque période de 15 ans suivant la période initiale.

La Société atteint ces objectifs en établissant une série de plans d'efficacité énergétique triennaux qu'elle soumet à la Régie des services publics. La Régie examine ces plans qui, une fois approuvés par le ministre, sont mis en œuvre par la Société.

Le projet de loi accorde à la Société le pouvoir de mettre en œuvre des programmes d'aide à l'efficacité énergétique et de gérer de manière transitoire le Fonds de limitation du prix de l'énergie. Ce fonds était auparavant régi par la *Loi sur les économies d'énergie*.

Hydro-Manitoba est tenue de financer les activités de la Société en contrepartie des nombreux avantages qu'elle reçoit d'elle.

La Société peut aussi être autorisée à réaliser des économies en matière de puissance électrique et d'eau potable ainsi qu'à l'égard des combustibles fossiles consommés par le secteur des transports au Manitoba. À cet égard, le projet de loi prévoit de vastes pouvoirs réglementaires régissant les activités de la Société.

La *Loi sur les économies d'énergie* est abrogée et des modifications corrélatives sont apportées à quatre lois.

THE EFFICIENCY MANITOBA ACT

LOI SUR LA SOCIÉTÉ POUR L'EFFICACITÉ ÉNERGÉTIQUE AU MANITOBA

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BILL 19

THE EFFICIENCY MANITOBA ACT

(Assented to)

HER MAJESTY, by and with the advice and consent of the Legislative Assembly of Manitoba, enacts as follows:

PROJET DE LOI 19

LOI SUR LA SOCIÉTÉ POUR L'EFFICACITÉ ÉNERGÉTIQUE AU MANITOBA

(Date de sanction :)

SA MAJESTÉ, sur l'avis et avec le consentement de l'Assemblée législative du Manitoba, édicte :

PART 1

PURPOSE AND DEFINITIONS

Purpose of this Act

1 The purpose of this Act is to

(a) establish Efficiency Manitoba as a corporation with the mandate set out in section 4;

(b) establish savings targets Efficiency Manitoba is to meet in respect of the consumption of electrical energy and natural gas in Manitoba; and

(c) establish a funding and regulatory oversight framework for Efficiency Manitoba.

PARTIE 1

OBJET ET DÉFINITIONS

Objet

1 La présente loi a pour objet :

a) de constituer la Société pour l'efficacité énergétique au Manitoba à titre de société dont le mandat est prévu à l'article 4;

b) de fixer les objectifs d'économies que la Société doit atteindre en matière de consommation d'énergie électrique et de gaz naturel au Manitoba;

c) de mettre en place un cadre de financement et de surveillance réglementaire pour la Société.

Definitions

2 The following definitions apply in this Act.

"board" means the board of directors of Efficiency Manitoba. (« conseil »)

"commencement date" means the date Efficiency Manitoba is to begin implementing its first efficiency plan, as prescribed in the regulations. (« date de mise en œuvre »)

"consumption" means, on a weather-adjusted basis,

(a) for electrical energy, electrical energy that is metered and sold to a customer in Manitoba; and

(b) for natural gas, natural gas that

(i) is metered and sold to a customer in Manitoba, and

(ii) is not used as a feedstock or ingredient in the manufacture of a product. (« consommation »)

"demand for electrical power" means the requirement for electrical power at a specific time by a user of electrical power in Manitoba. (« demande en puissance électrique »)

"demand-side management initiative" means a measure or action taken, or a program, service or rate designed to reduce the consumption of electrical energy or natural gas, including a resulting reduction in the demand for electrical power, in Manitoba, but does not include

(a) a measure, action, program, service or rate that encourages or results in a switch from the use of one kind of fuel source to another if the switch increases greenhouse gas emissions in Manitoba; or

(b) a prescribed measure, action, program, service or rate. (« initiative d'effacement de consommation »)

Définitions

2 Les définitions qui suivent s'appliquent à la présente loi.

« conseil » Le conseil d'administration de la Société. ("board")

« consommation » Compte tenu du rajustement pour les aléas climatiques, s'entend de la consommation :

a) d'énergie électrique, laquelle est mesurée et vendue à un client au Manitoba;

b) de gaz naturel, lequel :

(i) d'une part, est mesuré et vendu à un client au Manitoba,

(ii) d'autre part, n'est pas utilisé comme matière première ni comme ingrédient dans la fabrication d'un produit. ("consumption")

« date de mise en œuvre » Date fixée par règlement à laquelle la Société doit mettre en œuvre son premier plan d'efficacité énergétique. ("commencement date")

« demande en puissance électrique » La puissance électrique dont a besoin à un moment précis un utilisateur au Manitoba. ("demand for electrical power")

« économies nettes » À l'égard d'une variation de la consommation d'énergie électrique ou de gaz naturel au Manitoba, s'entend des économies réalisées après qu'il a été tenu compte des autres ajustements dans la consommation attribuables à cette variation ou influencés par celle-ci. ("net savings")

« exercice » Période débutant le 1er avril d'une année et se terminant le 31 mars de l'année suivante. ("fiscal year")

« Hydro-Manitoba » S'entend également de la filiale Centra Gas Manitoba Inc. et de toute société qui lui succède. ("Manitoba Hydro")

"Efficiency Manitoba" means Efficiency Manitoba Inc. established by section 3. (« Société »)

"efficiency plan" means a plan required under section 9. (« plan d'efficacité énergétique »)

"fiscal year" means the period beginning on April 1 of one year and ending on March 31 of the following year. (« exercice »)

"government agency" means a government agency as defined in *The Financial Administration Act*. (« organisme gouvernemental »)

"Manitoba Hydro" includes Manitoba Hydro's subsidiary Centra Gas Manitoba Inc. and any successor company to Centra Gas Manitoba Inc. (« Hydro-Manitoba »)

"minister" means the minister appointed by the Lieutenant Governor in Council to administer this Act. (« ministre »)

"net savings" means, in respect of a change in the consumption of electrical energy or natural gas in Manitoba, the savings that occur after taking into account any other adjustments in consumption that are attributable to, or influenced by, the change. (« économies nettes »)

"personal information" means personal information as defined in *The Freedom of Information and Protection of Privacy Act*. (« renseignements personnels »)

"PUB" means The Public Utilities Board continued under *The Public Utilities Board Act*. (« Régie »)

"regulation" means a regulation made under this Act. (« règlement »)

"savings target" means a savings target

(a) established under section 7; or

(b) prescribed by the regulations. (« objectif d'économies »)

« initiative d'effacement de consommation » Mesure ou action prise, ou programme, service ou tarif conçu pour réduire la consommation d'énergie électrique ou de gaz naturel, y compris toute réduction de la demande en puissance électrique qui en résulte, mais à l'exclusion de ce qui suit :

a) une mesure, une action, un programme, un service ou un tarif qui facilite ou entraîne le remplacement de l'utilisation d'un type de carburant par un autre, si ce remplacement augmente les émissions de gaz à effet de serre au Manitoba;

b) une mesure, une action, un programme, un service ou un tarif désigné par règlement. ("demand-side management initiative")

« ministre » Le ministre chargé par le lieutenant-gouverneur en conseil de l'application de la présente loi. ("minister")

« objectif d'économies » Objectif d'économies qui est :

a) soit fixé en vertu de l'article 7;

b) soit prévu par règlement. ("savings target")

« organisme gouvernemental » S'entend au sens de la *Loi sur la gestion des finances publiques*. ("government agency")

« plan d'efficacité énergétique » Plan exigé en vertu de l'article 9. ("efficiency plan")

« rajustement pour les aléas climatiques » Rajustement visant à supprimer les effets des déviations par rapport aux conditions météorologiques moyennes. ("weather-adjusted")

« Régie » La Régie des services publics prorogée par la *Loi sur la Régie des services publics*. ("PUB")

« règlement » Règlement pris en vertu de la présente loi. ("regulation")

"weather-adjusted" means adjusted to remove the effect of deviations from average weather patterns. (« rajustement pour les aléas climatiques »)

« renseignements personnels » S'entend au sens de la *Loi sur l'accès à l'information et la protection de la vie privée*. ("personal information")

« Société » La Société pour l'efficacité énergétique au Manitoba constituée en vertu de l'article 3. ("Efficiency Manitoba")

PART 2

MANDATE AND POWERS

Efficiency Manitoba established
3(1) Efficiency Manitoba Inc. is hereby established as a corporation without share capital, consisting of the directors appointed under this Act.

Corporations Act does not apply
3(2) Except as otherwise provided in the regulations, *The Corporations Act* does not apply to Efficiency Manitoba.

Crown agent
3(3) Efficiency Manitoba is an agent of the Crown.

Mandate
4(1) The mandate of Efficiency Manitoba is to

(a) implement and support demand-side management initiatives to meet the savings targets and achieve any resulting reductions in greenhouse gas emissions in Manitoba;

(b) 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;

(c) 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;

(d) if any of the following are prescribed as being subject to demand-side management under this Act, carry out the prescribed duties in respect of them:

(i) demand for electrical power in Manitoba,

PARTIE 2

MANDAT ET POUVOIRS

Constitution de la Société
3(1) Est constituée la Société pour l'efficacité énergétique au Manitoba, personne morale sans capital actions composée des administrateurs nommés sous le régime de la présente loi.

Inapplication de la *Loi sur les corporations*
3(2) Sauf disposition contraire des règlements, la *Loi sur les corporations* ne s'applique pas à la Société.

Mandataire
3(3) La Société est mandataire de la Couronne.

Mandat
4(1) La Société a pour mandat :

a) de mettre en œuvre et de soutenir des initiatives d'effacement de consommation pour atteindre les objectifs d'économies fixés et obtenir en conséquence au Manitoba des réductions des gaz à effet de serre;

b) d'obtenir des réductions additionnelles de la consommation d'énergie électrique ou de gaz naturel, y compris celles découlant des réductions de la demande en puissance électrique, si elles peuvent être obtenues de façon rentable;

c) d'atténuer les conséquences des augmentations de tarifs et de retarder le moment où Hydro-Manitoba devra, pour répondre aux besoins des Manitobains, engager des dépenses en immobilisations dans de nouveaux projets importants de production et de transmission;

d) s'il est prévu par règlement que les éléments indiqués ci-dessous sont soumis à l'effacement de consommation sous le régime de la présente loi, de s'acquitter des fonctions s'y rapportant :

(i) la demande en puissance électrique au Manitoba,

(ii) potable water consumed in Manitoba,

(iii) fossil fuels consumed in the transportation sector in Manitoba; and

(e) promote and encourage the involvement of the private sector and other non-governmental entities in the delivery of its demand-side management initiatives.

Related activities

4(2) In carrying out its mandate, Efficiency Manitoba may

(a) undertake educational initiatives and encourage innovations in areas related to its mandate; and

(b) provide advice to government, Manitoba Hydro and others on matters related to

(i) the appropriateness of the savings targets and the ways of integrating net savings attributable to demand-side management initiatives, both current and forecasted, into the electricity planning process, and

(ii) the benefits and options related to achieving reductions that are in addition to the savings targets.

Considerations in fulfilling mandate

4(3) In fulfilling its mandate, Efficiency Manitoba may

(a) specifically target, where appropriate, particular locations or areas of Manitoba or particular fuel choices;

(b) encourage the use of particular types of renewable energy sources; and

(c) aim to provide initiatives that are accessible to all Manitobans.

(ii) la consommation d'eau potable au Manitoba,

(iii) la consommation de combustibles fossiles dans le secteur des transports au Manitoba;

e) de promouvoir et d'encourager la participation d'entités non gouvernementales, notamment celles du secteur privé, à la mise en œuvre de ses initiatives d'effacement de consommation.

Activités connexes

4(2) Dans l'exécution de son mandat, la Société peut :

a) lancer des projets de sensibilisation du public et encourager les innovations dans les secteurs liés à son mandat;

b) conseiller notamment le gouvernement et Hydro-Manitoba sur les questions liées :

(i) à la pertinence des objectifs d'économies et aux façons d'intégrer les économies nettes attribuables aux initiatives d'effacement de consommation, tant réelles que prévues, dans le processus de planification de la gestion de l'électricité,

(ii) aux avantages et aux possibilités liés à l'obtention de réductions supérieures aux objectifs d'économies fixés.

Considérations dans l'exécution du mandat

4(3) Dans l'exécution de son mandat, la Société peut :

a) cibler particulièrement, lorsqu'il y a lieu, des endroits ou des secteurs précis du Manitoba ou des carburants précis;

b) encourager l'utilisation de types de sources d'énergies renouvelables précises;

c) viser à mettre sur pied des initiatives accessibles à tous les Manitobains.

Participation of public entities
5 The government, government agencies and other public bodies are eligible to participate in the demand-side management initiatives implemented or supported by Efficiency Manitoba, in accordance with the terms and conditions Efficiency Manitoba establishes for participating in those initiatives.

Powers of Efficiency Manitoba
6(1) Subject to this Act, for the purpose of carrying out its mandate, Efficiency Manitoba has the capacity and powers of a natural person and any additional powers prescribed by regulation.

General powers
6(2) Subject to any restrictions specified in the regulations, Efficiency Manitoba may

(a) acquire and hold any interest in real or personal property, and sell, mortgage, lease or otherwise deal with or dispose of any interest in real or personal property;

(b) receive, expend, loan and invest money;

(c) borrow money and give security for the repayment of money borrowed; and

(d) exercise any other powers that are necessary to carry out its mandate.

Power re additional undertakings
6(3) In addition to the other activities authorized under this Act, Efficiency Manitoba may

(a) administer or undertake demand-side management initiatives on behalf of the government, other levels of government, government agencies and other persons and organizations, subject to any terms and conditions that may be prescribed;

Participation des entités publiques
5 Le gouvernement, les organismes gouvernementaux et d'autres organismes publics peuvent participer aux initiatives d'effacement de consommation mises en œuvre ou soutenues par Hydro-Manitoba, en conformité avec les modalités de participation que fixe la Société.

Pouvoirs de la Société
6(1) Sous réserve des autres dispositions de la présente loi, pour l'exécution de son mandat, la Société a la capacité et les pouvoirs d'une personne physique ainsi que les pouvoirs supplémentaires qui lui sont confiés par règlement.

Pouvoirs généraux
6(2) Sous réserve des restrictions réglementaires, la Société peut :

a) acquérir et détenir des intérêts dans des biens réels ou personnels, les aliéner — notamment par vente, hypothèque ou location — et effectuer toute autre opération à leur égard;

b) recevoir, dépenser, prêter et investir de l'argent;

c) emprunter de l'argent et en garantir le remboursement;

d) exercer les autres pouvoirs nécessaires pour l'exécution de son mandat.

Pouvoir d'entreprendre des activités supplémentaires
6(3) En plus d'exercer les autres activités autorisées en vertu de la présente loi, la Société peut :

a) administrer ou lancer des initiatives d'effacement de consommation au nom du gouvernement, d'autres ordres de gouvernement, d'organismes gouvernementaux ou d'autres personnes ou organismes, sous réserve des modalités qui peuvent être fixées par règlement;

(b) undertake prescribed activities related to efficiency, conservation or the reduction of greenhouse gas emissions in Manitoba; and

(c) if authorized by the regulations, provide services outside Manitoba.

b) entreprendre des activités prévues par règlement et liées à l'efficacité, à la conservation et à la réduction d'émissions de gaz à effet de serre au Manitoba;

c) si les règlements le permettent, fournir des services à l'extérieur du Manitoba.

PART 3

SAVINGS TARGETS AND EFFICIENCY PLANS

SAVINGS TARGETS

Initial savings targets

7(1) Subject to the regulations, the annual savings targets that Efficiency Manitoba is responsible for meeting in the 15-year period following the commencement date are as follows:

Electrical Energy

In the initial year following the commencement date, net savings that are at least equal to 1.5% of the consumption of electrical energy in the preceding year.

In each of the following years, incremental net savings that are at least equal to 1.5% of the consumption of electrical energy in the immediately preceding year.

Natural Gas

In the initial year following the commencement date, net savings that are at least equal to 0.75% of the consumption of natural gas in the preceding year.

In each of the following years, incremental net savings that are at least equal to 0.75% of the consumption of natural gas in the immediately preceding year.

PARTIE 3

OBJECTIFS D'ÉCONOMIES ET PLANS D'EFFICACITÉ ÉNERGÉTIQUE

OBJECTIFS D'ÉCONOMIES

Objectifs d'économies initiales

7(1) Sous réserve des règlements, les objectifs d'économies annuelles que la Société est chargée d'atteindre pour la période de 15 ans à compter de la date de mise en œuvre sont les suivants :

Énergie électrique

Dans l'année initiale suivant la date de mise en œuvre, des économies nettes équivalant à au moins 1,5 % de la consommation d'énergie électrique au cours de l'année précédente.

Pour chacune des années subséquentes, des économies nettes supplémentaires équivalant à au moins 1,5 % de la consommation d'énergie électrique au cours de l'année précédente.

Gaz naturel

Dans l'année initiale suivant la date de mise en œuvre, des économies nettes équivalant à au moins 0,75 % de la consommation de gaz naturel au cours de l'année précédente.

Pour chacune des années subséquentes, des économies nettes supplémentaires équivalant à au moins 0,75 % de la consommation de gaz naturel au cours de l'année précédente.

Targets are cumulative
7(2) Shortfalls or surpluses in annual net savings carry forward during the 15-year period under subsection (1) such that at the end of the period Efficiency Manitoba must demonstrate that the cumulative total of the annual percentage savings in the consumption of

(a) electrical energy is 22.5%; and

(b) natural gas is 11.25%.

Calculating net savings
7(3) Net savings for the consumption of electrical energy or natural gas are to be determined in accordance with the regulations.

Savings targets after first 15 years
8 For each 15-year period after the initial 15-year period referred to in subsection 7(1), the Lieutenant Governor in Council must, by regulation, establish annual and cumulative savings targets in respect of the consumption of electrical energy and natural gas.

EFFICIENCY PLANS

Efficiency plans
9 For the three-year period following the commencement date, and for each three-year period after that, Efficiency Manitoba must prepare an efficiency plan that includes the following information:

(a) a description of the demand-side management initiatives it proposes to meet the savings targets that apply to the period;

(b) a description of the educational initiatives it proposes to undertake and the support it proposes to provide for encouraging innovations in areas related to its mandate;

Caractère cumulatif des objectifs d'économies
7(2) Les déficits ou les surplus au chapitre des économies nettes annuelles sont reportés sur la période de 15 ans visée au paragraphe (1) de sorte que la Société démontre à la fin de cette période qu'elle a enregistré cumulativement les taux d'économie annuelle suivants :

a) 22,5 % pour l'énergie électrique;

b) 11,25 % pour le gaz naturel.

Calcul des économies nettes
7(3) Les économies nettes pour la consommation d'énergie électrique ou de gaz naturel sont fixées en conformité avec les règlements.

Objectifs d'économies après les 15 premières années
8 Pour chaque période de 15 ans suivant la période initiale visée au paragraphe 7(1), le lieutenant-gouverneur en conseil fixe, par règlement, les objectifs d'économies annuelles et cumulatives en matière de consommation d'énergie électrique et de gaz naturel.

PLANS D'EFFICACITÉ ÉNERGÉTIQUE

Plans d'efficacité énergétique
9 Pour la période de trois ans suivant la date de mise en œuvre et pour chaque période de trois ans suivante, la Société établit un plan d'efficacité énergétique qui contient les renseignements suivants :

a) une mention des initiatives d'effacement de consommation qu'elle propose de mettre en œuvre pour atteindre les objectifs d'économies applicables à cette période;

b) une mention des initiatives de sensibilisation du public qu'elle propose de mettre en œuvre et du soutien qu'elle propose d'accorder pour stimuler les innovations dans des secteurs liés à son mandat;

(c) a description of any initiatives proposed in addition to those proposed to meet the savings targets;

(d) if the cumulative net savings secured to date have fallen short of the sum of the applicable annual savings targets, a description of the initiatives planned to address the shortfall;

(e) an analysis of the reductions in greenhouse gas emissions in Manitoba expected to result from the initiatives proposed under clauses (a) to (d);

(f) an analysis of the amount and cost-effectiveness of the net savings to be achieved by

(i) each of the initiatives proposed under clauses (a) to (d), and

(ii) the plan as a whole;

(g) an assessment of the benefits to be attained if the initiatives proposed under clauses (a) to (d) are implemented during the three-year period, including the benefits to be experienced by

(i) those who participate in any of the proposed initiatives,

(ii) Manitoba Hydro, and

(iii) Manitobans generally, including any environmental benefits, economic development opportunities and enhancements to energy security;

(h) a description of the input that Efficiency Manitoba received from stakeholders — including the stakeholder committee established under section 27 — and the public in preparing the plan, and the process established for receiving the input;

(i) a description of how the initiatives proposed under clauses (a) to (d) will assist Efficiency Manitoba in positioning itself to secure the net savings that are reasonably anticipated to be required over the next 15 years;

c) une mention des initiatives qui devraient s'ajouter à celles qui sont proposées pour que soient atteints les objectifs d'économies;

d) si les économies nettes cumulatives annuelles réalisées à cette date sont inférieures à la somme des objectifs d'économies annuelles applicables, une mention des initiatives prévues pour compenser le déficit;

e) une analyse des réductions de gaz à effet de serre au Manitoba qui devraient résulter des initiatives proposées en vertu des alinéas a) à d);

f) une analyse des économies nettes devant être réalisées grâce aux initiatives visées aux alinéas a) à d) et grâce au plan dans son ensemble ainsi qu'une analyse coût-efficacité de ces économies;

g) une évaluation des bénéfices à retirer si les initiatives proposées en vertu des alinéas a) à d) sont mises en œuvre au cours de la période de trois ans, notamment les bénéfices pour :

(i) ceux qui participent aux initiatives proposées,

(ii) Hydro-Manitoba,

(iii) les Manitobains en général, notamment les bénéfices environnementaux, les possibilités de développement économique et les améliorations de la sécurité énergétique;

h) une indication des observations formulées par des intéressés à l'intention de la Société, y compris par le comité des intéressés constitué en vertu de l'article 27, et par le public dans le cadre de l'élaboration du plan et une mention du processus mis en place pour que soient recueillies les observations;

i) une mention de la façon dont les initiatives proposées aux alinéas a) à d) aideront la Société à être en mesure de réaliser les économies nettes qui sont raisonnablement prévues être nécessaires au cours des 15 prochaines années;

(j) a description of how the plan addresses the prescribed factors the PUB must consider under subsection 11(4);

(k) for any ongoing or proposed energy efficiency or energy conservation loan or financing program, including a program that is delivered in conjunction with Manitoba Hydro, a description of

(i) the interest rate charged or to be charged under the program, or the manner in which the interest rate is or will be determined,

(ii) the eligibility and assessment criteria to be used to determine participation in the program, and

(iii) the amounts reasonably anticipated to be loaned or financed by Manitoba Hydro under the program, including any amount to be financed by Manitoba Hydro;

(l) a budget that sets out, for the three-year period,

(i) the projected costs of designing and implementing each of the initiatives proposed under clauses (a) to (d), and when those costs are anticipated to be incurred,

(ii) the projected administrative and overhead costs — including evaluation costs — to be incurred in delivering the initiatives proposed under clauses (a) to (d) and in carrying out its related activities under subsection 4(2),

(iii) the amount reasonably required as a contingency fund to enable Efficiency Manitoba to take advantage of emerging opportunities that are not otherwise addressed in the plan,

(iv) the proposed sources of any required funds and the amount from each source, and

(v) a schedule of when the funds will be required over the course of the three-year period;

j) une mention de la manière dont le plan tient compte des facteurs prévus par règlement que la Régie doit prendre en considération en vertu du paragraphe 11(4);

k) à l'égard d'un programme de prêt ou de financement en matière d'efficacité énergétique ou d'économie d'énergie, qu'il soit en vigueur ou proposé, notamment un programme offert conjointement avec Hydro-Manitoba :

(i) le taux d'intérêt exigé ou qui doit l'être en vertu du programme ou la façon dont le taux d'intérêt est ou doit être fixé,

(ii) les critères d'admissibilité et d'évaluation qui doivent être utilisés pour la participation au programme,

(iii) les montants d'argent prévus qui seront affectés à des prêts ou à du financement au titre du programme, y compris toute somme dont le financement est assuré par Hydro-Manitoba;

l) un budget établissant, pour la période de trois ans :

(i) les coûts prévus d'élaboration et de mise en œuvre de chacune des initiatives proposées en vertu des alinéas a) à d) et le moment où il est prévu que ces coûts seront engagés,

(ii) les frais administratifs ou les coûts indirects prévus, y compris les coûts d'évaluation, qui devront être engagés pour que soient mises en œuvre les initiatives proposées en vertu des alinéas a) à d) et menées à bien les activités connexes visées au paragraphe 4(2),

(iii) les montants d'argent raisonnablement nécessaires à titre de fonds de prévoyance pour permettre à la Société de tirer avantage de possibilités imminentes qui ne sont pas autrement prévues dans le plan,

(iv) les sources prévues des fonds nécessaires et le montant d'argent provenant de chaque source,

(v) un échéancier du moment où les fonds seront nécessaires au cours de la période de trois ans;

(m) a description of the manner in which the outcomes achieved under the plan are to be assessed, including the proposed performance measures to be used.

m) une mention de la façon dont les résultats obtenus en vertu du plan doivent être évalués, y compris les indicatifs de rendement qu'il faut utiliser.

Plans to be submitted to PUB

10 Subject to the regulations, Efficiency Manitoba must submit each of its efficiency plans to the PUB at the time and in the manner specified by the PUB.

Plans soumis à la Régie

10 Sous réserve des règlements, la Société soumet chacun de ses plans d'efficacité énergétique à la Régie au moment et de la façon que fixe celle-ci.

Review and recommendation by PUB

11(1) The PUB must review an efficiency plan and make a report, with recommendations, to the minister as to whether the plan should be

(a) approved;

(b) approved with suggested amendments; or

(c) rejected.

Examen et recommandation de la Régie

11(1) La Régie examine tout plan d'efficacité énergétique et présente un rapport au ministre comportant ses recommandations quant à l'approbation, à l'approbation sous réserve de modifications ou au rejet du plan.

Manitoba Hydro entitled to be heard

11(2) Manitoba Hydro is entitled to be heard or make submissions, through counsel or otherwise, on the review of an efficiency plan.

Droit d'Hydro-Manitoba de se faire entendre

11(2) Hydro-Manitoba a le droit de se faire entendre ou de présenter des observations, notamment par l'entremise d'un avocat, dans le cadre de l'examen par la Régie d'un plan d'efficacité énergétique.

Timing of PUB review

11(3) The PUB must make its report and recommendations to the minister within the time specified by the minister.

Échéancier pour l'examen

11(3) La Régie présente son rapport et ses recommandations au ministre dans le délai qu'il fixe.

Mandatory considerations

11(4) In reviewing an efficiency plan and making recommendations to the minister, the PUB must consider

(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;

Considérations obligatoires

11(4) Lorsqu'elle examine un plan d'efficacité énergétique et fait des recommandations au ministre, la Régie tient compte de ce qui suit :

a) les économies nettes requises pour que soient atteints les objectifs d'économie et les plans pour remédier à tout déficit existant;

b) les avantages et le rapport coût-efficacité des initiatives proposées dans le plan;

(c) whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans; and

(d) any additional factors prescribed by the regulations.

Optional recommendations
11(5) The PUB may recommend to the minister

(a) an increase in a savings target if it is reasonably satisfied that it is in the public interest for Efficiency Manitoba to achieve additional net savings; or

(b) a decrease in a savings target if it is reasonably satisfied that the existing savings target is not in the public interest.

Ministerial approval
12(1) After receiving an efficiency plan and the PUB's recommendations respecting the plan, the minister must

(a) approve the plan as submitted; or

(b) refer the plan back to Efficiency Manitoba for further action, with any directions the minister considers appropriate.

Actions if plan referred back to Efficiency Manitoba
12(2) A plan that is referred back to Efficiency Manitoba under this section must be resubmitted as directed by the minister.

Directions to be made public
12(3) Efficiency Manitoba must publish on its website or through other public means, any direction it receives under this section.

Approved plan must be implemented
12(4) Efficiency Manitoba must implement an efficiency plan as approved by the minister.

c) la question de savoir si la Société atteint de façon raisonnable l'objectif de mettre en œuvre des initiatives accessibles à tous les Manitobains;

d) les facteurs supplémentaires prévus par règlement.

Recommandations optionnelles
11(5) La Régie peut recommander au ministre :

a) soit une augmentation d'un objectif d'économies, si elle est raisonnablement convaincue qu'il est dans l'intérêt public que la Société réalise des économies nettes supplémentaires;

b) soit une réduction d'un objectif d'économies, si elle est raisonnablement convaincue que l'objectif d'économies actuel ne sert pas l'intérêt public.

Approbation du ministre
12(1) Après avoir reçu un plan d'efficacité énergétique et les recommandations de la Régie concernant le plan, le ministre :

a) soit approuve le plan présenté;

b) soit le renvoie à la Société, accompagné des directives qu'il juge indiquées, pour que d'autres mesures soient prises.

Mesures exigées en cas de renvoi du plan
12(2) Un plan qui est renvoyé en vertu du présent article est soumis de nouveau par la Société comme l'exige le ministre.

Directives publiques
12(3) La Société diffuse publiquement, notamment sur son site Web, toute directive reçue en vertu du présent article.

Mise en œuvre du plan approuvé
12(4) La Société met en œuvre le plan d'efficacité énergétique approuvé par le ministre.

Adjustments under approved plan
12(5) For certainty, in implementing an approved efficiency plan, Efficiency Manitoba may adjust the activities to be undertaken during the three-year period of the efficiency plan, provided the adjustments

(a) are reasonably required to maximize the amount or cost-effectiveness of the net savings to be achieved under the approved plan; and

(b) do not result in Efficiency Manitoba's total costs exceeding the total costs specified in the approved efficiency plan.

Ajustements à un plan approuvé
12(5) Il est entendu que, dans le cadre de la mise en œuvre d'un plan d'efficacité énergétique approuvé, la Société peut ajuster les mesures à prendre au cours de la période de trois ans du plan pourvu que les ajustements :

a) d'une part, soient raisonnablement nécessaires pour que soit maximisé le montant ou le rapport coût-efficacité des économies nettes devant être réalisées dans le cadre du plan approuvé;

b) d'autre part, n'aient pas pour effet de porter les frais totaux engagés par la Société à une somme plus élevée que celle précisée dans le plan approuvé.

Efficiency Manitoba may subcontract
13(1) Efficiency Manitoba may subcontract the delivery of any portion of an approved efficiency plan, including subcontracting to Manitoba Hydro.

Sous-traitance
13(1) La Société peut sous-traiter la mise en œuvre de toute portion d'un plan d'efficacité énergétique approuvé, notamment en sous-traitant à Hydro-Manitoba.

No relief from responsibility
13(2) A subcontract entered into under subsection (1) does not relieve Efficiency Manitoba of any of its responsibilities under an approved efficiency plan or this Act.

Responsabilité maintenue
13(2) Un contrat de sous-traitance conclu en vertu du paragraphe (1) ne libère la Société d'aucune de ses responsabilités au titre d'un plan d'efficacité énergétique approuvé ou de la présente loi.

ON-METER EFFICIENCY PROGRAMS

PROGRAMMES D'AIDE À L'EFFICACITÉ ÉNERGÉTIQUE

Definitions
14(1) The following definitions apply in this section.

"account for power", in relation to a building, part of a building or a structure related to a building, means the account established by Manitoba Hydro for the customer responsible for paying for the supply of electrical energy, or natural gas, or both, to the building, part of the building or the related structure. (« compte d'énergie »)

Définitions
14(1) Les définitions qui suivent s'appliquent au présent article.

« compte d'énergie » À l'égard d'un bâtiment, d'une partie d'un bâtiment ou d'un ouvrage connexe, s'entend du compte établi par Hydro-Manitoba pour le client qui doit payer l'alimentation en énergie électrique, en gaz naturel, ou les deux, de ce bâtiment, de cette partie de bâtiment ou de cet ouvrage. ("account for power")

"monthly charge" means the monthly charge levied on an account for power under clause (2)(b). (« frais mensuels »)

« frais mensuels » Les frais mensuels portés au débit d'un compte d'énergie en vertu de l'alinéa (2)b). ("monthly charge")

On-meter efficiency programs

14(2) Efficiency Manitoba may, as part of the energy efficiency or energy conservation loan or financing programs that are included in an approved efficiency plan, establish and administer on-meter efficiency programs under which

(a) a person who meets the program criteria is eligible to enter into an agreement with Manitoba Hydro under which Manitoba Hydro agrees to pay on the person's behalf some or all of the costs incurred by the person in relation to changes made to improve the efficiency of a building, part of a building or a structure related to a building; and

(b) Manitoba Hydro recovers the costs that are to be repaid to it by or on behalf of the person by levying a monthly charge on the account for power.

Programmes d'aide à l'efficacité énergétique

14(2) La Société peut, dans le cadre des programmes de prêt ou de financement en matière d'efficacité énergétique ou d'économie d'énergie qui sont compris dans un plan d'efficacité énergétique approuvé, mettre sur pied et administrer des programmes d'aide à l'efficacité énergétique en vertu desquels :

a) une personne qui répond aux critères du programme peut conclure un accord avec Hydro-Manitoba en vertu duquel cette dernière consent à payer, au nom de la personne, une partie ou la totalité des frais engagés par la personne relativement à des modifications apportées pour que soit améliorée l'efficacité d'un bâtiment, d'une partie d'un bâtiment ou d'un ouvrage connexe;

b) Hydro-Manitoba recouvre les sommes qui doivent lui être remboursées par cette personne ou en son nom en portant des frais mensuels au débit du compte d'énergie.

Water efficiency and conservation measures

14(3) Under clause (2)(a), changes that improve efficiency and conservation in the consumption of water within a building, part of a building, or a structure related to a building are also considered to improve energy efficiency, but only if the changes are made in conjunction with other changes made under the program to improve energy efficiency.

Utilisation de l'eau — accroissement de l'efficacité et conservation

14(3) En vertu de l'alinéa (2)a), les modifications qui accroissent l'efficacité et la conservation relativement à l'utilisation de l'eau dans un bâtiment, une partie d'un bâtiment ou un ouvrage connexe sont aussi réputées accroître l'efficacité énergétique, mais seulement si les modifications sont effectuées conjointement avec d'autres modifications apportées dans le cadre du programme d'amélioration de l'efficacité énergétique.

Program criteria, terms and conditions

14(4) Subject to the regulations,

(a) Efficiency Manitoba may establish the criteria and terms and conditions of an on-meter efficiency program; and

(b) Manitoba Hydro may establish terms and conditions respecting loan agreements it enters into with a person under such a program.

Critères et modalités des programmes

14(4) Sous réserve des règlements :

a) la Société peut fixer les critères et les modalités d'un programme d'aide à l'efficacité énergétique;

b) Hydro-Manitoba peut fixer les modalités applicables aux accords de prêt qu'elle conclut avec une personne en vertu d'un tel programme.

Monthly charge continues for term of agreement
14(5) Under an on-meter efficiency program, Manitoba Hydro may continue to levy the monthly charge for the term set out in the agreement on any new account for power that replaces an existing account for power for that building, part of the building, or structure related to the building.

Who pays monthly charge
14(6) The person responsible for paying an account for power for any period must pay each monthly charge levied for that period on the account for power, even if that person is not a party to the agreement under which the monthly charge was first levied.

Collection of monthly charge
14(7) Manitoba Hydro may collect a monthly charge in the same manner, and with the same priority, as it collects charges for power supplied by it under *The Manitoba Hydro Act*, and for that purpose, the provisions of *The Manitoba Hydro Act* that apply to the collection of accounts apply with necessary changes to the collection of a monthly charge.

Monthly charge not subject to PUB approval
14(8) For the purposes of this and any other Act, a monthly charge

(a) is not a price charged by Manitoba Hydro with respect to the provision of power; and

(b) is not a rate, toll or charge subject to approval by the PUB under *The Public Utilities Board Act*.

Notice of agreement to be registered in L.T.O.
15 After entering into an agreement referred to in clause 14(2)(a) in respect of a building, part of a building or a structure related to a building, Manitoba Hydro must, if there is a title, register a notice of the agreement against the applicable title in the appropriate land titles office. The notice must be in the form approved by the Registrar-General.

Frais mensuels exigés pendant la durée de l'accord
14(5) En vertu d'un programme d'aide à l'efficacité énergétique, Hydro-Manitoba peut continuer à percevoir les frais mensuels pour la durée prévue dans l'accord en les portant au débit de tout nouveau compte d'énergie qui remplace un compte existant pour le bâtiment, la partie du bâtiment ou l'ouvrage connexe.

Personne responsable des frais mensuels
14(6) La personne responsable du paiement d'un compte d'énergie pour une période verse les frais mensuels portés au débit de ce compte, et ce, même si elle n'est pas partie à l'accord en vertu duquel les frais mensuels étaient exigés au départ.

Perception des frais mensuels
14(7) Hydro-Manitoba peut percevoir les frais mensuels au même titre que les frais d'énergie qu'elle perçoit en vertu de la *Loi sur l'Hydro-Manitoba* à l'égard de la fourniture d'énergie. À cette fin, les dispositions de cette loi qui s'appliquent à la perception des sommes dues s'appliquent, avec les adaptations nécessaires, à la perception des frais mensuels.

Frais mensuels non soumis à l'approbation de la Régie
14(8) Pour l'application de la présente loi et de toute autre loi, les frais mensuels ne sont pas assimilés :

a) au prix fixé par Hydro-Manitoba pour la fourniture d'énergie;

b) aux taux, tarifs ou droits soumis à l'approbation de la Régie en vertu de la *Loi sur la Régie des services publics*.

Enregistrement d'un avis concernant l'accord au bureau des titres fonciers
15 Après avoir conclu l'accord visé à l'alinéa 14(2)a) à l'égard du bâtiment, de la partie du bâtiment ou de l'ouvrage connexe, Hydro-Manitoba enregistre, le cas échéant, un avis concernant l'accord à l'égard du titre de propriété approprié au bureau des titres fonciers compétent. L'avis revêt la forme qu'approuve le registraire général.

ASSESSMENT OF RESULTS

Independent assessment
16(1) Efficiency Manitoba must appoint an independent assessor to assess the following and prepare a report on the assessment:

(a) the results obtained by Efficiency Manitoba under an approved efficiency plan;

(b) the cost-effectiveness of obtaining those results;

(c) any other matter prescribed by regulation.

Access to information
16(2) Efficiency Manitoba and Manitoba Hydro must provide the assessor with the information, records and other assistance that the assessor requires to complete an assessment under this section.

Report to be given to PUB and made public
16(3) Efficiency Manitoba must, within the prescribed time,

(a) submit the assessment report to the PUB; and

(b) publish the report on its website, or through other public means.

Fees and expenses
16(4) The costs of an assessment are to be paid by Efficiency Manitoba.

PUB recommendations
16(5) If the PUB finds that an assessment report discloses any significant discrepancy from the initiatives, budget or projected net savings set out in an approved efficiency plan, the PUB may

(a) review the findings with Efficiency Manitoba; and

(b) make any recommendations to the minister it considers appropriate.

ÉVALUATION DES RÉSULTATS

Évaluation indépendante
16(1) La Société nomme un évaluateur indépendant chargé d'examiner les questions suivantes et d'établir un rapport :

a) les résultats qu'elle a obtenus au titre d'un plan d'efficacité énergétique approuvé;

b) le rendement coût-efficacité se rattachant à l'obtention de ces résultats;

c) toute autre question prévue par règlement.

Accès aux renseignements
16(2) La Société et Hydro-Manitoba fournissent à l'évaluateur l'aide dont il a besoin pour terminer une évaluation en vertu du présent article et lui communiquent notamment les renseignements et dossiers pertinents.

Remise et diffusion du rapport
16(3) Dans le délai réglementaire, la Société :

a) soumet le rapport d'évaluation à la Régie;

b) le diffuse publiquement, notamment sur son site Web.

Droits et frais
16(4) La Société assume les frais d'évaluation.

Recommandations de la Régie
16(5) Si elle conclut qu'un rapport d'évaluation révèle des divergences importantes par rapport aux initiatives, au budget ou aux économies nettes prévus dans un plan d'efficacité énergétique approuvé, la Régie peut :

a) examiner les conclusions avec la Société;

b) formuler à l'intention du ministre les recommandations qu'elle estime indiquées.

Minister may issue directives
16(6) If the minister receives a recommendation from the PUB under this section and is satisfied that any significant discrepancies set out in the assessment report are within the control of Efficiency Manitoba,

(a) the minister may issue directives to Efficiency Manitoba respecting its management or operations, including the time frame to implement the directives; and

(b) Efficiency Manitoba must comply with the directives within the time frame set out in them.

Publication and scope of directives
16(7) For certainty, a directive issued by the minister may amend an approved efficiency plan and must be published by the minister on a website available to the public or through other public means.

Directives du ministre
16(6) S'il reçoit une recommandation de la Régie en vertu du présent article et qu'il est convaincu que les divergences importantes indiquées dans le rapport d'évaluation sont du ressort de la Société :

a) le ministre peut donner des directives à la Société concernant sa gestion ou ses activités, y compris le délai pour mettre en œuvre ces directives;

b) celle-ci doit se conformer aux directives dans le délai qu'elles prévoient.

Diffusion et portée des directives
16(7) Il est entendu qu'une directive du ministre peut modifier un plan d'efficacité énergétique approuvé et doit être diffusée publiquement par celui-ci, notamment sur un site Web.

PUB RESPONSIBILITIES

Application of Public Utilities Board Act
17(1) Part I of *The Public Utilities Board Act* applies, with necessary changes, as if the review of an efficiency plan or assessment report were the hearing of an application under that Act, except as otherwise specified by regulation under subsection (2).

Regulations
17(2) The minister may make any regulations the minister considers necessary or advisable respecting the carrying out of the PUB's responsibilities under this Act.

RESPONSABILITÉS DE LA RÉGIE

Application de la *Loi sur la Régie des services publics*
17(1) La partie I de la *Loi sur la Régie des services publics* s'applique, avec les adaptations nécessaires, au même titre que si l'examen d'un plan d'efficacité énergétique ou d'un rapport d'évaluation était une audition d'une demande en vertu de cette loi, sauf disposition contraire d'un règlement pris en vertu du paragraphe (2).

Règlements
17(2) Le ministre peut prendre les règlements qu'il estime nécessaires ou souhaitables relativement à l'exercice des attributions de la Régie sous le régime de la présente loi.

PART 4

ROLE OF MANITOBA HYDRO

Hydro to support Efficiency Manitoba's activities
18(1) For the purposes of *The Manitoba Hydro Act*, supporting the activities of Efficiency Manitoba as authorized under this Act is deemed to be within the purposes and objects of Manitoba Hydro.

Manitoba Hydro to provide funding
18(2) In recognition of the benefits received from Efficiency Manitoba, Manitoba Hydro must provide Efficiency Manitoba with all amounts necessary for it to implement an approved efficiency plan and to carry out its responsibilities under this Act, less any funds Efficiency Manitoba has available from other sources.

No cost responsibility for expanded mandate
18(3) For certainty, Manitoba Hydro is not responsible for costs related to Efficiency Manitoba's activities that are not undertaken in respect of an approved efficiency plan.

Funding is authorized
18(4) Subsection 43(3) of *The Manitoba Hydro Act* does not apply to or in respect of amounts which, under this Act, Manitoba Hydro is to provide to Efficiency Manitoba or make available in the affordable energy fund continued under section 37.

Conflict with Manitoba Hydro Act
18(5) The provisions of this Act prevail to the extent of any inconsistency or conflict with *The Manitoba Hydro Act*.

PARTIE 4

RÔLE D'HYDRO-MANITOBA

Soutien des activités de la Société par Hydro-Manitoba
18(1) Pour l'application de la *Loi sur l'Hydro-Manitoba*, le fait de soutenir les activités de la Société de la façon prévue par la présente loi est réputé faire partie de l'objet d'Hydro-Manitoba.

Financement par Hydro-Manitoba
18(2) En contrepartie des avantages reçus de la Société, Hydro-Manitoba doit lui fournir les sommes nécessaires à la mise en œuvre d'un plan d'efficacité énergétique approuvé et à l'exercice de ses attributions sous le régime de la présente loi, déduction faite des sommes qu'elle peut obtenir d'autres sources.

Coûts dans le cadre d'un mandat élargi
18(3) Il est entendu qu'Hydro-Manitoba n'est pas responsable des coûts liés aux activités de la Société qui ne sont pas entreprises dans le cadre d'un plan d'efficacité énergétique approuvé.

Financement autorisé
18(4) Le paragraphe 43(3) de la *Loi sur l'Hydro-Manitoba* ne s'applique pas aux sommes qu'Hydro-Manitoba doit, sous le régime de la présente loi, fournir à la Société ou porter au crédit du Fonds de limitation du prix de l'énergie maintenu en vertu de l'article 37.

Incompatibilité
18(5) Les dispositions de la présente loi l'emportent sur les dispositions incompatibles de la *Loi sur l'Hydro-Manitoba*.

Requirements re loan and financing programs

19(1) Manitoba Hydro must ensure that it meets any requirements prescribed by regulation respecting any energy efficiency or energy conservation loan or financing program that, as part of an approved efficiency plan, is to be delivered in conjunction with Efficiency Manitoba.

Exigences en matière de programmes de prêt et de financement

19(1) Hydro-Manitoba s'assure de respecter les exigences réglementaires relatives à un programme de prêt ou de financement en matière d'efficacité énergétique ou d'économie d'énergie qui, dans le cadre d'un plan d'efficacité énergétique approuvé, est offert conjointement avec la Société.

Billing and collection services

19(2) At the request of Efficiency Manitoba, Manitoba Hydro must provide all of the billing and collection services for Efficiency Manitoba that Efficiency Manitoba reasonably requires for the purpose of implementing or administering a demand-side management initiative under an approved efficiency plan.

Services de facturation et de recouvrement

19(2) À la demande de la Société, Hydro-Manitoba lui fournit l'ensemble des services de facturation et de perception dont elle a raisonnablement besoin pour mettre en œuvre ou administrer une initiative d'effacement de consommation au titre d'un plan d'efficacité énergétique approuvé.

Collection of billings

19(3) When Manitoba Hydro is given responsibility for billing and collecting amounts for Efficiency Manitoba under subsection (2), Manitoba Hydro may collect the amounts billed in the same manner, and with the same priority, as it collects charges for power supplied by it under *The Manitoba Hydro Act*, and for that purpose, the provisions of *The Manitoba Hydro Act* that apply to the collection of accounts apply with necessary changes to the collection of amounts billed in accordance with this section.

Perception des sommes exigées

19(3) Lorsqu'elle se voit confier la responsabilité d'exiger et de percevoir des sommes pour la Société en vertu du paragraphe (2), Hydro-Manitoba peut percevoir ces sommes au même titre que les frais d'énergie qu'elle perçoit en vertu de la *Loi sur l'Hydro-Manitoba* à l'égard de la fourniture d'énergie. À cette fin, les dispositions de cette loi qui s'appliquent à la perception des sommes dues s'appliquent, avec les adaptations nécessaires, à la perception des sommes exigées en conformité avec le présent article.

Material included with Hydro bills

19(4) As part of Efficiency Manitoba's educational initiatives, Manitoba Hydro must include with the billing or account information it sends to its customers any demand-side management related information or material that Efficiency Manitoba directs, provided the expenses related to doing so are included in an approved efficiency plan.

Documents joints aux factures d'hydro-électricité

19(4) Dans le cadre des initiatives de sensibilisation du public de la Société, Hydro-Manitoba joint à la facturation ou aux renseignements sur les comptes qu'elle envoie à ses clients les renseignements ou les documents liés à l'effacement de consommation que la Société lui demande de joindre, dans la mesure où les coûts pour le faire sont prévus dans un plan d'efficacité énergétique approuvé.

PART 5

GENERAL PROVISIONS

ORGANIZATIONAL MATTERS

Duty of board
20 The board is responsible for managing, or supervising the management of, the business and affairs of Efficiency Manitoba in accordance with its mandate.

Number of directors
21(1) The board is to consist of up to nine directors appointed by the Lieutenant Governor in Council.

Board expertise
21(2) In appointing board members, regard is to be had to the need to ensure that the board as a whole represents a sufficient range of expertise and experience for it to carry out its responsibilities effectively.

Term of office
21(3) A director is to be appointed for a term of no more than three years, and no director may serve more than ten consecutive years.

Terms to be staggered
21(4) When appointing a director and establishing the director's term of office, the Lieutenant Governor in Council is to have regard for the need to ensure that the terms of office of not more than half of the board members expire in any one year.

Appointment continues
21(5) A director continues to hold office until he or she is re-appointed, the appointment is revoked or a successor is appointed.

PARTIE 5

DISPOSITIONS GÉNÉRALES

QUESTIONS D'ORGANISATION

Fonctions du conseil
20 Le conseil gère l'entreprise et les affaires internes de la Société en conformité avec son mandat ou en surveille la gestion.

Nombre d'administrateurs
21(1) Le conseil se compose d'un maximum de neuf administrateurs nommés par le lieutenant-gouverneur en conseil.

Expertise du conseil
21(2) Lors de la nomination des membres du conseil, il faut veiller à ce qu'il soit composé de membres ayant l'expertise et l'expérience nécessaires pour exercer efficacement ses attributions.

Mandat
21(3) Les administrateurs sont nommés pour un mandat maximal de 3 ans et ils ne peuvent siéger pendant plus de 10 années consécutives.

Échelonnement des mandats
21(4) Lorsqu'il nomme un administrateur et qu'il établit la durée de son mandat, le lieutenant-gouverneur en conseil doit faire en sorte que les mandats des administrateurs soient échelonnés de manière que leur expiration au cours d'une même année touche au plus la moitié de ces derniers.

Maintien en poste
21(5) Les administrateurs occupent leur poste jusqu'à ce que leur mandat soit renouvelé, que leur nomination soit révoquée ou qu'un successeur leur soit nommé.

Chair and vice-chair
22(1) The chair and the vice-chair of the board are to be designated by the Lieutenant Governor in Council.

Function of vice-chair
22(2) The vice-chair has the authority of the chair when the chair is absent or unable to act, or when authorized by the chair.

Ineligibility for appointment
23 A director, officer or employee of Manitoba Hydro is not eligible to be appointed to the board, and no more than one employee of the government or a government agency may be appointed.

Remuneration of directors
24(1) Efficiency Manitoba must pay its directors the remuneration and expenses determined by the Lieutenant Governor in Council.

Public reporting
24(2) Efficiency Manitoba must establish and publish rules respecting

(a) expenses incurred by directors that are eligible for reimbursement by Efficiency Manitoba; and

(b) public reporting of remuneration paid to directors and expenses that are reimbursed by Efficiency Manitoba, including

(i) criteria for whose expenses are to be reported, and

(ii) the form, manner and timing of the reporting.

Minister may issue guidelines
24(3) The minister may issue guidelines respecting the rules to be established under this section, and the manner in which the information is to be published, and Efficiency Manitoba must follow those guidelines.

Président et vice-président
22(1) Le lieutenant-gouverneur en conseil désigne le président et le vice-président du conseil.

Fonctions du vice-président
22(2) Le vice-président assume la présidence en cas d'absence ou d'empêchement du président ou sur autorisation de ce dernier.

Personnes inhabiles à être nommées au conseil
23 Les administrateurs, les dirigeants ou les employés d'Hydro-Manitoba sont inhabiles à être nommés au conseil. Un seul employé du gouvernement ou d'un organisme gouvernemental peut y siéger.

Rémunération des administrateurs
24(1) La Société verse à ses administrateurs la rémunération et les indemnités que fixe le lieutenant-gouverneur en conseil.

Rapports publics
24(2) La Société adopte et publie des règles sur ce qui suit :

a) les dépenses engagées par les administrateurs qu'elle peut leur rembourser;

b) la présentation de rapports publics sur la rémunération versée aux administrateurs et les dépenses qu'elle leur rembourse, notamment :

(i) les critères permettant de déterminer quelles dépenses font l'objet de rapports,

(ii) la forme que revêtent les rapports, la façon de les présenter et le délai pour le faire.

Lignes directrices du ministre
24(3) Le ministre peut établir des lignes directrices concernant les règles qui doivent être adoptées en vertu du présent article et la façon dont les renseignements doivent être diffusés. La Société est tenue de se conformer à ces lignes directrices.

Quorum
25 A majority of the directors on the board, or any greater number determined by by-law, constitutes a quorum at any meeting of the directors.

By-laws
26(1) The board may make by-laws respecting the conduct and management of Efficiency Manitoba's business and affairs, including, without limitation,

(a) by-laws establishing a code of conduct policy for Efficiency Manitoba's directors, officers and employees; and

(b) by-laws providing for the indemnification of Efficiency Manitoba's directors and officers.

Policies for procurement and contracts for services
26(2) Efficiency Manitoba must establish policies and procedures for procurement and contracts for services that promote transparency, openness, fairness and value for money in purchasing.

STAKEHOLDER COMMITTEE

Stakeholder committee
27(1) The board must establish a stakeholder committee as an advisory body to Efficiency Manitoba.

Committee expertise
27(2) In appointing members to the stakeholder committee, the board must seek to appoint persons with expertise and experience in energy efficiency and an understanding of the functioning of the PUB's role in relation to energy efficiency.

Quorum
25 Aux réunions du conseil, le quorum est constitué par la majorité des administrateurs y siégeant ou par le nombre supérieur d'administrateurs fixé par règlement administratif.

Règlements administratifs
26(1) Le conseil peut adopter des règlements administratifs pour régir la conduite et la gestion de l'entreprise et des affaires internes de la Société, notamment :

a) des règlements administratifs établissant une politique sur un code de déontologie pour les administrateurs, les dirigeants et les employés de la Société;

b) des règlements administratifs sur l'indemnisation des administrateurs et des dirigeants de la Société.

Lignes directrices régissant l'approvisionnement et les contrats de service
26(2) La Société établit des lignes directrices régissant l'approvisionnement et les contrats de service et favorisant la transparence, l'ouverture, l'équité et l'optimisation des ressources au moment des achats.

COMITÉ DES INTÉRESSÉS

Comité des intéressés
27(1) Le conseil constitue un comité des intéressés à titre d'organe consultatif pour la Société.

Membres du comité — champs d'expertise
27(2) Lors de la nomination des membres du comité des intéressés, le conseil tient compte du bien-fondé de nommer des personnes qui possèdent une expertise et de l'expérience dans le secteur de l'efficacité énergétique et qui comprennent bien le rôle de la Régie en matière d'efficacité énergétique.

Role of the committee
27(3) The role of the stakeholder committee is to

(a) provide advice to Efficiency Manitoba about the development and implementation of efficiency plans;

(b) provide advice to Efficiency Manitoba on the selection of the assessor and terms of reference for the independent assessment required under section 16 and assist the board to review the assessment results; and

(c) perform other advisory responsibilities as determined by the board.

Administration
27(4) Efficiency Manitoba is responsible for the administration of the stakeholder committee and for any administrative costs.

Rôle du comité
27(3) Le comité des intéressés a pour rôle :

a) de conseiller la Société sur l'élaboration et la mise en œuvre de plans d'efficacité énergétique;

b) de conseiller la Société sur la sélection de l'évaluateur et le mandat en vue de l'évaluation indépendante visée à l'article 16 et d'apporter son aide au conseil en vue de l'examen des résultats de l'évaluation;

c) de s'acquitter de toute autre fonction consultative que fixe le conseil.

Administration
27(4) La Société est responsable de l'administration du comité des intéressés et des frais administratifs.

FINANCIAL AND BUSINESS MATTERS

Financial records and systems
28 Efficiency Manitoba must establish financial management and information systems that will enable it to prepare financial statements in accordance with generally accepted accounting principles that reflect the public interest.

Annual budget
29 For each fiscal year, the board must adopt a budget for the year that includes

(a) all revenue that Efficiency Manitoba anticipates receiving for the year and any accumulated surplus from previous years; and

(b) all operating expenses that it anticipates incurring for the year and any accumulated deficit from the previous years.

QUESTIONS FINANCIÈRES ET BUDGET

Registres et systèmes financiers
28 La Société met sur pied des systèmes de gestion financière et d'information lui permettant d'établir ses états financiers conformément aux principes comptables généralement reconnus qui tiennent compte de l'intérêt public.

Budget annuel
29 Le conseil adopte pour chaque exercice un budget indiquant :

a) l'ensemble des recettes que la Société anticipe pour l'exercice et tout excédent accumulé découlant des exercices précédents;

b) l'ensemble des frais de fonctionnement qu'elle prévoit pour l'exercice et tout déficit accumulé découlant des exercices précédents.

Sale of assets prohibited
30 Efficiency Manitoba must not sell, lease or otherwise dispose of any its property other than in the ordinary course of business without the consent of the minister.

Audit
31 Efficiency Manitoba's annual financial statements must be audited by the Auditor General or any other auditor appointed by the Lieutenant Governor in Council.

Annual report
32(1) Within six months after the end of each fiscal year, Efficiency Manitoba must prepare and submit to the minister an annual report on its activities and operations during that fiscal year. The report must include

(a) Efficiency Manitoba's audited financial statements for the fiscal year;

(b) for the plan year that ends in the fiscal year, Efficiency Manitoba's comparison of the net savings attained in the plan year with the projected net savings for that plan year that were set out in the applicable approved efficiency plan, together with an explanation of any significant discrepancy between the two;

(c) if any portion of the continency fund was used in the applicable plan year, as provided for in subclause 9(l)(iii),

(i) a description of the initiatives for which the contingency fund was used,

(ii) an assessment of the net savings and other benefits realized as a result of those initiatives, and

(iii) an analysis of the cost-effectiveness of those initiatives; and

(d) a description of any operational adjustments Efficiency Manitoba made during the fiscal year, as provided for under subsection 12(5).

Vente de l'actif interdite
30 La Société ne peut, sans le consentement du ministre, disposer de ses biens, notamment par vente ou location, autrement que dans le cours normal de ses activités.

Audit
31 Le vérificateur général ou tout autre auditeur nommé par le lieutenant-gouverneur en conseil audite les états financiers annuels de la Société.

Rapport annuel
32(1) Dans les six mois suivant la fin de chaque exercice, la Société établit et présente au ministre un rapport portant sur ses activités au cours de cet exercice. Le rapport comporte les renseignements suivants :

a) les états financiers audités de la Société pour l'exercice;

b) pour l'année visée par un plan se terminant au cours de l'exercice, une comparaison effectuée par la Société entre les économies nettes réalisées au cours de l'année en question et les économies nettes projetées pour cette même année qui ont été fixées dans le plan d'efficacité énergétique approuvé qui s'applique, accompagnée d'une explication sur toute divergence importante entre les deux;

c) si une portion du fonds de prévoyance a été utilisée au cours de l'année visée par un plan, ainsi qu'il est prévu au sous-alinéa 9l)(iii) :

(i) une mention des initiatives pour lesquelles le fonds de prévoyance a été utilisé,

(ii) une évaluation des économies nettes et des autres avantages obtenus grâce à ces initiatives,

(iii) une analyse du rapport coût-efficacité de ces initiatives;

d) une mention des ajustements opérationnels apportés par la Société au cours de l'exercice, ainsi qu'il est prévu au paragraphe 12(5).

Meaning of "plan year"
32(2) In subsection (1), **"plan year"** means the 12-month period ending on the anniversary of the commencement date.

Définition d'« année visée par un plan »
32(2) Pour l'application du paragraphe (1), **« année visée par un plan »** s'entend de la période de 12 mois se terminant à la date anniversaire de la date de mise en œuvre.

Tabling annual report in Assembly
33 The minister must table a copy of the annual report prepared under section 32 in the Assembly within 15 days after receiving it if the Assembly is sitting or, if it is not, within 15 days after the next sitting begins.

Dépôt du rapport annuel devant l'Assemblée
33 Le ministre dépose un exemplaire du rapport annuel établi au titre de l'article 32 devant l'Assemblée dans les 15 jours suivant sa réception ou, si elle ne siège pas, au plus tard 15 jours après la reprise de ses travaux.

INFORMATION REQUIREMENTS

Efficiency Manitoba may collect information
34(1) Efficiency Manitoba is authorized to collect information, including personal information, from the following entities if the information is reasonably required for the purpose of designing or delivering Efficiency Manitoba's initiatives under this Act:

(a) Manitoba Hydro;

(b) a government department or another government agency;

(c) a public utility or a municipality that supplies water to its inhabitants, if the utility or municipality is prescribed by regulation.

Types of information
34(2) Subject to the regulations, the information that may be collected under subsection (1) includes, without limitation,

(a) customer electricity and gas usage;

(b) information respecting on-meter efficiency programs and other loan or financing programs;

EXIGENCES EN MATIÈRE DE RENSEIGNEMENTS

Collecte de renseignements par la Société
34(1) La Société est autorisée à recueillir des renseignements, y compris des renseignements personnels, des entités indiquées ci-dessous si ces renseignements sont raisonnablement nécessaires à la conception et à la mise en œuvre de ses initiatives sous le régime de la présente loi :

a) Hydro-Manitoba;

b) un ministère du gouvernement ou un autre organisme gouvernemental;

c) un service public ou une municipalité qui approvisionne sa population en eau, s'il s'agit d'un service public ou d'une municipalité désigné par règlement.

Types de renseignements
34(2) Sous réserve des règlements, la Société peut notamment recueillir les renseignements indiqués ci-dessous en vertu du paragraphe (1) :

a) des renseignements sur la consommation d'électricité et de gaz par des clients;

b) des renseignements sur les programmes d'aide à l'efficacité énergétique et d'autres programmes de prêt ou de financement;

(c) information respecting load and load capacity; and

(d) if prescribed by regulation, similar information concerning the supply and consumption of potable water.

c) des renseignements sur la charge ou la capacité de charge;

d) s'ils sont visés par règlement, des renseignements similaires sur la fourniture et la consommation d'eau potable.

Duty to provide information
34(3) A government department or government agency — including Manitoba Hydro — or prescribed utility or municipality, that receives a request under this section must provide the information requested in the form and within the time specified by Efficiency Manitoba.

Obligation de fournir les renseignements
34(3) Les ministères du gouvernement ou les organismes gouvernementaux, y compris Hydro-Manitoba, ou encore les services publics ou municipalités désignés par règlement qui reçoivent une demande en vertu du présent article fournissent les renseignements demandés en la forme et dans le délai que fixe la Société.

Confidentiality
34(4) Efficiency Manitoba must keep confidential all personal information obtained under this section, except information that is in the public domain or that is required by law to be disclosed.

Confidentialité
34(4) La Société doit préserver la confidentialité de tous les renseignements personnels obtenus en vertu du présent article, sauf ceux qui sont du domaine public ou qui doivent être communiqués selon les règles de droit.

Access to information or data banks
35(1) If information described in section 34 is included in a data base or other collection of information maintained by a government department or government agency — including Manitoba Hydro — or a utility or municipality prescribed by regulation, Efficiency Manitoba and the department, agency or prescribed utility or municipality may enter into an arrangement permitting one or more employees of Efficiency Manitoba designated by the parties to have access to the database or collection to the extent necessary to obtain the information.

Accès aux renseignements ou aux banques de données
35(1) Si les renseignements visés à l'article 34 sont contenus dans une banque de données ou un autre recueil de renseignements tenu par un ministère du gouvernement ou un organisme gouvernemental, y compris Hydro-Manitoba, ou encore un service public ou une municipalité désigné par règlement, la Société et l'autre partie concernée peuvent conclure une entente permettant à un ou à plusieurs employés de la Société désignés par les parties d'avoir accès à la banque de données ou au recueil dans la mesure nécessaire pour obtenir les renseignements exigés.

Arrangement must protect information
35(2) An arrangement for access must include reasonable security safeguards to protect information against risks such as unauthorized access, use, disclosure and destruction.

Protection des renseignements
35(2) Toute entente sur l'accès doit prévoir des mesures de sécurité raisonnables pour protéger les renseignements contre des risques comme l'accès, l'utilisation, la communication et la destruction non autorisés.

Settling a dispute
35(3) If the parties are unable to agree on an arrangement, or a dispute arises between the parties respecting an arrangement, the PUB may, on the application of one of the parties and after hearing from the parties, issue an order granting access, on any terms and conditions that may be specified, or refusing access.

Effect of order
35(4) An order made by the PUB under this section is binding on Efficiency Manitoba and the applicable government department, government agency, prescribed utility or municipality.

Limits on personal information
36(1) Under section 34 or 35, Efficiency Manitoba must

(a) not request or collect personal information if other information will serve the purpose; and

(b) limit the amount of personal information requested or collected to the minimum amount necessary to accomplish the purpose.

Duty to adopt security safeguards
36(2) The minister and Efficiency Manitoba must protect the personal information collected under this Act by adopting reasonable administrative, technical and physical safeguards that ensure the confidentiality, security, accuracy and integrity of the information.

Résolution de conflit
35(3) Si les parties n'arrivent pas à conclure une entente ou si un conflit survient entre elles relativement à une entente, la Régie peut, à la demande de l'une des parties et après les avoir entendues, rendre une ordonnance accordant l'accès selon les modalités qu'elle peut imposer ou interdire l'accès.

Effet de l'ordonnance
35(4) L'ordonnance rendue par la Régie en vertu du présent article lie la Société et le ministère du gouvernement, l'organisme gouvernemental et le service public ou la municipalité désigné par règlement.

Limites applicables aux renseignements personnels
36(1) En vertu de l'article 34 ou 35, la Société :

a) ne peut demander des renseignements personnels si d'autres renseignements permettront de réaliser la fin visée;

b) limite les renseignements personnels demandés au minimum nécessaire à la réalisation de la fin visée.

Obligation d'établir des garanties de sécurité
36(2) Le ministre et la Société protègent les renseignements personnels recueillis sous le régime de la présente loi en établissant des garanties raisonnables de nature administrative, technique et physique satisfaisantes afin que soient assurées leur confidentialité, leur sécurité, leur exactitude et leur intégrité.

CONTINUATION OF THE AFFORDABLE ENERGY FUND

Meaning of "fund"
37(1) In this section, "**fund**" means the Affordable Energy Fund continued under *The Energy Savings Act.*

MAINTIEN DU FONDS DE LIMITATION DU PRIX DE L'ÉNERGIE

Définition de « Fonds »
37(1) Pour l'application du présent article, « **Fonds** » s'entend du Fonds de limitation du prix de l'énergie maintenu en vertu de la *Loi sur les économies d'énergie*.

Affordable energy fund continued
37(2) The fund is continued under the administration of Efficiency Manitoba.

Regulations re: fund
37(3) The Lieutenant Governor in Council may make regulations

(a) governing Efficiency Manitoba's administration of the fund, including

(i) requiring Efficiency Manitoba to hold amounts in the fund in a separate account in a financial institution as defined in *The Financial Administration Act*,

(ii) authorizing Efficiency Manitoba to use amounts available in the fund for the purposes set out in sections 5 and 6 of *The Energy Savings Act*, as that Act read immediately before the coming into force of this Act,

(iii) establishing the form and manner in which proposed uses are to be incorporated into an efficiency plan, and

(iv) requiring that the actual uses be set out in an approved efficiency plan;

(b) prescribing an amount that Manitoba Hydro must ensure to be in the fund at the beginning of each fiscal year;

(c) no earlier than three years after the coming into force of this section, providing for the winding-up of the fund, including providing for the distribution of any amounts remaining in the fund.

Maintien du Fonds de limitation du prix de l'énergie
37(2) Le Fonds est maintenu et sa gestion relève de la Société.

Règlements concernant le Fonds
37(3) Le lieutenant-gouverneur en conseil peut, par règlement :

a) régir la gestion du Fonds relevant de la Société et notamment :

(i) exiger que la Société détienne les sommes d'argent versées au crédit du Fonds dans un compte distinct auprès d'un établissement financier au sens de la *Loi sur la gestion des finances publiques*,

(ii) autoriser la Société à utiliser les sommes d'argent portées au crédit du Fonds aux fins prévues aux articles 5 et 6 de la *Loi sur les économies d'énergie* dans sa version antérieure à l'entrée en vigueur de la présente loi,

(iii) déterminer la façon dont l'affectation proposée des sommes d'argent est intégrée à tout plan d'efficacité énergétique,

(iv) exiger que l'affectation réelle des sommes d'argent soit établie dans un plan d'efficacité énergétique approuvé;

b) fixer la somme d'argent qu'Hydro-Manitoba doit détenir dans le Fonds au début de chaque exercice;

c) dans un délai minimal de trois ans après l'entrée en vigueur du présent article, prévoir la liquidation du Fonds et notamment la distribution du solde, le cas échéant.

REGULATIONS

Regulations — savings targets
38(1) On recommendation of the minister, the Lieutenant Governor in Council may make regulations amending a savings target established under section 7 or 8.

Minister's recommendations
38(2) In making a recommendation under this section, the minister is to consult with Efficiency Manitoba and is to have regard for the recommendations of the PUB, if any.

Regulations — general
39 The Lieutenant Governor in Council may make regulations

(a) prescribing the commencement date;

(b) prescribing measures, actions, programs, or services or rates that are included or excluded from the definition "demand-side management initiative" in section 2;

(c) respecting Efficiency Manitoba administering or undertaking initiatives on behalf of others, including prescribing terms and conditions on Efficiency Manitoba's becoming engaged in these activities, which Efficiency Manitoba must comply with;

(d) prescribing activities Efficiency Manitoba must undertake relating to efficiency, conservation or the reduction of greenhouse gas emissions in Manitoba;

(e) authorizing Efficiency Manitoba to provide services outside of Manitoba, including imposing restrictions on the authorization;

(f) prescribing a formula for or the manner in which net savings are to be determined, including limiting or excluding the net savings from particular measures, actions, programs, services or rates that may be included in the determinations;

(g) governing the submission of an efficiency plan to the PUB;

RÈGLEMENTS

Règlements — objectifs d'économies
38(1) Sur la recommandation du ministre, le lieutenant-gouverneur en conseil peut, par règlement, modifier un objectif d'économies fixé en vertu de l'article 7 ou 8.

Recommandations du ministre
38(2) Avant de faire une recommandation en vertu du présent article, le ministre consulte la Société et tient compte des recommandations de la Régie, le cas échéant.

Règlements — dispositions générales
39 Le lieutenant-gouverneur en conseil peut, par règlement :

a) fixer la date de mise en œuvre;

b) prévoir les mesures, les actions, les programmes, les services ou les tarifs que vise ou exclut la définition d'« initiative d'effacement de consommation » figurant à l'article 2;

c) régir la gestion ou la mise en œuvre d'initiatives par la Société pour le compte d'autrui, notamment fixer les modalités applicables qu'elle se doit de respecter lorsqu'elle s'engage dans ces activités;

d) prévoir les activités que la Société doit entreprendre concernant l'efficacité, la conservation et la réduction d'émissions de gaz à effet de serre au Manitoba;

e) autoriser la Société à fournir des services à l'extérieur du Manitoba et, notamment, assortir cette autorisation de restrictions;

f) fixer une formule en vue du calcul des économies nettes ou la façon de les calculer, y compris limiter ou exclure les économies nettes résultant de mesures, d'actions, de programmes, de services ou de tarifs précis qui pourraient être comprises dans le calcul;

g) régir la présentation d'un plan d'efficacité énergétique à la Régie;

(h) prescribing factors which the PUB must consider when it reviews an efficiency plan, including the value or weight to be given to

(i) reductions in greenhouse gas emissions in Manitoba, and

(ii) the societal benefits to be achieved by all or a portion of Efficiency Manitoba's initiatives;

(i) prescribing rules for determining if the initiatives included in a proposed three-year plan are adequate, cost-effective or both;

(j) prescribing rules for determining costs that are to be considered administrative or overhead costs for the purpose of Efficiency Manitoba's three-year or annual budget;

(k) respecting matters to be addressed in an assessment conducted under section 16 and the timing for any assessment report to be filed or published under that section;

(l) respecting billing and collection services to be provided to Efficiency Manitoba by Manitoba Hydro;

(m) respecting energy efficiency or energy conservation loan or financing programs that, as part of an approved efficiency plan, are to be delivered by Manitoba Hydro in conjunction with Efficiency Manitoba;

(n) establishing requirements Manitoba Hydro must comply with in respect of energy efficiency or energy conservation loan or financing programs that are, or are to be, implemented by Efficiency Manitoba;

(o) respecting on-meter efficiency programs;

(p) for the purpose of section 6, specifying additional powers for Efficiency Manitoba or restricting the powers of Efficiency Manitoba, and imposing terms and conditions on those additions or restrictions;

h) fixer les facteurs dont la Régie doit tenir compte lorsqu'elle examine un plan d'efficacité énergétique, y compris la valeur ou le poids à donner :

(i) aux réductions de gaz à effet de serre au Manitoba,

(ii) aux bienfaits sociaux que procurerait la totalité ou une partie des initiatives de la Société;

i) fixer des règles servant à établir si des initiatives comprises dans un plan triennal proposé sont adéquates, rentables ou les deux;

j) fixer des règles servant à établir quels frais doivent être considérés comme des frais administratifs ou des coûts indirects dans le cadre du budget annuel ou triennal de la Société;

k) régir les questions qui doivent être examinées dans le cadre d'une évaluation effectuée en vertu de l'article 16 et les délais de dépôt ou de diffusion des rapports d'évaluation en vertu de cet article;

l) régir les services de facturation et de perception que doit fournir Hydro-Manitoba à la Société;

m) régir les programmes de prêt ou de financement en matière d'efficacité énergétique ou d'économie d'énergie qui, dans le cadre d'un plan d'efficacité énergétique approuvé, doivent être offerts par Hydro-Manitoba conjointement avec la Société;

n) fixer les exigences qu'Hydro-Manitoba doit respecter relativement aux programmes de prêt ou de financement en matière d'efficacité énergétique ou d'économie d'énergie qui sont mis en œuvre par la Société ou qui doivent l'être;

o) régir les programmes d'aide à l'efficacité énergétique;

p) pour l'application de l'article 6, accroître ou restreindre les pouvoirs de la Société et fixer des modalités à cet égard;

(q) specifying types of information that must not be requested under section 34 or that are not subject to section 35;

(r) respecting the extent to which *The Corporations Act* applies to Efficiency Manitoba;

(s) for the purpose of section 34 or 35, prescribing a public utility or a municipality, and prescribing the types of information, including personal information, that Efficiency Manitoba may collect concerning the supply and consumption of potable water;

(t) defining a word or phrase used but not defined in this Act;

(u) respecting any other matter the Lieutenant Governor in Council considers necessary or advisable for the administration of this Act.

q) prévoir les types de renseignements qui ne peuvent être demandés en vertu de l'article 34 ou qui ne sont pas assujettis à l'article 35;

r) prévoir dans quelle mesure la *Loi sur les corporations* s'applique à la Société;

s) pour l'application de l'article 34 ou 35, désigner un service public ou une municipalité et fixer les types de renseignements, y compris les renseignements personnels, que la Société peut recueillir concernant la fourniture et la consommation d'eau potable;

t) définir des termes ou des expressions qui sont utilisés dans la présente loi mais qui n'y sont pas définis;

u) prendre toute autre mesure qu'il estime nécessaire ou utile à l'application de la présente loi.

Regulations — demand-side management of other resources

40(1) The Lieutenant Governor in Council may make regulations requiring any of the following to be subject to demand-side management under this Act:

(a) electrical power in Manitoba;

(b) potable water that is consumed in Manitoba;

(c) fossil fuels that are consumed within the transportation sector in Manitoba.

Règlements — effacement de consommation pour d'autres ressources

40(1) Le lieutenant-gouverneur en conseil peut, par règlement, prévoir que sont soumis à l'effacement de consommation en vertu de la présente loi :

a) la puissance électrique au Manitoba;

b) l'eau potable consommée au Manitoba;

c) les combustibles fossiles consommés par le secteur des transports au Manitoba.

Regulations — savings targets for other resources

40(2) The Lieutenant Governor in Council may make regulations prescribing savings targets to be met by Efficiency Manitoba with respect to any of the resources set out in clauses (1)(a) to (c).

Règlements — objectifs d'économies pour d'autres ressources

40(2) Le lieutenant-gouverneur en conseil peut, par règlement, fixer les objectifs d'économies que la Société a la responsabilité d'atteindre relativement aux ressources énumérées aux alinéas (1)a) à c).

Content of regulation under this section

40(3) A regulation under this section may

(a) require Efficiency Manitoba to establish three-year plans for meeting savings targets in respect of a resource for which a savings target is established under subsection (2), and include provisions governing

(i) the contents of a plan,

(ii) the timing and manner in which a plan is to be prepared, submitted, reviewed, approved and implemented,

(iii) the manner in which the amount of savings under the plan are to be determined and assessed, and the performance measures to be used in evaluating outcomes, and

(iv) the plan's commencement date;

(b) prescribe rules for determining if the initiatives included in a proposed three-year plan are adequate, cost-effective or both;

(c) in respect of implementing an approved plan, govern subcontracting by Efficiency Manitoba;

(d) establish the manner in which demand for and reductions in the use or consumption of a resource for which a savings target is established under subsection (2) are to be calculated or determined;

(e) prescribe rules for determining whether reductions in demand or consumption are attributable, in whole or in part, to initiatives of Efficiency Manitoba, and if those reductions are to be included in calculating the savings achieved by Efficiency Manitoba;

(f) authorize Efficiency Manitoba to achieve savings beyond the targeted savings, subject to any terms and conditions that are prescribed;

Contenu des règlements

40(3) Tout règlement pris en vertu du présent article peut :

a) exiger que la Société adopte des plans triennaux pour atteindre les objectifs d'économies relativement à une ressource pour laquelle un objectif d'économies est fixé en vertu du paragraphe (2), et comporter notamment des dispositions sur ce qui suit :

(i) le contenu d'un plan,

(ii) l'échéancier et la façon dont un plan doit être élaboré, présenté, examiné, approuvé et mis en œuvre,

(iii) la façon dont le montant d'économies sous le régime du plan doit être établi et évalué et les indicatifs de rendement qu'il faut utiliser en vue de l'évaluation des résultats,

(iv) la date de mise en œuvre du plan;

b) adopter des règles visant à établir si les initiatives prévues dans un projet de plan triennal sont adéquates ou rentables ou les deux à la fois;

c) dans le cadre de la mise en œuvre d'un plan approuvé, régir le recours à la sous-traitance par la Société;

d) fixer la façon selon laquelle la demande visant une ressource pour laquelle un objectif d'économies a été fixé en vertu du paragraphe (2) et la réduction de l'utilisation ou de la consommation de cette ressource doivent être calculées ou établies;

e) adopter des règles visant à établir si des réductions de la demande ou de la consommation sont attribuables, en totalité ou en partie, aux initiatives de la Société et si ces réductions doivent être comprises dans le calcul des économies qu'elle a réalisées;

f) autoriser la Société à réaliser des économies au-delà des économies ciblées, sous réserve des modalités qu'il prévoit;

(g) govern the activities Efficiency Manitoba may carry out with respect to a resource for which a savings target is established under subsection (2), including prescribing terms and conditions that apply in respect of those activities, which Efficiency Manitoba must comply with;

(h) prescribe the types of binding directives the minister may make in respect of Efficiency Manitoba's regulated resource activities, and the circumstances in which they may be made;

(i) require Efficiency Manitoba to undertake consultations and establish other preconditions that must be met before any change in the savings targets prescribed under subsection (2) are recommended to the Lieutenant Governor in Council; and

(j) address any other matter the Lieutenant Governor in Council considers necessary or advisable to meet a savings target established under subsection (2).

g) régir les activités que peut exercer la Société relativement à une ressource pour laquelle un objectif d'économies a été fixé en vertu du paragraphe (2), et notamment fixer des modalités relatives à ces activités qu'elle se doit de respecter;

h) prévoir le type de directives obligatoires que peut donner le ministre relativement aux activités de la Société liées aux ressources réglementées et les circonstances dans lesquelles elles peuvent être données;

i) exiger que la Société procède à des consultations et fixe d'autres conditions préliminaires qui doivent être respectées avant qu'une modification des objectifs d'économies fixés par règlement en vertu du paragraphe (2) soit recommandée au lieutenant-gouverneur en conseil;

j) prendre toute autre mesure qu'il estime nécessaire ou utile pour que soit atteint un objectif d'économies fixé en vertu du paragraphe (2).

Application of Public Utilities Board Act
40(4) For certainty, a regulation under this section may assign responsibilities to the PUB, and section 17 applies in respect of the PUB discharging those responsibilities.

Application de la *Loi sur la Régie des services publics*
40(4) Il est entendu qu'un règlement pris en vertu du présent article peut confier des attributions à la Régie et que l'article 17 s'applique à l'exercice de ces attributions.

Efficiency plan may address demand for electrical power
40(5) A regulation under this section may require Efficiency Manitoba to address its responsibilities for securing savings targets in respect of the demand for electrical power in Manitoba within its efficiency plans, in which case,

(a) the initiatives related to the demand for electrical power that are proposed, approved and undertaken are deemed to be demand-side management initiatives and form part of an efficiency plan for the purpose of this Act, including, for certainty, funding of the plan under subsection 18(2); and

Plan d'efficacité énergétique pour la demande en puissance électrique
40(5) Tout règlement pris en vertu du présent article peut exiger que la Société s'acquitte de ses responsabilités pour atteindre les objectifs d'économies relativement à la demande en puissance électrique au Manitoba en vertu de ses plans d'efficacité énergétique. Si tel est le cas :

a) les initiatives liées à la demande en puissance électrique qui sont proposées, approuvées et mises en œuvre sont réputées constituer des initiatives d'effacement de consommation et faire partie d'un plan d'efficacité énergétique pour l'application de la présente loi, y compris le financement du plan en vertu du paragraphe 18(2);

(b) the regulation may change or make an addition or substitution to a provision of this Act, as required for the purpose of having initiatives related to the demand for electrical power included in an efficiency plan, and the provision of the regulation prevails to the extent it is inconsistent with this Act.

b) le règlement peut modifier une disposition de la présente loi ou y insérer un ajout ou une substitution, selon ce qui est nécessaire pour que des initiatives liées à la demande en puissance électrique soient comprises dans un plan d'efficacité énergétique, auquel cas les dispositions du règlement l'emportent sur les dispositions incompatibles de la présente loi.

PART 6

TRANSITIONAL PROVISIONS AND CONSEQUENTIAL AMENDMENTS

TRANSITIONAL

Funding of the transition and start-up costs
41 *Manitoba Hydro is solely responsible for all of Efficiency Manitoba's start-up and operational costs from the date of incorporation of Efficiency Manitoba to the commencement date of the first approved efficiency plan.*

Interim CEO
42(1) *On the coming into force of this section, the minister may appoint a person to serve as the interim chief executive officer of Efficiency Manitoba.*

Term
42(2) *The interim chief executive officer is to hold office until his or her appointment is confirmed or revoked by the directors appointed under section 21.*

Transitional regulations
43 *The Lieutenant Governor in Council may make regulations respecting any matter or thing the Lieutenant Governor in Council considers necessary or advisable to effect the transition of matters within the mandate of Efficiency Manitoba from Manitoba Hydro to Efficiency Manitoba.*

PARTIE 6

DISPOSITIONS TRANSITOIRES ET MODIFICATIONS CORRÉLATIVES

DISPOSITIONS TRANSITOIRES

Financement de la transition et frais de démarrage
41 *Hydro-Manitoba est entièrement responsable des frais de démarrage et opérationnels de la Société de la date de sa constitution en personne morale à la date de mise en œuvre du premier plan d'efficacité énergétique approuvé.*

Premier dirigeant par intérim
42(1) *Dès l'entrée en vigueur du présent article, le ministre nomme une personne pour exercer la charge de premier dirigeant par intérim de la Société.*

Mandat
42(2) *Le premier dirigeant par intérim occupe sa charge jusqu'à ce que sa nomination soit confirmée ou révoquée par les administrateurs nommés en vertu de l'article 21.*

Règlements transitoires
43 *Le lieutenant-gouverneur en conseil peut, par règlement, prendre toute mesure qu'il estime nécessaire ou utile pour concrétiser la transition des questions faisant partie du mandat de la Société d'Hydro-Manitoba à la Société.*

Transitional — on-meter efficiency improvements program

44 *Despite the repeal of* ***The Energy Savings Act****, sections 1 and 9 to 14 of that Act, as it read immediately before the coming into force of this section, continue to apply in respect of any agreement Manitoba Hydro entered into under the on-meter efficiency improvements program before the coming into force of this Act.*

Disposition transitoire — programme d'amélioration de l'efficacité énergétique

44 *Malgré l'abrogation de la* ***Loi sur les économies d'énergie****, les articles 1 et 9 à 14 de cette loi dans sa version antérieure à l'entrée en vigueur du présent article continuent de s'appliquer à l'égard de tout accord conclu par Hydro-Manitoba dans le cadre d'un programme d'amélioration de l'efficacité énergétique avant l'entrée en vigueur de la présente loi.*

CONSEQUENTIAL AMENDMENTS

Consequential amendment, C.C.S.M. c. C336

45 ***The Crown Corporations Public Review and Accountability Act*** *is amended by adding the following after subsection 26(5):*

Manitoba Hydro

26(6) In conducting a review under this Part of rates for services of Manitoba Hydro, The Public Utilities Board must take into consideration, in addition to the factors described in subsection (4), the costs to be incurred by Manitoba Hydro in respect of Efficiency Manitoba, as required under *The Efficiency Manitoba Act.*

Consequential amendment, C.C.S.M. c. H190

46 *Clause 52(d) of* ***The Manitoba Hydro Act*** *is amended by adding "*or *The Efficiency Manitoba Act" after "The Energy Savings Act".*

Consequential amendment, C.C.S.M. c. R30

47 *Clause 45(5)(h.1) of* ***The Real Property Act*** *is amended by adding "*or section 15 of *The Efficiency Manitoba Act" at the end.*

MODIFICATIONS CORRÉLATIVES

Modification du c. C336 de la ***C.P.L.M.***

45 *La* ***Loi sur l'examen public des activités des corporations de la Couronne et l'obligation redditionnelle de celles-ci*** *est modifiée par adjonction, après le paragraphe 26(5), de ce qui suit :*

Hydro-Manitoba

26(6) Dans le cadre d'un examen sur les tarifs afférents à des services d'Hydro-Manitoba en vertu de la présente partie, la Régie des services publics tient compte, en plus des éléments mentionnés au paragraphe (4), des frais que doit engager Hydro-Manitoba relativement à la Société pour l'efficacité énergétique au Manitoba, comme le prévoit la *Loi sur la Société pour l'efficacité énergétique au Manitoba*.

Modification du c. H190 de la ***C.P.L.M.***

46 *L'alinéa 52d) de la* ***Loi sur l'Hydro-Manitoba*** *est modifié par adjonction, après «* la *Loi sur les économies d'énergie », de «* ou la *Loi sur la Société pour l'efficacité énergétique au Manitoba ».*

Modification du c. R30 de la ***C.P.L.M.***

47 *L'alinéa 45(5)h.1) de la* ***Loi sur les biens réels*** *est modifié par adjonction, à la fin, de «* ou de l'article 15 de la *Loi sur la Société pour l'efficacité énergétique au Manitoba ».*

Consequential amendments, C.C.S.M. c. R119

48 *Subsection 1(1) of* ***The Residential Tenancies Act*** *is amended*

*(a) in the definitions "account for power" and "monthly charge", by adding "*or subsection 14(1) of *The Efficiency Manitoba Act" at the end; and*

*(b) in the definition "on-meter efficiency improvements program", by adding "*and includes an on-meter efficiency program established by Efficiency Manitoba under *The Efficiency Manitoba Act" at the end.*

Modification du c. R119 de la ***C.P.L.M.***

48 *Le paragraphe 1(1) de la* ***Loi sur la location à usage d'habitation*** *est modifié :*

a) dans les définitions de « compte d'énergie » et de « frais mensuels », par adjonction, à la fin, de « ou du paragraphe 14(1) de la *Loi sur la Société pour l'efficacité énergétique au Manitoba »;*

b) dans la définition de « programme d'amélioration de l'efficacité énergétique », par adjonction, à la fin, de « La présente définition vise notamment un programme d'aide à l'efficacité énergétique établi par la Société pour l'efficacité énergétique au Manitoba au titre de la *Loi sur la Société pour l'efficacité énergétique au Manitoba*. ».

PART 7

REPEAL, C.C.S.M. REFERENCE AND COMING INTO FORCE

Repeal
49 *The Energy Savings Act*, S.M. 2012, c. 26, is repealed.

C.C.S.M. reference
50 This Act may be referred to as chapter E15 of the *Continuing Consolidation of the Statutes of Manitoba*.

Coming into force
51(1) Subject to subsection (2), this Act comes into force on a day to be fixed by proclamation.

Coming into force — section 42
51(2) Section 42 comes into force on the day this Act receives royal assent.

PARTIE 7

ABROGATION, *CODIFICATION PERMANENTE* ET ENTRÉE EN VIGUEUR

Abrogation
49 La *Loi sur les économies d'énergie*, c. 26 des *L.M. 2012*, est abrogée.

Codification permanente
50 La présente loi constitue le chapitre E15 de la *Codification permanente des lois du Manitoba*.

Entrée en vigueur
51(1) Sous réserve du paragraphe (2), la présente loi entre en vigueur à la date fixée par proclamation.

Entrée en vigueur de l'article 42
51(2) L'article 42 entre en vigueur le jour de la sanction de la présente loi.

The Queen's Printer
for the Province of Manitoba

L'Imprimeur de la Reine
du Manitoba

APPENDIX B: EFFICIENCY MANITOBA REGULATION 119/2019

THE EFFICIENCY MANITOBA ACT
(C.C.S.M. c. E15)

Efficiency Manitoba Regulation

LOI SUR LA SOCIÉTÉ POUR L'EFFICACITÉ ÉNERGÉTIQUE AU MANITOBA
(c. E15 de la C.P.L.M.)

Règlement sur la Société pour l'efficacité énergétique au Manitoba

Regulation 119/2019
Registered August 9, 2019

Règlement 119/2019
Date d'enregistrement : le 9 août 2019

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TABLE DES MATIÈRES

Definitions

1 The following definitions apply in this regulation.

"**Act**" means *The Efficiency Manitoba Act*. (« *Loi* »)

"**Centra**" means Centra Gas Manitoba Inc. (« Centra »)

"**fossil fuel**" means a hydrocarbon derived from living matter of a previous geologic time. (« combustible fossile »)

Définitions

1 Les définitions qui suivent s'appliquent au présent règlement.

« **Centra** » La filiale Centra Gas Manitoba Inc. ("Centra")

« **combustible fossile** » Hydrocarbure dérivé de la matière organique d'une période géologique antérieure. ("fossil fuel")

« ***Loi*** » La *Loi sur la Société pour l'efficacité énergétique au Manitoba*. ("Act")

ADMINISTRATIVE MATTERS

Commencement date

2 The commencement date is prescribed to be April 1, 2020.

QUESTIONS ADMINISTRATIVES

Date de mise en œuvre

2 La date de mise en œuvre est fixée au 1er avril 2020.

Deadline to submit efficiency plan to PUB

3 Efficiency Manitoba must submit each efficiency plan to the PUB under section 10 of the Act no later than six months before the plan is to come into effect.

Measures not considered demand-side management initiatives

4 A switch from one type of fossil fuel to a different type of fossil fuel used for the same purpose is excluded from the definition "demand-side management initiative" in section 2 of the Act.

Soumission des plans d'efficacité énergétique à la Régie

3 La Société soumet à la Régie chaque plan d'efficacité énergétique visé à l'article 10 de la *Loi* au plus tard six mois avant son entrée en vigueur.

Interprétation — initiatives d'effacement de consommation

4 La définition d'« initiative d'effacement de consommation » figurant à l'article 2 de la *Loi* ne vise pas le remplacement d'un type de combustible fossile par un autre utilisé aux mêmes fins.

ADDITIONAL POWERS OF EFFICIENCY MANITOBA

POUVOIRS SUPPLÉMENTAIRES DE LA SOCIÉTÉ

Demand for electrical power

5 Efficiency Manitoba may, at the request of Manitoba Hydro and at Manitoba Hydro's expense, undertake initiatives to reduce the demand for electrical power in areas of Manitoba that experience or may experience capacity constraints. But if those initiatives are not intended primarily to reduce the consumption of electrical energy, they are not to form part of an efficiency plan and Part 3 of the Act does not apply to them.

Demande en puissance électrique

5 La Société peut, à la demande d'Hydro-Manitoba et aux frais de celle-ci, lancer des initiatives visant à réduire la demande en puissance électrique dans les régions du Manitoba qui font ou pourraient faire face à des contraintes de capacité. Toutefois, si ces initiatives n'ont pas pour objectif principal la réduction de la consommation d'énergie électrique, elles ne peuvent faire partie d'un plan d'efficacité énergétique et la partie 3 de la *Loi* ne s'y applique pas.

Fossil fuels other than natural gas

6 Efficiency Manitoba may undertake initiatives to reduce the consumption of fossil fuels other than natural gas in Manitoba, but unless those initiatives qualify for the use of the Affordable Energy Fund under section 14, they are not to be funded under an efficiency plan and Part 3 of the Act does not apply to them.

Combustibles fossiles autres que le gaz naturel

6 La Société peut lancer des initiatives visant à réduire la consommation au Manitoba de combustibles fossiles autres que le gaz naturel. Toutefois, ces initiatives ne peuvent être financées dans le cadre d'un plan d'efficacité énergétique et la partie 3 de la *Loi* ne s'y applique pas, sauf si elles donnent droit à un soutien financier du Fonds de limitation du prix de l'énergie au titre de l'article 14.

Other powers

7 Efficiency Manitoba may

(a) participate in the development and updating of building or energy codes, standards and regulations, including model codes, standards or regulations, in respect of matters relating to energy efficiency;

Autres pouvoirs

7 La Société peut :

a) participer à l'élaboration et à la mise à jour de codes, normes ou règlements relatifs au bâtiment ou à l'énergie, y compris de codes, normes ou règlements modèles, en ce qui a trait aux questions portant sur l'efficacité énergétique;

(b) assist various levels of government in consulting with Manitoba stakeholders for the purpose of developing or updating building or energy codes, standards and regulations in respect of matters relating to energy efficiency;

(c) develop and implement programs to improve building designs, building techniques and building technologies to increase energy efficiency;

(d) undertake education and training initiatives with respect to building and energy code requirements relating to energy efficiency; and

(e) assist the government, a municipality or local government district, or a community as defined in *The Northern Affairs Act*, in the review of building and construction plans with respect to codes, standards and regulations relating to energy efficiency.

b) aider les différents ordres de gouvernement dans le cadre des consultations avec les intéressés au Manitoba en vue de l'élaboration et de la mise à jour de codes, normes ou règlements relatifs au bâtiment ou à l'énergie en ce qui a trait aux questions portant sur l'efficacité énergétique;

c) élaborer et mettre en œuvre des programmes visant l'amélioration de la conception des bâtiments, des techniques et des technologies de construction afin d'accroître l'efficacité énergétique;

d) lancer des initiatives de formation relativement aux exigences en matière d'efficacité énergétique contenues dans les codes du bâtiment et de l'énergie;

e) aider le gouvernement, les municipalités et les districts d'administration locale, ainsi que les collectivités au sens de la *Loi sur les affaires du Nord*, dans l'examen des dessins de bâtiment et d'exécution relativement aux codes, aux normes et aux règlements en matière d'efficacité énergétique.

DETERMINATION OF SAVINGS

When savings may be counted

8(1) Net savings in the consumption of electrical energy or natural gas count towards the respective savings target established in section 7 of the Act if the net savings are reasonably attributable

(a) to a demand-side management initiative undertaken by Efficiency Manitoba or on its behalf;

(b) to incremental savings resulting from a demand-side management initiative undertaken by Manitoba Hydro if

(i) the initiative is included in an approved efficiency plan; and

(ii) Efficiency Manitoba provides operational support or an operating incentive in respect of the initiative that is necessary to achieve the incremental savings;

CALCUL DES ÉCONOMIES

Calcul des économies

8(1) Les économies nettes en matière de consommation d'énergie électrique ou de gaz naturel sont prises en considération dans le calcul des objectifs d'économies respectifs fixés à l'article 7 de la *Loi* si elles sont raisonnablement attribuables à un des éléments suivants :

a) une initiative d'effacement de consommation lancée par la Société ou en son nom;

b) des économies supplémentaires résultant d'une initiative d'effacement de consommation lancée par Hydro-Manitoba, si :

(i) l'initiative est comprise dans un plan d'efficacité énergétique approuvé,

(ii) la Société offre un soutien opérationnel ou un incitatif opérationnel à l'égard de l'initiative, lequel est nécessaire pour l'obtention des économies supplémentaires;

(c) to a code, standard or regulation to which Efficiency Manitoba or Manitoba Hydro has made a material contribution; or

(d) to a rate to which Efficiency Manitoba has made a material contribution.

c) un code, une norme ou un règlement auxquels la Société ou Hydro-Manitoba a contribué de façon importante;

d) un tarif auquel la Société a contribué de façon importante.

8(2) Savings in the consumption of electrical energy that result from an initiative undertaken by Efficiency Manitoba under section 5 count towards the electrical energy savings targets.

8(2) Les économies en matière de consommation d'énergie électrique résultant d'une initiative que la Société a lancée en vertu de l'article 5 sont prises en considération dans le calcul des objectifs d'économies dans la consommation d'énergie électrique.

8(3) Savings in the consumption of a fossil fuel other than natural gas that result from an initiative undertaken by Efficiency Manitoba under section 6 count towards the natural gas savings targets based on an equivalent heating value, but only if the savings

(a) relate to space, water or process heating; and

(b) do not result from switching from one type of fossil fuel to another type of fossil fuel.

8(3) Les économies en matière de consommation de combustibles fossiles autres que le gaz naturel résultant d'une initiative que la Société a lancée en vertu de l'article 6 sont prises en considération dans le calcul des objectifs d'économies dans la consommation de gaz naturel, en fonction d'un pouvoir calorifique équivalent, mais uniquement si les conditions suivantes sont réunies :

a) les économies sont relatives au chauffage local, au chauffage de l'eau ou à la production de chaleur industrielle;

b) elles ne résultent pas du remplacement d'un type de combustible fossile par un autre.

Savings targets based on fiscal year

9 The savings targets during each one-year period of an efficiency plan are to be calculated by reference to the consumption of electrical energy or natural gas during the previous fiscal year and not the previous calendar year.

Calcul des objectifs d'économies fondé sur l'exercice financier

9 Les objectifs d'économies au cours de chaque période d'un an que vise un plan d'efficacité énergétique doivent être calculés en fonction de la consommation d'énergie électrique ou de gaz naturel au cours de l'exercice précédent et non de l'année civile précédente.

Net savings to be weather-adjusted

10 All net savings must be calculated on a weather-adjusted basis.

Rajustement des économies nettes pour les aléas climatiques

10 Les économies nettes sont calculées compte tenu du rajustement pour les aléas climatiques.

Additional factors to be considered by PUB

11 In addition to the factors set out in subsection 11(4) of the Act, the PUB must consider the following when reviewing an efficiency plan:

(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;

(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;

Facteurs supplémentaires dont la Régie doit tenir compte

11 En plus des facteurs énumérés au paragraphe 11(4) de la *Loi*, la Régie tient compte des éléments suivants lorsqu'elle examine un plan d'efficacité énergétique :

a) la pertinence des méthodes qu'utilise la Société pour choisir ou rejeter les initiatives d'effacement de consommation;

b) la question de savoir si le plan tient suffisamment compte des intérêts des clients résidentiels, commerciaux et industriels;

c) la question de savoir si au moins 5 % du budget que la Société consacre aux initiatives d'effacement de consommation est alloué, s'il est possible de le faire, à des initiatives visant les clients à faible revenu ou dont la participation est difficile à obtenir;

d) le rendement coût-efficacité de la gamme d'initiatives d'effacement de consommation requises pour que soient atteints les objectifs d'économies;

e) le rendement coût-efficacité des initiatives d'effacement de consommation en sus de celles qui sont requises pour que soient atteints les objectifs d'économies, si de telles initiatives sont prévues par le plan;

f) le caractère raisonnable du budget d'administration de la Société en comparaison avec les budgets d'organismes similaires;

g) l'effet que le plan d'efficacité énergétique aura sur les tarifs et sur le montant de la facture du client moyen;

h) le caractère raisonnable des économies projetées et la capacité de la Société à atteindre les objectifs d'économies annuelles et les objectifs d'économies cumulatives pour la période de 15 ans;

i) le recours par la Société à des entreprises du secteur privé et à des organismes non gouvernementaux pour la mise en œuvre d'initiatives d'effacement de consommation;

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

(k) for any efficiency plan after the first one, the reasonableness of Efficiency Manitoba's internal retrospective performance assessment;

(l) whether Efficiency Manitoba has reasonably attempted to comply with the directions of the minister.

Determining cost-effectiveness

12(1) For the purpose of clause 11(d), the cost-effectiveness of the portfolio of electrical energy demand-side management initiatives included or under consideration to be included in an efficiency plan must be determined by comparing

(a) the levelized cost to Efficiency Manitoba of the electrical energy net savings resulting from those initiatives;

with

(b) the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives, as determined by Manitoba Hydro based on a methodology consistent with its resource planning process, taking into account the timing and duration of the savings.

12(2) For the purpose of clause 11(d), the cost-effectiveness of the portfolio of natural gas demand-side management initiatives included or under consideration to be included in an efficiency plan must be determined by comparing

(a) the levelized cost to Efficiency Manitoba of the natural gas net savings resulting from those initiatives;

with

(b) the sum of

(i) the levelized marginal value to Centra of the resulting reduction or savings in the consumption of natural gas, and

j) la question de savoir si le plan tient suffisamment compte des technologies nouvelles et émergentes qui pourraient être comprises à l'avenir dans un plan d'efficacité énergétique;

k) dans le cadre de l'évaluation de tout plan postérieur au premier, le caractère raisonnable de l'évaluation interne et rétrospective des performances qu'effectue la Société;

l) le caractère raisonnable des efforts déployés par la Société pour se conformer aux directives émanant du ministre.

Établissement du rendement coût-efficacité

12(1) Pour l'application de l'alinéa 11d), le rendement coût-efficacité de la gamme d'initiatives d'effacement de consommation d'énergie électrique qui sont comprises dans un plan d'efficacité énergétique, ou dont l'inclusion est en cours d'étude, est établi au moyen de la comparaison des deux éléments suivants :

a) le coût actualisé pour la Société des économies nettes en matière de consommation d'énergie électrique résultant de ces initiatives;

b) la valeur marginale actualisée pour Hydro-Manitoba des économies nettes résultant de ces initiatives, selon ce que détermine cette dernière en fonction d'une méthode qui est conforme à son processus de planification des ressources et compte tenu de la durée de ces économies et du moment où elles doivent être réalisées.

12(2) Pour l'application de l'alinéa 11d), le rendement coût-efficacité de la gamme d'initiatives d'effacement de consommation de gaz naturel qui sont comprises dans un plan d'efficacité énergétique, ou dont l'inclusion est en cours d'étude, est établi au moyen de la comparaison des deux éléments suivants :

a) le coût actualisé pour la Société des économies nettes en matière de consommation de gaz naturel résultant de ces initiatives;

b) la somme des éléments suivants :

(i) la valeur marginale actualisée pour Centra en ce qui a trait aux réductions ou aux économies en matière de consommation de gaz naturel qui en résultent,

(ii) the natural gas transportation costs to the Manitoba border saved by Centra as a result of the gas not being consumed.

12(3) Subsections (1) and (2) apply, with necessary changes, to the assessment of the cost-effectiveness of individual demand-side management initiatives for the purpose of clause 11(e).

(ii) le coût du transport du gaz naturel vers la frontière du Manitoba qu'économise Centra du fait qu'il n'a pas été consommé.

12(3) Les paragraphes (1) et (2) s'appliquent, avec les adaptations nécessaires, à l'évaluation du rendement coût-efficacité de chacune des initiatives d'effacement de consommation pour l'application de l'alinéa 11e).

INDEPENDENT ASSESSMENT

Additional matters to be assessed

13 For the purpose of clause 16(1)(c) of the Act, the following additional matters are prescribed as having to be assessed and reported on by Efficiency Manitoba's independent assessor:

(a) the quantity of savings in the consumption of electrical energy that count towards the electrical energy savings targets under subsection 8(2);

(b) the quantity of savings in the consumption of a fossil fuel other than natural gas that count towards the natural gas savings targets under subsection 8(3).

ÉVALUATION INDÉPENDANTE

Évaluation de questions supplémentaires

13 Pour l'application de l'alinéa 16(1)c) de la *Loi*, l'évaluateur indépendant de la Société examine les questions supplémentaires qui suivent et établit un rapport :

a) les économies en matière de consommation d'énergie électrique qui sont prises en considération dans le calcul des objectifs d'économies dans la consommation d'énergie électrique en application du paragraphe 8(2);

b) les économies de consommation de combustibles fossiles autres que le gaz naturel qui sont prises en considération dans le calcul des objectifs d'économies dans la consommation de gaz naturel en application du paragraphe 8(3).

AFFORDABLE ENERGY FUND

Use of the Affordable Energy Fund

14 Efficiency Manitoba must use the Affordable Energy Fund only to undertake initiatives to encourage and realize efficiency improvements and conservation in the use of home heating fuels other than electrical energy or natural gas, and not for any other purpose.

FONDS DE LIMITATION DU PRIX DE L'ÉNERGIE

Utilisation du Fonds de limitation du prix de l'énergie

14 La Société n'utilise le Fonds de limitation du prix de l'énergie que pour lancer des initiatives qui visent à encourager ainsi qu'à accroître l'efficacité et la conservation en ce qui a trait à l'utilisation de combustibles servant au chauffage domestique autres que l'énergie électrique et le gaz naturel.

TRANSITIONAL AND COMING INTO FORCE

Furnace Replacement Program

15(1) The following definitions apply in this section.

"**FRP account**" means the segregated account for the Furnace Replacement Program established by Centra in accordance with Directive 20 of Board Order 99/07 of the PUB. (« compte du PRC »)

"**Furnace Replacement Program**" means the Furnace Replacement Program established by Centra in accordance with Board Order 99/07 of the PUB. (« Programme de remplacement des chaudières »)

15(2) Effective April 1, 2020,

(a) no further money is to be allocated to the FRP account; and

(b) the residual amount in the FRP account as of April 1, 2020 is to be used to offset the cost of the natural gas demand-side management initiatives set out in an approved efficiency plan.

15(3) For certainty, subsection (2) does not limit the PUB's jurisdiction to determine how the residual amount is to be allocated between Centra's customer classes.

15(4) If the Furnace Replacement Program is continued under an approved efficiency plan, it is to be continued under the administration of Efficiency Manitoba and funded in accordance with section 18 of the Act.

Coming into force

16(1) This, regulation, except section 14, comes into force on the day it is registered under *The Statutes and Regulations Act*.

16(2) Section 14 comes into force on April 1, 2020.

DISPOSITIONS TRANSITOIRES ET ENTRÉE EN VIGUEUR

Programme de remplacement des chaudières

15(1) Les définitions qui suivent s'appliquent au présent article.

« **compte du PRC** » Le compte distinct du Programme de remplacement des chaudières créé par Centra en conformité avec la directive nº 20 figurant à l'ordonnance nº 99/07 de la Régie. ("FRP account")

« **Programme de remplacement des chaudières** » Le Programme de remplacement des chaudières mis en place par Centra en conformité avec l'ordonnance nº 99/07 de la Régie. ("Furnace Replacement Program")

15(2) Les règles qui suivent s'appliquent à compter du 1er avril 2020 :

a) aucuns fonds supplémentaires ne sont affectés au compte du PRC;

b) le solde résiduel du compte du PRC le 1er avril 2020 doit être utilisé pour couvrir le coût associé aux initiatives d'effacement de consommation de gaz naturel prévues dans un plan d'efficacité énergétique approuvé.

15(3) Il est entendu que le paragraphe (2) ne restreint pas le pouvoir de la Régie quant à l'attribution du solde résiduel aux différentes catégories de clients de Centra.

15(4) S'il est maintenu en vertu d'un plan d'efficacité énergétique, le Programme de remplacement des chaudières est administré par la Société et est financé conformément à l'article 18 de la *Loi*.

Entrée en vigueur

16(1) Le présent règlement, à l'exception de l'article 14, entre en vigueur à la date de son enregistrement sous le régime de la *Loi sur les textes législatifs et réglementaires.*

16(2) L'article 14 entre en vigueur le 1er avril 2020.

APPENDIX C: ORDER NO. 162/19, "PROCEDURAL ORDER IN RESPECT OF EFFICIENCY MANITOBA'S 2020/23 EFFICIENCY PLAN SUBMISSIONS

Order No. 162/19

PROCEDURAL ORDER IN RESPECT OF EFFICIENCY MANITOBA'S 2020/23 EFFICIENCY PLAN SUBMISSION

November 5, 2019

BEFORE: Robert Gabor, Q.C., Board Chair
Marilyn Kapitany, B.Sc., (Hon), M.Sc., Vice-Chair
Hugh Grant, PhD, Member
Irene Hamilton, Q.C., Member

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1.0 Executive Summary

On January 24, 2018, *The Efficiency Manitoba Act* (the "Act") came into force, establishing Efficiency Manitoba as a new provincial Crown Corporation. The mandate of Efficiency Manitoba includes implementing and supporting demand-side management initiatives to achieve savings in the consumption of electrical energy and natural gas in amounts prescribed by legislation.

As part of its mandate, Efficiency Manitoba is required to prepare an efficiency plan for an initial three-year period and for each three-year period thereafter. Efficiency Manitoba must submit each of its efficiency plans to the Public Utilities Board of Manitoba ("Board") for the Board's review and preparation of a report, with recommendations, to the minister as to whether the efficiency plan should be approved, approved with suggested amendments, or rejected.

Until Efficiency Manitoba begins delivering efficiency programs under the Plan, electric and natural gas demand-side management programming is provided through Manitoba Hydro and Centra Gas Manitoba Inc. ("Centra") Previously, this programming was delivered by Manitoba Hydro and Centra under the PowerSmart program. In 2016/17, Manitoba Hydro completed a 15-year plan for the delivery of demand-side management programs. Since 2016/17, Manitoba Hydro has prepared one-year updates to its 15-year plan.

On October 25, 2019, Efficiency Manitoba filed its first three-year efficiency plan, the 2020/21 to 2022/23 Efficiency Plan submission (the "Plan") with the Board, commencing the process of the Board's public review of the Plan.

Pursuant to the Efficiency Manitoba Regulation, the commencement date for the Plan is April 1, 2020. While the Regulation also requires that the Plan be submitted to the Board no later than six months before the commencement date (i.e. October 1, 2019). However, as detailed in a provincial government news release, the Plan was not filed until October

25, 2019 to facilitate review by the government of program delivery and the whole-of-government implications on summary budgeting.

Following the filing by Efficiency Manitoba of the Plan, the Board conducted a written Pre-Hearing Conference. The purposes of the Pre-Hearing Conference were to:

a. identify and approve appropriate Interveners who are to assist the Board in its review of the Plan;
b. identify the issues that are included in the scope of the hearing; and
c. finalize a process and timetable for the orderly exchange of evidence and the conduct of the oral public hearing.

The Board received written applications for Intervener status and written submissions on issues, process, and the timetable from the following:

i. Assembly of Manitoba Chiefs
ii. Consumers' Association of Canada (Manitoba) Inc. and Winnipeg Harvest (the "Consumers Coalition")
iii. Council of Canadians, Winnipeg Chapter
iv. Manitoba Industrial Power Users Group
v. Manitoba Keewatinowi Okimakanak

By this Order, the Board approves the Applications to Intervene by Assembly of Manitoba Chiefs, Consumers Coalition, Manitoba Industrial Power Users Group, and Manitoba Keewatinowi Okimakanak, all subject to working within the scope of issues that are approved by the Board.

Interveners seeking cost awards are now required, within 10 days of the issuance of this Order, to prepare and file their detailed cost estimates with the Board for review and comment by Board staff, pursuant to the process set out in the Board's Intervener Cost Policy as found on the Board's webpage for the Board's review of Efficiency Manitoba's 2020/23 Efficiency Plan submission.

The Board approves the issues as enumerated in the list, attached to this Order as Appendix A, as being in scope for the Plan review, while the issues enumerated in Appendix A as being deferred or out of scope will not form part of the review.

The timetable for the process steps is also approved and attached to this Order as Appendix B.

2.0 Procedural History

On October 25, 2019, Efficiency Manitoba filed its 2020/21 to 2022/23 Efficiency Plan submission with the Board.

The Board conducted a written Pre-Hearing Conference with Efficiency Manitoba and prospective Interveners. In their written Intervener Application forms and their written Pre-Hearing Conference submissions, the prospective Interveners provided submissions on their Applications for Intervention, indicated their recommended issues of primary consideration in the review of the Plan, and some identified possible witnesses for their proposed interventions. Furthermore, the Board reviewed the proposed timetable submitted by Efficiency Manitoba on October 30, 2019, as well as the November 4, 2019 response of Efficiency Manitoba to the Intervener Applications and procedural submissions.

Efficiency Manitoba and prospective Interveners provided written submissions respecting the scope of the Plan review process and the issues to be canvassed during the review. Finally, the Board considered a timetable for the orderly exchange of evidence and hearing.

The Board has also retained an Independent Expert Consultant, Daymark Energy Advisors, to assist the Board and parties in the review of the Plan.

3.0 Submissions Regarding Intervener Participation, Hearing Process, and Scope of Review

The following summarizes the submissions received by Efficiency Manitoba and prospective Interveners regarding Intervener participation, the hearing process, and the scope of review.

Assembly of Manitoba Chiefs

Assembly of Manitoba Chiefs is the political and advocacy coordinating body that represents 62 of 63 First Nations in Manitoba. Assembly of Manitoba Chiefs represents a diverse community of First Nations people under Treaties 1 through 6 and 10, who live throughout Manitoba, including the most rural, southerly and northern areas in Manitoba. All member First Nations of the Assembly of Manitoba Chiefs, the institutions associated with and operated by First Nations, and the Assembly of Manitoba Chiefs Secretariat are Manitoba Hydro ratepayers and rely on Manitoba Hydro for their electrical power. The Assembly of Manitoba Chiefs represents both residential and general service ratepayers, as well as First Nations and individuals living in remote communities, including First Nations and individuals with limited means and who may face housing insecurity and energy poverty.

Assembly of Manitoba Chiefs has previously intervened in applications before the Board, including in the Manitoba Hydro 2017/18 & 2018/19 General Rate Application, in which there was evidence on the disproportionate level of energy poverty facing First Nations people on-reserve. This issue is closely related to the legislated requirements of the Plan.

Assembly of Manitoba Chiefs intends to intervene on the following issues through an examination of the effect on First Nations customers, as distinct from the umbrella term “Indigenous” used in the Plan:

- Whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans, and specifically the accessibility of

the Plan to First Nations people within the context of affordability and energy poverty issues;

- The appropriateness of the methodologies used by Efficiency Manitoba to select or reject demand-side management initiatives;
- The benefits and cost-effectiveness of the initiatives proposed in the Plan;
- Whether the Plan adequately considers the interests of residential, commercial and industrial customers;
- The impact of the Plan on Rates and average customer bill amounts;
- 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;
- Consideration of non-energy benefits of electric and natural gas demand-side management portfolios;

Assembly of Manitoba Chiefs states that it will participate fully and actively in the proceedings, including testing evidence and conducting cross-examinations, if necessary. Assembly of Manitoba Chiefs intends to file expert evidence on First Nations issues in the Plan and proposes retaining a consultant from Willow Springs Strategic Solutions. Assembly of Manitoba Chiefs advises that it intends to work with other Interveners to minimize duplication as much as possible.

Assembly of Manitoba Chiefs intends to seek a cost award.

Consumers' Association of Canada (Manitoba) Inc. and Winnipeg Harvest ("Consumers Coalition")

The Consumers Coalition is comprised of the Consumers' Association of Canada (Manitoba) Inc. and Winnipeg Harvest. The Consumers Coalition states in its Intervener Application that the Consumers' Association of Canada (Manitoba) Inc is a volunteer, non-profit independent organization working to inform and empower consumers, and to represent the consumer interest in Manitoba. Formed in 1947, the organization is governed by a volunteer Board of Directors, elected annually at a general meeting of the

organization's membership. It is a branch of the national Consumers' Association of Canada, but is financially separate and separately incorporated. The organization's policy is guided by its understanding of generally accepted consumer rights.

Winnipeg Harvest is a non-profit, community-based organization committed to providing food to people who struggle to feed themselves and their families. It provides emergency food assistance to almost 64,000 people a month across Manitoba and shares food with more than 50 Manitoba communities through the Manitoba Association of Food Banks and through partnerships with nearly 400 agencies to distribute surplus food to hungry families all over Manitoba. Approximately 50% of its clients are in receipt of social assistance.

This prospective Intervener submits that both the Consumers Association of Canada (Manitoba) Inc. and Winnipeg Harvest have long-standing experience with matters relating to rate-setting across five industries and have been active participants in Manitoba Hydro rate-setting proceedings for a number of years, including on issues of demand-side management and bill affordability.

The Consumers Coalition submits that it represents the interests of Manitoba Hydro's largest customer class, that has over 500,000 Residential electric customers. It states in its Intervener Application that the Plan will be funded by Manitoba Hydro and its ratepayers. Energy efficiency initiatives directly affect residential customers by assisting them in meeting their energy needs through energy efficient measures. In addition, this prospective Intervener states that reduced domestic load requirements allow for reduced capital expenditures and increased energy available for export, which can lead to lower rates overall for Manitoba customers.

The Consumers Coalition seeks to intervene to protect the interests of residential consumers by examining the Plan and the extent to which engagement with Manitoba consumers informed the proposed Plan. It states that the efficiency plan that is approved will directly affect residential ratepayers through their ability to participate in efficiency programs and initiatives, as well as the rates they pay on their customer bill from Manitoba

Hydro or in the amount they pay in rent. Specifically, the Consumers Coalition states that it will test the following issues, which it recommends be included on the issues in scope for the proceeding:

- The approach taken by Efficiency Manitoba to develop its plan;
- An assessment of the reasonableness of the projected savings, including an assessment of the methodology used to determine the net savings;
- An examination of Efficiency Manitoba's proposed plan to reach the savings target;
- An analysis of Efficiency Manitoba's proposed evaluation framework;
- The cost effectiveness of programs, including an analysis of the inputs and methodology for calculating the cost effectiveness metrics used to assess Efficiency Manitoba's proposed plan;
- The Plan's impact on rates and average customer bill amounts and whether that impact is reasonable;
- The level of consumer engagement in developing the Plan;
- Compliance of Efficiency Manitoba with directions from government;
- Consumer choices available in the Plan and whether the range of choices is reasonable;
- Whether the Efficiency Manitoba administrative budget is reasonable and an examination of the allocation of EM's administration and/or overhead budget to gas and electricity customers; and
- An examination of the impact of decarbonization and electrification on the way Efficiency Manitoba savings goals are defined, and the role Efficiency Manitoba could/should play in supporting decarbonization and electrification

In its Intervener Application, the Consumers Coalition states that it intends to participate fully and actively. The Consumers Coalition intends to retain the services of expert consultants Mr. William Harper, Dr. Patricia Fitzpatrick, and Energy Futures Group. The Consumers Coalition has also discussed collaborating with Manitoba Keewatinowi Okimakanak to present a panel of ratepayers. The Consumers Coalition intends to seek a costs award.

The Consumers Coalition comments that the contemplated compressed timeline for the review of the Plan, with what it states is insufficient time for Interveners to prepare evidence, is concerning. It submits that there is a paucity of information in Efficiency Manitoba's filing, and that the compressed timeline will not allow for a meaningful process. The Consumers Coalition recommends that the Board request an extension of time from the provincial government for implementation of the efficiency plan beyond April 1, 2020. If that extension is not granted, the Consumers Coalition proposes that the draft timetable prepared by Efficiency Manitoba be amended.

The Consumers Coalition also recommends that Interveners, their technical experts, and their legal teams be granted access to confidential information, pursuant to a confidentiality agreement. Alternatively, if an Independent Expert Consultant is retained to review confidential information and produce a public report, parties should be entitled to examine the qualifications of the Independent Expert Consultant and the Independent Expert Consultant should be directed to seek input from parties on areas of inquiry.

Council of Canadians (Winnipeg Chapter)

The Council of Canadians (Winnipeg Chapter) filed its Intervener Application form on October 31, 2019. This prospective Intervener provided additional submissions on its proposed intervention in written correspondence filed with the Board in November 4 and 5, 2019

The Council of Canadians is a federal not-for-profit corporation, which has within its mandate participating in regulatory proceedings involving energy use in Canada, particularly in the context of climate change mitigation. The Winnipeg Chapter is an unincorporated association recognized by the by-laws and policy guidelines of the Council of Canadians and is a focal point for more than 600 Council of Canadians supporters in Manitoba. The Winnipeg Chapter or its supporters have participated in two regulatory proceedings in recent years, both before the National Energy Board.

In its Intervener Application, the Council of Canadians (Winnipeg Chapter) states that it is one of very few non-governmental organizations in Manitoba that draws significant support from across the province. According to this prospective Intervener, the mandate of Efficiency Manitoba is of critical concern to all of its supporters as Efficiency Manitoba is a significant part of the Province's stated intentions to address climate change mitigation. Further, this prospective Intervener states its view that the time available to make material progress on climate change is short and plans to incentivise and support reductions in greenhouse gas emissions and encourage associated energy transitions away from fossil fuel use cannot be experimental or taken in isolation from other regulated entities.

The Council of Canadians (Winnipeg Chapter) intends to intervene in respect of the following issues:

1) The planning linkages between Efficiency Manitoba, Manitoba Hydro and Centra Gas;

2) The appropriateness of incentive structures that continue to support growth in or continued use of natural gas in residential and commercial heating;

3) How success in reducing greenhouse gas emissions will be assessed, particularly in respect of the differences between reducing actual aggregate emissions and aggregate emissions referencing "business-as-usual" projections;

4) Testing the reasonableness of methodology used to project net savings including participant and Manitoba Hydro benefits;

5) Testing the reasonableness of methodology used to project the cost-effectiveness of electric and natural gas demand-side management program bundles and portfolio;

6) The reasonableness of Efficiency Manitoba's overhead budget;

7) Consideration of non-energy benefits of electric and natural gas demand-side management portfolios, including environmental and economic development;

8) Compliance of Efficiency Manitoba with directions from government through mandate and framework letters;

9) Cost effectiveness of electric and natural gas demand-side management program bundles and portfolio;

10) Questioning the demand-side management evaluation framework and plan proposed by Efficiency Manitoba, in contrast to alternative evaluation frameworks and scenarios that could be used to determine near-term and cumulative impact;

11) Consideration of new and emerging technologies that may be included in a future efficiency plan; and

12) The provincial Climate Plan and broader provincial policies on energy strategy as part of an analysis of the reductions in greenhouse gas emissions in Manitoba expected to result from the initiatives proposed.

The Council of Canadians (Winnipeg Chapter) intends to participate fully, including attending hearings, participating in the testing of evidence of all parties and cross-examination of witnesses, and filing expert evidence. This Intervener proposes to retain one expert witness, Dennis LeNeveu of LeNeveu Simulations Inc, to provide evidence on the greenhouse gas effects of Efficiency Manitoba's Plan in the context of interfacing with the Manitoba Green Plan; national climate change mitigation strategies; and Board-regulated Manitoba Hydro plans and Centra Gas plans, particularly with regard to transition away from fossil fuels.

The Council of Canadians (Winnipeg Chapter) intends to seek an award of costs.

Manitoba Industrial Power Users Group

Manitoba Industrial Power Users Group is an association of companies which are substantial users of power in the General Service Large rate classes (including all three voltage classes). Manitoba Industrial Power Users Group members also include natural gas rate users in rate classes encompassing High Volume Firm, Main Line Firm, Large General Service, Interruptible, and Special Contract service. Collectively, Manitoba Hydro and Centra Gas customers within the industrial sector account for more than 35% of Manitoba's domestic electric consumption and nearly 40% of natural gas consumption. Manitoba Industrial Power Users Group has intervened in nearly every Manitoba Hydro Application since the late 1980s and a subset of its members have also intervened in the most recent Centra Gas General Rate Application.

In its Intervener Application, Manitoba Industrial Power Users Group states that it intends to focus its intervention on the mandate of ensuring energy rates that are fair, reasonable, and cost-based. Specifically, Manitoba Industrial Power Users Group intends to focus on the reasonableness of the Efficiency Manitoba Plan and the effect of the Plan on rates to be charged by Manitoba Hydro. The reasonableness of the Plan is also relevant as savings targets are determined as a percentage of prior year consumption. As the industrial sector is a major consumer of energy in Manitoba, a material portion of the annual savings targets will be expected to come from the industrial sector generally and Manitoba Industrial Power Users Group members specifically. Manitoba Industrial Power Users Group intends to test the achievability of the Plan within the industrial sector and the cost-effectiveness of the Plan overall.

Manitoba Industrial Power Users Group states that it intends to address the following issues in its intervention:

- The framework and mandate for Efficiency Manitoba's activities and an appropriate approach to regulatory review;
- The reasonableness and achievability of the Plan, the energy savings targets encompassed within the Plan and the long-term implications;

- Whether the Plan adequately considers the interests and priorities of industrial customers;
- The benefits, cost-effectiveness and rate impacts of programming outlined in the Plan;
- Whether the cost-effectiveness tests have been correctly applied and the value of conserved energy has been appropriately determined;
- Whether the cost-effectiveness tests have been properly considered taking into account the timing and duration of savings;
- Alternative plans and considerations for the three-year period given relevant near and long-term considerations;
- The appropriateness of the methodologies used by Efficiency Manitoba to select or reject efficiency initiatives and implementation timing;
- Evaluating Efficiency Manitoba's performance, justification, and proposed metrics for achieving the objectives and outcomes of the Plan;
- The impact of emerging and evolving energy technologies on the short and long-term content of the Plan.

Manitoba Industrial Power Users Group intends to participate fulling in the proceeding, while coordinating with the Consumers Coalition and others to identify areas of mutual concern and avoid duplication. Manitoba Industrial Power Users Group proposes to retain Mr. Dale Friesen, Mr. Patrick Bowman, and Ms. Melissa Davies of InterGroup Consultants Ltd. as an expert witnesses and consultants.

Manitoba Industrial Power Users Group intends to seek a costs award.

In its written process submissions, Manitoba Industrial Power Users Group expresses concern over the anticipated compressed schedule for the review of the Plan and that this may compromise the ability of the Board and Interveners to conduct a thorough and meaningful review. This prospective Intervener suggests that the implementation date be delayed by at least a month. If this is not possible, Manitoba Industrial Power Users Group proposes a schedule for the completion of the Board's report.

Manitoba Industrial Power Users Group also states that Efficiency Manitoba's proposed scope for the review divides critical elements of the hearing into two separate proceedings, with the review of Efficiency Manitoba efficiency plans separated from reviews of Manitoba Hydro rate applications despite the interrelationship and interdependence of elements of these reviews. Manitoba Industrial Power Users Group notes particular details that it submits are absent from the filing including: load forecast information by sector; projected annual savings, costs and representative load profiles; expectations for additional participant investment; marginal value information for sector programs; and time-of-use and seasonal value of capacity and energy.

Manitoba Keewatinowi Okimakinak Inc. ("MKO")

MKO represents more than 65,000 treaty First Nation citizens in northern Manitoba. It has operated for more than 35 years as a non-profit advocacy organization. MKO explores ways to strengthen and promote the interests of First Nations in northern Manitoba with respect to all areas that affect the lives of northern First Nations' citizens.

This prospective Intervener states that all citizens of MKO First Nations, the MKO First Nation government facilities, and all entities operated by MKO First Nations receive electrical service solely from Manitoba Hydro – including all four Diesel communities - and may benefit from increased energy efficiency efforts. MKO states further that it is seeking to intervene to ensure that the direct interests of the MKO First Nations, entities, and citizens are properly considered, and appropriately factored into the Plan. MKO's Intervener Application states that the majority of MKO citizens are in the low-income category and the general service customers represented by MKO have limited, if any ability to absorb any additional costs.

MKO has intervened in previous regulatory matters before the Board and other decision-makers, including in matters relating to Manitoba Hydro. In this proceeding, MKO states that it intends to address the following issues as they specifically relate to First Nation consumers in northern Manitoba:

- Reasonableness of projected electric net savings to meet prescribed savings targets, specifically the reasonableness of the methodology to project net savings, electric net savings compared to savings targets, appropriateness of the methods to select or reject demand-side management initiatives, and consideration of new and emerging technologies;
- Cost-effectiveness of electric demand-side management program bundles and portfolio, specifically the reasonableness of the methodology to evaluate cost effectiveness, rate impact and customer bill impacts (limited to lifecycle revenue impact analysis), and reasonableness of Efficiency Manitoba's overhead budget (limited to the 2020/21 to 2022/23 planning horizon);
- Accessibility of the Plan to Manitobans (including to First Nations and First Nation citizens in Manitoba, including consideration of interests of First Nation On-Reserve Residential, commercial, and industrial customers);
- Consideration of non-energy benefits of electric demand-side management portfolios;
- Compliance of Efficiency Manitoba with directions from government;
- Consideration of the evaluation framework and plan proposed by Efficiency Manitoba;
- Consideration of the appropriate percentage of the demand-side management budget for low income and hard to reach customers, with specific consideration of the budget for First Nations customers and customers living on-reserve (including those serviced by diesel);
- Consideration of barriers to demand-side management uptake on-reserve; and
- Consideration of the engagement strategy with respect to low income and hard to reach customers, with specific consideration of the engagement strategy with respect to First Nation customers and customers living on-reserve (including those serviced by diesel).

MKO states that it intends to participate by testing Efficiency Manitoba's evidence and that of other Interveners through the Information Request process, cross-examination,

and argument. MKO does not anticipate submitting evidence or calling expert witnesses, and anticipates coordinating with other Interveners to avoid duplication. In its Intervener Application, MKO notes that it has had preliminary discussions with the Consumers Coalition regarding presenting a panel of ratepayers to provide evidence regarding their experiences with energy efficiency and demand-side management.

MKO intends to seek an award of costs for its participation.

Efficiency Manitoba

On October 30, 2019, Efficiency Manitoba provided its proposed timetable for the exchange of evidence and review process steps.

On November 4, 2019, Efficiency Manitoba provided its comments on the Intervener applications and issues raised by the prospective Interveners. Its comments are summarized below:

- Efficiency Manitoba does not object to the Board granting Intervener status to the Consumers Coalition, the Manitoba Industrial Power Users Group, the Assembly of Manitoba Chiefs and Manitoba Keewatinowi Okimakanak;
- Efficiency Manitoba recommends that the Council of Canadians (Winnipeg Chapter) not be approved for Intervener status as this prospective Intervener represents a group that is already represented by other Interveners and seeks to intervene on issues that are out of scope for this proceeding;
- Efficiency Manitoba expresses concern about the scope of the intended interventions and the number of experts being proposed by the parties. It recommends that the scope of the public review inform the requirement for expert evidence from the parties, and provides specific responses to the matters sought by the prospective Interveners to be included in the scope of the proceeding;
- Efficiency Manitoba is not able to provide evidence on date forecasts and analyses such as electricity and natural gas load forecasts, marginal values of electricity and

natural gas, and the resource planning process undertaken by Manitoba Hydro, as these matters are in the exclusive domain of Manitoba Hydro and Centra Gas;

- Decarbonization and electrification are not in-scope in this proceeding because the Regulation excludes from the review matters including the electrification of transportation and fuel switching between fossil fuels (other than natural gas) and electricity;
- Matters such as bill affordability and energy burden are broad topics that encompass many factors beyond the provision of energy efficiency measures and as such, in and of themselves, these matters ought to be out of scope. As well, the Board is explicitly directed in the Act and Regulation to not consider socio-economic factors in its review; and
- Efficiency Manitoba recognizes that the timelines are challenging for the review, but notes that the Regulation requires the commencement of the Plan on April 1, 2020.

4.0 Board Findings

Intervener Status and Intervener Costs

Interveners, through their active efforts, are to assist the Board in the hearing process, including in its understanding of the issues that are determined to be within the scope of the Board's review of the Plan.

The Board denies the Application for Intervener status by Council of Canadians (Winnipeg Chapter). In determining whether intervention status is the appropriate method of participation for a specific Party, the Board considers, for purposes of regulatory efficiency, whether the proposed intervener represents the interests of a group or entity that are not otherwise represented on issues that are within the scope of this hearing. Other Interveners, including the Consumers Coalition, intend to intervene on the matters, and to represent the interests, that the Council of Canadians (Winnipeg Chapter) has identified. Moreover, the Council of Canadians (Winnipeg Chapter) provided limited information in its Application and submissions about the group, entities, or interests that it represents and its mandate. The Board is unable to approve an application for Intervener status without complete information about the applicant and the interests the applicant represents. The Board encourages the Council of Canadians (Winnipeg Chapter) to consider registering to make a public presentation.

The Board has considered the remaining Intervener applications that were submitted in the written Pre-Hearing Conference process. Subject to the condition that Interveners are to work within the scope approved by the Board, as enumerated at Appendix "A" of this Order, the Board approves separate intervener status for each of:

1. Assembly of Manitoba Chiefs
2. Consumers Coalition
3. Manitoba Keewatinowi Okimakanak
4. Manitoba Industrial Power Users Group

All Interveners are to collaborate on common issues and avoid duplication. Failure to avoid duplication will have cost consequences.

Should the Consumers Coalition and Manitoba Keewatinowi Okimakanak determine that they intend to present a ratepayers panel, that request is to be made in writing to the Board by the earlier of December 16, 2019, the date of the second Pre-Hearing Conference, or any deadline established by the Board for the filing of Intervener written submissions on the matters to be addressed at the second Pre-Hearing Conference.

Eligibility for cost awards will be governed by the Board's Intervener Costs Policy, available on the Board's website for the Efficiency Manitoba proceeding. Costs shall be awarded at the sole discretion of the Board following the conclusion of the review proceeding, subject to the Board's approval of a request for Advance of Funds where the eligibility requirements are met. Interveners who intend to seek costs for their participation in the review of the Plan are to, within 10 days of the issuance of this Order, submit their detailed cost estimates for their interventions, including consultants and expert witnesses. Interveners are to use the fillable Excel spreadsheet available on the Board's website for preparing and filing cost estimates and applications for cost awards. Cost estimates that are incomplete or prepared improperly will be returned to the Intervener.

The filing of Intervener cost estimates does not guarantee or disqualify an Intervener from eligibility for a cost award. Any comments provided by Board staff on Intervener cost estimates are not binding on the Intervener or the Board. All cost awards, whether an Advance of Funds or a final costs award, are in the sole discretion of the Board and all applications for cost awards will be considered by the Board in accordance with the criteria set out in Section 3.0 of the Intervener Costs Policy.

Should any approved Intervener seeking an award of costs determine that its scope of participation in the proceeding or its final cost application will deviate or differ materially from its cost estimate, the Intervener is to notify the Board staff forthwith. Such deviations will be considered by the Board after the hearing when it evaluates the contributions made by interveners.

Members of the public are able to provide comments on the Plan through the public presentation process. Presentations may be made in writing through submitting comments on the Board's website, as well as in person through registering with the Board to give an oral public presentation. The registration deadline is Friday, November 29, 2019.

Scope of the Hearing

The Board considered the submissions provided by Interveners and Efficiency Manitoba on the scope of issues for the review proceeding and finds that the issues enumerated in the Issues List attached to this Order as Appendix "A" are in scope in the proceeding. The issues enumerated in Appendix "A" as being deferred and out of scope will not be considered in the review.

Subject to the requirement that Interveners collaborate and avoid duplication, each party granted Intervener status is approved to participate on the issues it has identified as relevant and that are in scope in the proceeding. Intervener experts are to work within and provide evidence on only the matters that are identified as in scope in the proceeding. The evidence filed by experts retained by Interveners must assist the Board on the issues before the Board. Failure of an Intervener expert to follow these requirements in their evidence will have cost consequences for the Intervener that retained that expert witness.

Hearing Process and Timetable

The Board considered the submissions provided by Intervener applicants and Efficiency Manitoba on the appropriate hearing process and timetable for the review of the Plan. Based on those submissions, the Board establishes the timetable for the review of the Plan as contained in Appendix "B" to this Order.

The Board reviewed the concerns regarding the timetable outlined in the submissions of the Consumers Coalition and Manitoba Industrial Power Users Group. While the Board understands the issues identified with a compressed timetable for the review of the Plan, the time period available for the review is a function of the Regulation, which has an April

1, 2020 implementation date for the approved Plan. To meet that implementation date, the Board must have an opportunity to prepare its report containing its recommendation in sufficient time for consideration by the Minister. With an October 25, 2019 filing date, a compressed timetable is simply a reality for all parties and the Board. While these two Interveners recommended that the Board request from government an extension of the implementation date, the implementation date is prescribed by Regulation and the Board's timetable must be consistent with the mandated date.

The timetable established by the Board is intended to achieve a fair and thorough process, with all necessary testing of the evidence and information filed. Although certain process steps that have been scheduled in other Board proceedings, such as a second round of Information Requests, are not included in the timetable, the Board has set 14 oral hearing days. The number of oral hearing days will allow for further testing of evidence through cross-examinations and, where required, undertakings for the filing of further evidence.

The Board encourages all parties to work cooperatively to resolve procedural issues that arise during the course of the proceeding, including where Information Requests are objected to or require clarification.

Parties must limit their Information Requests to seeking information that is relevant to the issues that are in scope in the proceeding and that will assist the Board in its review process. There will be cost consequences for any Intervener that does asks irrelevant, duplicative, or unnecessary Information Requests.

5.0 IT IS THEREFORE ORDERED THAT:

1. Intervener status for the review of Efficiency Manitoba's 2020/23 Efficiency Plan submission **BE AND IS HEREBY APPROVED FOR:**

    a. Assembly of Manitoba Chiefs;

    b. Consumers Coalition;

    c. Manitoba Industrial Power Users Group; and

    d. Manitoba Keewatinowi Okimakanak

2. The Issues enumerated in Appendix "A" to this Order as being within the scope of the review of Efficiency Manitoba's 2020/21 to 2022/23 Efficiency Plan submission are within the scope of the review and all issues enumerated as being deferred and out of scope are not within the scope of the review;

3. The Timetable for the orderly exchange of evidence in the review of Efficiency Manitoba's 2020/23 Efficiency Plan submission is attached to this Order as Appendix "B".

Board decisions may be appealed in accordance with the provisions of Section 58 of *The Public Utilities Board Act*, or reviewed in accordance with Section 36 of the Board's Rules of Practice and Procedure. The Board's Rules may be viewed on the Board's website at www.pubmanitoba.ca

THE PUBLIC UTILITIES BOARD

"Robert Gabor, Q.C."
Chair

"Darren Christle, PhD, CCLP, P.Log., MCIT"
Secretary

Certified a true copy of Order No. 162/19 issued by The Public Utilities Board

Secretary

Appendix A: Issues List

The following issues are considered to be within the scope of the Board's review of the Efficiency Manitoba 2020/23 Efficiency Plan:

1. Reasonableness of projected electric and natural gas net savings to meet prescribed saving targets:
    a. Reasonableness of methodology to project net savings including participant and Manitoba Hydro benefits
    b. Electric and natural gas net savings compared to savings targets (both near-term and cumulative)
    c. Appropriateness of the methods to select or reject demand-side management initiatives
    d. Consideration of new and emerging technologies that may be included in a future Efficiency Plan
2. Cost-effectiveness of electric and natural gas demand-side management program bundles and portfolio:
    a. Reasonableness of methodology to evaluate cost-effectiveness
    b. Comparison of levelized cost to Efficiency Manitoba of electricity energy net savings to levelized marginal value to Manitoba Hydro – limited to the marginal value as determined by Manitoba Hydro in its resource planning process
    c. Comparison of levelized cost to Efficiency Manitoba of natural gas net savings to levelized marginal value to Centra Gas – limited to the marginal value as determined by Centra Gas
    d. Rate impact and customer bill impacts for both participants and non participants and whether the bill impacts are reasonable - limited to lifecycle revenue impact analysis (one-time equivalent change in rates)
    e. Reasonableness of Efficiency Manitoba's overhead budget, including the 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

f. Consideration of the total resource costs of the initiatives proposed in the Efficiency Plan

3. Accessibility of Efficiency Plan to Manitobans, including consideration of:
   a. the interests of residential, commercial and industrial customers, as well as hard-to-reach customers who may have disabilities or be Indigenous, rural, newcomers, renters, customers living in multi-unit residences, or older customers, including consideration of customer investments,
   b. barriers to demand-side management uptake for Indigenous customers, including First Nations customers, and
   c. the engagement strategy for low income and hard-to-reach customers, including First Nations customers

4. Consideration of the appropriate percentage of the demand-side management budget for income qualified and hard-to-reach customers, including specifically for Indigenous and First Nations customers, and whether, if practical, at least 5% of the demand-side management budget is set aside for these customers

5. Consideration of non-energy benefits of electric and natural gas demand-side management portfolios including environmental, economic development (including use of private sector and non-government organizations to deliver demand-side management initiatives)
6. Compliance of Efficiency Manitoba with directions from government through mandate and framework letters
7. Consideration of the demand-side management evaluation framework and plan proposed by Efficiency Manitoba
8. The mandate for Efficiency Manitoba's activities and recommendations to government regarding net savings targets
9. Marketing of, and intake of participating customers for, loans or financing programs related to energy efficiency and energy conservation

10. Comparison of the costs and savings forecasts and achievements of past Manitoba Hydro or Centra Gas programs and budgets to Efficiency Manitoba's plan
11. Manitoba Hydro distributed generation (solar or other) net metering policies or prices relating to marketing of, and intake of participating customers for, distributed generation (solar or other) net metering polices or prices – limited to their impact on the take-up of distributed generation by customers

The following issues will be deferred for consideration until the PUB review of the next (2024/26) Efficiency Manitoba Efficiency Plan:

1. Plans to address any existing saving targets shortfalls
2. Cost-effectiveness review of any demand-side management initiatives in excess of prescribed savings targets, unless it is determined that the 2020/21 to 2022/23 Efficiency Plan includes initiatives that exceed the prescribed savings targets in which case the cost-effectiveness of these initiatives shall be included within the scope of the review
3. Reasonableness of Efficiency Manitoba's retrospective performance assessments

The following issues are considered to be out of scope of the PUB review of the 2020/23 Efficiency Manitoba Efficiency Plan:

1. Matters that are not part of the prescribed mandate of Efficiency Manitoba or part of the PUB review the Efficiency Plan:
    a. Provincial energy strategy
    b. Made in Manitoba Climate and Green Plan
    c. Electrical demand response programming
    d. Potable water or fossil fuel (other than natural gas) demand-side management programming
    e. Electric vehicles
    f. Manitoba Hydro eligibility criteria, interest rates and monthly charges related to energy efficiency/energy conservation loan or financing programs

g. Affordable Energy Fund specific to analysis or details of historical Manitoba Hydro reports

2. Matters that are either part of Manitoba Hydro's or Centra Gas' mandate or considered by the Board as part of Manitoba Hydro or Centra Gas general rate applications in the normal course:
    a. Manitoba Hydro's and Centra Gas' integrated resource planning and derivation of marginal values and avoided costs in accordance with resource planning processes (electric and natural gas)
    b. Derivation of electric load forecast or natural gas volume forecast – including analysis of Manitoba Hydro's end-use surveys or other load forecasting methodologies used by Manitoba Hydro
    c. Impact of the Efficiency Plan on the electric and natural gas integrated financial forecasts and revenue requirements as well as the treatment of demand-side management costs and benefits in the cost of service studies
    d. Efficiency Manitoba transitional budgets and activities for 2018/19 and 2019/20
    e. Testing and evaluating Manitoba Hydro distributed generation (solar or other) net metering policies or prices
    f. Customer bill affordability including accounts in arrears and customer payment information

Appendix B: Timetable

Item	Date
Efficiency Manitoba Filing	Friday, October 25, 2019
Intervener Applications and Pre-Hearing Conference Submissions	Wednesday, October 31, 2019 at 12:00 pm
Efficiency Manitoba Response to Intervener Applications and Pre-Hearing Conference Submissions	Monday, November 4, 2019 at 12:00 pm
Information Requests to Efficiency Manitoba	Tuesday, November 12, 2019 at noon
Efficiency Manitoba Responses to Information Requests	Wednesday, November 27, 2019
Deadline for Public Presentation Registrations	Friday, November 29, 2019
Intervener and Independent Expert Consultant ("IEC") Evidence	Monday, December 9, 2019
Information Requests on Intervener and IEC Evidence	Friday, December 13, 2019
Pre-Hearing Conference #2 to Identify Issues for Oral Evidence	Monday, December 16, 2019
Intervener and IEC Responses to Information Requests	Friday, December 20, 2019
Efficiency Manitoba Rebuttal Evidence	Thursday, January 2, 2020
Public Oral Hearing*	Week of January 6, 2020 Week of January 13, 2020 January 20, 24, 27, and 28, 2020

*dates and days of the week to be finalized at PHC #2

APPENDIX D: DAYMARK ENERGY ADVISORS' SCOPE OF WORK

Efficiency Manitoba's Initial 3-Year Efficiency Plan

Independent Expert Scope of Work

Demand Side Management and Energy Efficiency

1. Assess the documentation publicly filed with The Public Utilities Board in its review of Efficiency Manitoba's initial 3-year Efficiency Plan as well as any additional relevant information either requested in support of the filed information or that is claimed to be confidential pursuant to the Board's Rules of Practice and Procedure.

2. Assess whether and the extent to which Efficiency Manitoba's initial 3-year Efficiency Plan meets the mandate and requirements of The Efficiency Manitoba Act and the Efficiency Manitoba Regulation 119/2019, including:

    a) Whether there is a reasonable expectation that the Efficiency Plan will deliver net savings that meet the legislated electrical energy and natural gas savings targets;

    b) Identification of the benefits of the initiatives in the Efficiency Plan;

    c) Evaluation of the cost-effectiveness of the initiatives in the Efficiency Plan based on the cost-effectiveness tests set out in the Regulation;

    d) Evaluation of the cost-effectiveness of the initiatives in the Efficiency Plan based on cost-effectiveness tests commonly used to evaluate Demand Side Management initiatives;

    e) Whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans. In this context, the Efficiency Plan should include initiatives applicable to all geographic regions of the Province as well as all customer segments: residential, commercial, and industrial;

    f) Whether the savings targets should be increased or decreased based on cost effectiveness or other considerations; and

    g) Whether the mechanisms proposed by Efficiency Manitoba to track DSM savings in support of an independent assessment report will provide an accurate portrayal of the DSM savings.

3. Provide a report to be placed on the public record that provides your assessments and supporting analysis.

4. Respond to information requests with respect to the content of your report.

5. Upon prior written approval by The Public Utilities Board, address any other issues that may be identified.

6. Be available for cross-examination of the contents of your report during the month of January 2020.