
FINAL WRITTEN SUBMISSION

EFFICIENCY MANITOBA

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SECTION A - Leading the Way. A New Organization. A New Approach.

1. Efficiency Manitoba is proud of the 2020/23 Efficiency Plan ("the Plan") that it has presented for review by the Public Utilities Board ("the PUB") as part of these public proceedings.
2. Efficiency Manitoba opened its doors with its first employee in January of 2019 with a monumental task before it. The new Crown Corporation was expected to develop an Efficiency Plan for demand-side management initiatives that achieved aggressive savings targets while providing accessible programming to all Manitobans. Efficiency Manitoba has worked very diligently throughout this process and has a plan in place so that it can hit the ground running on April 1, 2020.
3. Efficiency Manitoba is a new organization with a new approach that takes a fresh look at energy efficiency and demand-side management. The Plan includes ten (10) new programs to be implemented across customer segments. The Plan also includes over thirty (30) technology additions or other enhancements to existing programs.



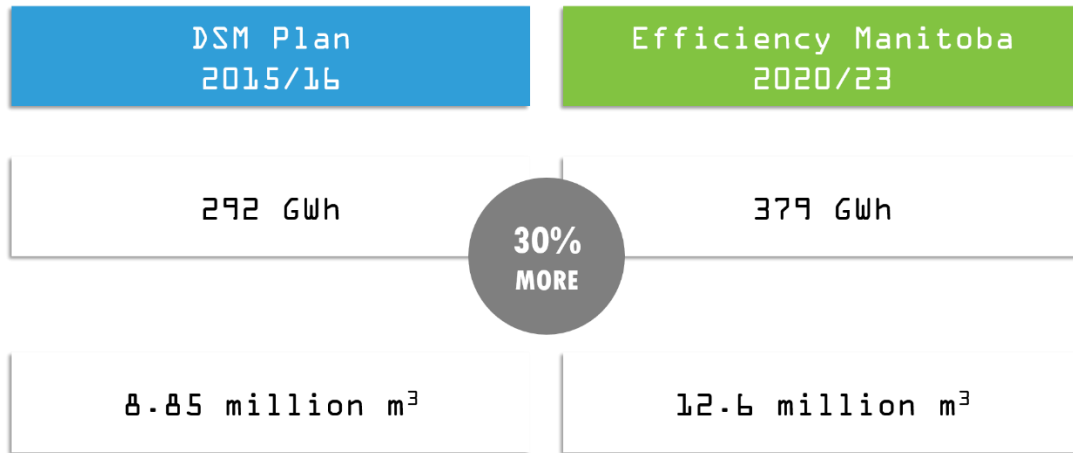
4. Efficiency Manitoba has set the following strategic goals:
 - a. Achieving excellence in its programs and services;
 - b. Creating a solid foundation to build a successful organization;
 - c. Building and sustaining meaningful partnerships with a customer focus; and
 - d. Transforming attitudes towards energy efficiency.
5. Efficiency Manitoba prioritizes customer engagement, innovation and continuous improvement and has presented an Efficiency Plan that has significant flexibility to allow Efficiency Manitoba to respond to actual market and participation rates, to capitalize on emerging opportunities and technologies and to maximize energy savings in Manitoba in the course of implementation.

6. This Plan is not simply business as usual. Efficiency Manitoba set its programming portfolio with a view to meeting all of its requirements and providing a balanced plan – costs, savings and budget levels are only some of the important considerations that were factored into the portfolio selection process.
7. Efficiency Manitoba has set a Plan that builds on existing energy efficiency programming that presents ongoing value for Manitobans. The Plan also provides new programs that have real potential to generate significant energy savings for Manitobans.
8. The Plan that has been presented by Efficiency Manitoba sets the foundation to achieve aggressive savings targets and reduce Manitoba's electricity and natural gas consumption. The portfolio achieves the requirement of cost-effectiveness. By statute, cost-effectiveness must be met at the portfolio level. While a limited number of measures within bundles may not be as cost-effective as others, or arguably are not cost-effective, those measures serve an important purpose in meeting Efficiency Manitoba's overall regulatory obligations and mandate. Cost-effectiveness is not and should not be the only consideration in program selection.
9. The Plan creates programs for as many Manitobans as possible to participate. Accessibility is a key feature of the Plan. Efficiency Manitoba does all of this at lower costs than previous demand-side management plans.

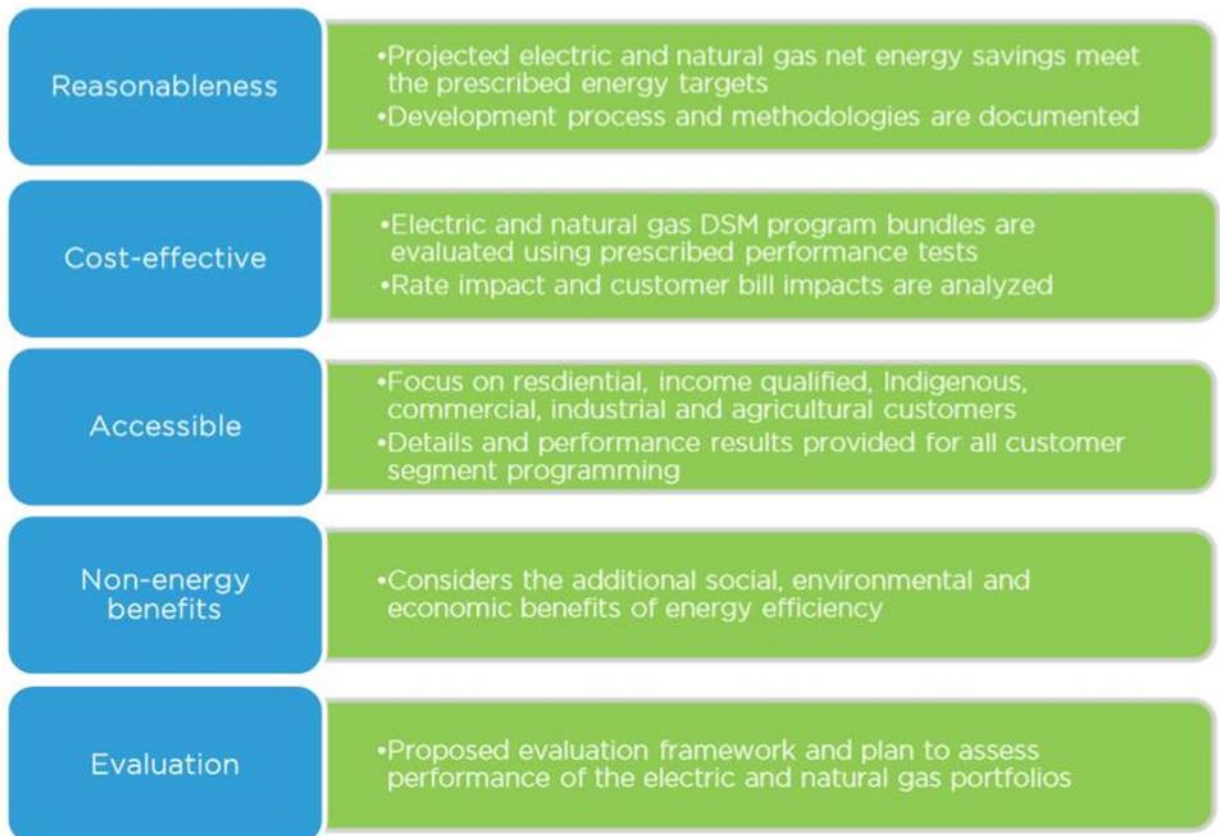
DSM Plan 2015/16		Efficiency Manitoba Annual Average 2020/23 Efficiency Plan	
\$49,329,000	INCENTIVE COSTS	\$45,247,000	8% ↓
\$9,927,000	PROGRAM COSTS	\$13,765,000	39% ↑
\$14,949,000	STAFF COSTS	\$9,375,000	37% ↓
\$2,190,000	OVERHEAD COSTS	\$1,495,000	32% ↓
\$76,396,000	TOTAL COSTS	\$69,881,000	9% ↓

10. While Efficiency Manitoba is a new Crown Corporation, it is not starting from scratch. In fact, Efficiency Manitoba has the benefit of 30 years of demand-side management experience as a result of the support it has received and expects to continue to receive from Manitoba Hydro pursuant to *The Efficiency Manitoba Act* which mandates this support throughout the transition of responsibility for DSM and ongoing energy efficiency programs from Manitoba Hydro. That support puts Efficiency Manitoba in a unique position as a new organization with established infrastructure – experienced staff, systems, transitioned programming to name only a few – significantly reduces risks to implementation that would otherwise face a new DSM Program Administrator.
11. The Plan results in impressive energy consumption savings. As outlined in Efficiency Manitoba's evidence in this proceeding and the Plan, energy consumption savings are

anticipated to achieve 379 GWh for electric savings and 12.6 million m³ for natural gas savings. That is 30% more savings on the electric side and 42% more savings on the natural gas side over what was achieved by Manitoba Hydro in 2015/2016 (292 GWh for electric and 8.85 million m³) at much lower costs:



12. Efficiency Manitoba's portfolio of programming is reasonable, cost-effective, accessible, takes into account non-energy benefits, and has an evaluation framework to assess performance.

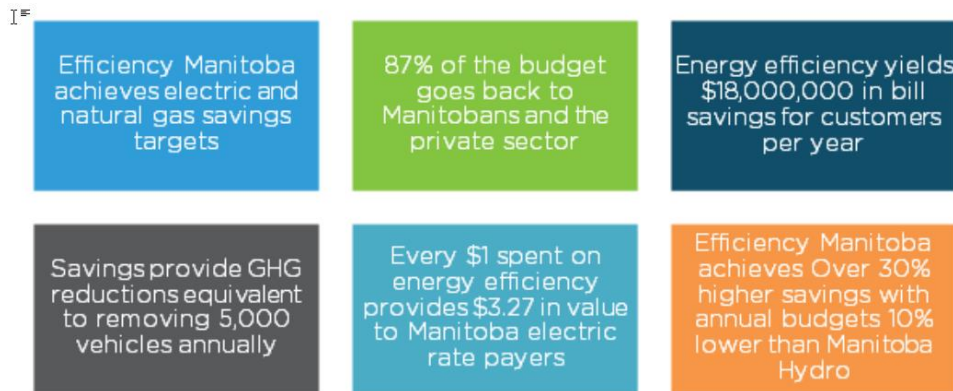


- 13. The Plan is anticipated to achieve annual bill savings for participating customers across all customer segments in the amount of \$14.9 million dollars for electric rate payers and \$3.0 million dollars for natural gas ratepayers.
- 14. All Manitobans benefit from energy efficiency and Efficiency Manitoba has demonstrated its commitment to working with the PUB, Intervenors and others to ensure the implementation of the best Efficiency Plan for Manitoba and Manitobans.

SECTION B - Public Utilities Board Review Process and Highlights for Consideration

- 15. Efficiency Manitoba has submitted its Efficiency Plan for review by the PUB in accordance with the requirements of *The Efficiency Manitoba Act* ("the Act") and *The Efficiency Manitoba Regulations* ("The Regulations").
- 16. Efficiency Manitoba has testified as part of these proceedings to the fact that it has embraced the PUB process. Efficiency Manitoba views this hearing as an opportunity: (i) for a detailed discussion of complex considerations regarding the Efficiency Plan; (ii) for public participation regarding the Efficiency Plan and its content, (iii) for feedback concerning its Efficiency Plan, and (iv) to demonstrate Efficiency Manitoba's commitment to openness and transparency in recognition that these principles are fundamental to the implementation of a successful Efficiency Plan
- 17. As part of the review process, the PUB can approve the Efficiency Plan, approve it with suggested amendments, or reject the Efficiency Plan. Efficiency Manitoba respectfully submits that any rejection of the Plan would be a significant loss of opportunity to achieve savings, reduce energy consumption and defer other Efficiency Plan achievables.
- 18. Efficiency Manitoba requests that the PUB approve the Efficiency Plan as filed as it meets the mandate of the Act and delivers key outcomes.

KEY OUTCOMES OF THE EFFICIENCY MANITOBA 2020/23 EFFICIENCY PLAN



- 19. While Efficiency Manitoba acknowledges the value of previous DSM programming in Manitoba, this Plan is different: It harnesses new measures; new ideas; and new go-to-market strategies recommended by Manitoba customers, industry and expert advisors.

20. The Plan incorporates and builds upon transitioned Manitoba Hydro programming that has been determined to provide continued energy efficiency savings for Manitobans. It also supports flexibility and innovation in energy efficiency, setting an Enabling Strategies budget that supports research and development/pilot programming for emerging opportunities that are at an early stage, and an Emerging Technologies budget that moves forward technologies that are reasonably at the past pilot stage but face barriers to implementation that need to be explored further— such as solar and bio-mass and customer cited bio-mass technologies support under the current Plan.

21. One of the most important features of the Plan that cannot be understated, and which has been highlighted by issues raised in the course of these proceedings is the flexibility of the Plan. Efficiency Manitoba stated during its evidence that:

The key to our continuous improvement strategy will be the ability to be both nimble and flexible. Flexibility is crucial to Efficiency Manitoba to deliver on its mandate."

Page 176 of the Transcript, Lines 11 to14

22. Efficiency Manitoba has room within its Plan – as it has been presented before the PUB and without amendment - to capitalize on customer participation, deeper engagement with customers, technology development, and emerging opportunities.

23. The value of the Plan, as it has been presented before the PUB, is that forward-looking feedback from stakeholders can be incorporated by Efficiency Manitoba into its Plan, as there is flexibility in both programming and implementation and the Act (at s. 12(5)) allows for adjustments during the three plan years.

24. The Plan presented to the PUB as part of these proceedings is one that has been carefully and thoughtfully developed by experienced DSM professionals with a view to diverse and accessible programming that can achieve significant energy savings. The Plan successfully achieves aggressive savings in energy consumption and is cost-effective at a portfolio level while operating on a much leaner budget than Manitoba Hydro as required by the mandate and direction received from Government.

25. The Plan prioritizes engagement across diverse customer segments including a significant engagement strategy for hard-to-reach customers, dedicating at least thirteen (13%) its overall budget under the Plan to providing savings that will benefit Indigenous and hard-to-reach customers.

26. The 2020/23 Efficiency Plan is the first plan produced by Efficiency Manitoba. Efficiency Manitoba, notwithstanding its significant efforts, recognizes that its Plan is not perfect. Efficiency Manitoba has been clear that it is committed to improving its Plan and values the feedback from its stakeholders and the public.

27. Efficiency Manitoba has confirmed in the Plan and during the PUB process that it is committed to working with its Indigenous Customers in a manner that is consistent with the principles of Reconciliation. Efficiency Manitoba incorporates respect, engagement, understanding and action directly into its considerations in rolling out the Plan. Engagement and understanding, to be followed by action, are key priority considerations for Efficiency Manitoba as it implements the Plan to action. For example, the Assembly of Manitoba Chiefs and other Indigenous stakeholder groups will be consulted in order to

gather information concerning First Nation Off-Reserve customers with a view to establishing First Nation Off-Reserve programming. The Plan, as presented and without amendment, provides for this kind of flexibility.

28. Integrated resource planning has been a topic of discussion in these proceedings. Efficiency Manitoba is not a utility and is not the appropriate party to lead any such undertaking. Efficiency Manitoba has been clear that it could not, on its own, engage in an integrated resource planning process. Efficiency Manitoba also questions whether the Act and the Regulations permit Efficiency Manitoba to participate in such a process or whether legislative amendment would be required. While Efficiency Manitoba is open to participating in an integrated resource planning process, subject to compliance with the Act and the Regulations, Efficiency Manitoba reiterates that it has limited staffing and resources and that an integrated resource planning process would have a significant effect on Efficiency Manitoba if not sequenced in a manner that provides for effective decision making.
29. Efficiency Manitoba remains satisfied that it has engaged in an appropriate process and has an appropriate methodology concerning its selection of measures in its programming portfolio. This results in balanced programming.
30. The Plan works. The Plan programming works. Programming is available to as many Manitobans as possible. Targets are met and savings are achieved.
31. Efficiency Manitoba reiterates that its respectful submission is that the Plan, as presented should be accepted.
32. Should the Public Utilities Board determine that recommendations for amendment are warranted concerning the Plan, Efficiency Manitoba respectfully submits that those recommendations should take into account the following considerations:
 - a. the short timeline for implementation as amendments take time and Efficiency Manitoba faces an imminent commencement date of April 1st;
 - b. any recommendations to change programming may reasonably affect more than just the ability of Efficiency Manitoba to reach savings targets – Efficiency Manitoba has other statutory obligations that it must meet and the Plan needs to meet all and not just some of those considerations;
 - c. Government has directed Efficiency Manitoba to do more with less and that more regulatory requirements mean that more Efficiency Manitoba resources are directed away from program implementation and that this can have a real impact on Efficiency Manitoba and its operations;
 - d. Efficiency Manitoba is not a utility, and
 - e. Government has expressed a strong desire for an efficient and streamlined approach to Efficiency Manitoba's work with the PUB.
33. Efficiency Manitoba will provide its own recommendations for consideration to the PUB in Section H below.

SECTION C - Mandate, Statutory Compliance

I) The Plan Meets Efficiency Manitoba's Mandate

34. The Act provides a clear mandate for Efficiency Manitoba at Section 4(1):
- 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: demand for electrical power in Manitoba, potable water consumed in Manitoba and 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.
35. In its inaugural Plan, Efficiency Manitoba has introduced a new approach to DSM programming, giving customers within defined segments targeted service offerings and incentives. The Plan includes comprehensive savings programming to be delivered to diverse customer segments across the Province. Efficiency Manitoba has identified four customer segments: residential; residential income qualifying; Indigenous; and commercial, industrial, and agricultural. These customer segments encompass the unique characteristics of consumers in Manitoba and their distinctive energy consumption patterns.
36. By having identified these customer segments, Efficiency Manitoba is able to customize and deliver offers and programs that are customer-centred for that market and help to facilitate participation of all Manitobans in energy efficiency. Efficiency Manitoba has detailed its programming offerings in the Plan at Appendix A – Sections A4 to A8.
37. For all programs/measures within the Plan, Efficiency Manitoba has outlined the steps that will be taken to implement and support those demand-side initiatives. For example, for the Income Qualified section can be found in the Plan at PDF pages 311 to 325.
38. As set out below, looking at the three year average, the Plan set out to meet the savings targets and achieve resulting Greenhouse Gas Savings:

2020/23 EFFICIENCY PLAN – ELECTRIC PORTFOLIO SAVINGS

	2020/21	2021/22	2022/23	Average
Annual electric savings (GWh)	373	386	377	379
Savings as a percent of electric load	1.43%	1.48%	1.45%	1.46%

Annual capacity savings (MW)	85	93	93	90
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Note: Electric energy and capacity savings determined at generation.

2020/23 EFFICIENCY PLAN- NATURAL GAS PORTFOLIO SAVINGS

	2020/21	2021/22	2022/23	Average
Annual natural gas savings (million m ³)	11.7	12.8	13.2	12.6
Savings as a percent of natural gas volume	0.72%	0.79%	0.82%	0.78%
GHG savings (tonnes CO ₂ e)	22,200	24,200	25,200	23,900

Note: After accounting for electric programming interactive effects.

39. Efficiency Manitoba has demonstrated that its Plan, as presented, will provide long term utility benefits and bill savings to participating customers.

ELECTRIC PORTFOLIO		NATURAL GAS PORTFOLIO	
2.24 cents / kWh	LOW LEVELIZED COSTS	18.69 cents / m ³	
0.019 cents / kWh	LOW RATE IMPACTS	0.23 cents / m ³	
\$14,900,000 (Annually)	CUSTOMER BILL SAVINGS	\$3,000,000 (Annually)	
35% Higher Savings 39% Lower Acquisition Costs	VERSUS MANITOBA HYDRO	42% Higher Savings 10% Lower Acquisition Costs	

40. Cost-effectiveness has been an important consideration in the review of the Plan and these proceedings.
41. The effects of current and planned DSM programming activities assist in the deferral of the need for new generation resources. As noted during the cross examination of Mr. Stocki beginning at page 1009 of the transcript, at line 24 "...without the forecasted DSM that Manitoba Hydro is projecting, that their need date for next resources would be 2030/31. With DSM included at that point in time, their need date was moved out to 2039/40."

II) The Plan Meets Direction from Government

42. In commencing its operations and in setting its Plan, the Act and the Regulations obviously played and will continue to play a key role.

43. Efficiency Manitoba has also carefully considered direction from the Government of Manitoba ("Government"), as articulated in correspondence from the Minister of Crown Services to the Chair of the Efficiency Manitoba Board of Directors dated April 24, 2019 Exhibit AMC-4, page 4 to 6). This correspondence articulates four priorities:
- 1) establish the structure of the new corporation ensuring a leaner, more streamlined organization to deliver energy efficiency programs;
 - 2) develop and submit for review and approval an initial three-year plan for demand-side management initiatives to meet mandated savings targets, while optimizing value for money;
 - 3) work with the Public Utilities Board to develop streamlined processes, to reduce overall costs to ratepayers of regulatory hearings; and
 - 4) find ways to obtain the same or better outcomes as formerly obtained under the "Power Smart" program, but at a significantly smaller percentage of the cost and materially lower labour costs.
44. There is no doubt that Government had fiscal sustainability in mind when issuing its direction to Efficiency Manitoba. Government was, however, similarly clear in its commitment to advancing reconciliation with Indigenous Manitobans, and its expectation that Efficiency Manitoba contribute to reconciliation in their interactions with Indigenous communities and individuals.
45. A key element of Efficiency Manitoba's open and transparent approach is the Energy Efficiency Advisory Group ("EEAG"). The group has been instrumental in providing valuable advice during the creation of the Plan and Efficiency Manitoba intends to continue to work closely with the EEAG members through implementation and beyond.
46. The Southern Chiefs' Organization Inc. ("SCO"), The Assembly of Manitoba Chiefs ("AMC"), the Manitoba Keewatinowik Okimakanak Inc. ("MKO"), and the Manitoba Metis Federation ("MMF") were each invited to participate in the EEAG as they were identified as the voices of the customers they represent. During cross-examination, Dr. Fitzpatrick confirmed that:
- "Of course, the experts on how to best engage First Nations are members of First Nations, and the experts are AMC and MKO and other people who -- who -- who work with those organizations, and SCO, et cetera."
- Page 1887 of the Transcript, Lines 9 to 13
47. Reference has been made in these proceedings to the fact that the word "reconciliation" did not appear in the Plan. Efficiency Manitoba has taken Government's request to consider reconciliation in its interactions very seriously and Efficiency Manitoba has integrated the spirit of reconciliation, respect - engagement – understanding - action... - directly into its Plan and intends to continue to utilize these principles during the implementation of the Plan.
48. Efficiency Manitoba is committed to delivering culturally appropriate and relevant materials for Indigenous programming which will be created in coordination with Indigenous partners

and which will be translated into Indigenous languages (Page 795 of the Transcript, Lines 1 to 8).

- 49. Efficiency Manitoba has also committed to working with AMC to implement a strategy to increase the number of First Nations contractors for all programming which would contribute to economic reconciliation. (Transcript pg. 795 line 6 to 19)
- 50. Efficiency Manitoba is committed to transparency and openness to work with Indigenous representatives on important features for not only setting but also implementing the Plan in advance of and during implementation.
- 51. Efficiency Manitoba is, through its Plan, contributing to reconciliation in its interactions with First Nations and First Nations individuals.

III) Statutory Compliance

- 52. The Plan meets the requirements of the Act and the Regulation and complies with the mandate letter issued to Efficiency Manitoba. The Plan contains the necessary elements required for approval as part of this review process.
- 53. Efficiency Manitoba has certain obligations it must meet under the Act in terms of its Plan:
 - a. Section 7 in regard to savings targets for both electrical and gas energy consumption;
 - b. Section 9 of the Act details content requirements concerning the Plan that is submitted for review before the Public Utilities Board;
 - c. Section 11.4 of the Act details mandatory considerations that the Public Utilities Board must consider in connection with its review of the Plan; and
 - d. Section 11 of the Regulations which provides other factors that the Public Utilities Board must consider when reviewing the Plan.
- 54. Section 8 of the Act, which puts in place requirements regarding saving targets after the first 15 years, is not relevant for the purposes of the present PUB review.

Section 7 of the Act - Savings Targets and Efficiency Plans

- 55. The Act sets out the savings targets that Efficiency Manitoba must meet ***in the 15-year period (emphasis added)*** following the commencement date.
- 56. On average, the Efficiency Plan meets the net savings target requirements for the 2020/23 Plan term subject to rounding in accordance with the savings target of 1.5%, with a Plan year average of 1.46% for net electrical savings, and a Plan savings average of 0.78% for natural gas savings.

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GHG savings (tonnes CO ₂ e)	22,200	24,200	25,200	23,900

Note: After accounting for electric programming interactive effects.

- 57. It is acknowledged as part of these proceedings that, due to a carry-through calculation error discovered by Efficiency Manitoba as part of the Information Request process, Efficiency Manitoba's electrical savings targets are slightly below the electrical consumption savings target annual amount of 1.5%. Efficiency Manitoba's Plan (PDF Page 17) contemplates a first year natural gas savings that is slightly below the 0.75 natural gas savings target.
- 58. Daymark Energy Advisors indicated in their testimony as part of these proceedings that it was aware that Efficiency Manitoba's achievement of savings targets through the Plan were slightly below the annual net savings targets, that the difference between the savings target achieved through the Plan in comparison to the target itself was a very low difference, and that the target is met through rounding on average over the Plan years in terms of both electrical energy consumption savings and natural gas consumption savings.

Page 1254 of the Transcript, Lines 2 to 10

- 59. Efficiency Manitoba, through its testimony delivered as part of these proceedings, confirmed the following:

But using different approaches it can be 1.46 in 2021 or 1.48 in -- in 2021. The exact values aren't actually really the critical point. The point is that we don't necessarily know what the actual load will be and the -- and the piece that we have to validate our savings targets is to that actual weather adjusted electrical load, once that's known.

Transcript Page 200, Lines 4 to 12

- 60. Essentially, Efficiency Manitoba must rely on actual numbers and not projections to assess whether it has met the statutory savings targets. Efficiency Manitoba respectfully submits that its first plan puts it on track to achieve those cumulative targets over the next fifteen-year period.

61. Daymark also provided an opinion that, notwithstanding this correction to the savings achieved through the Plan, Daymark expressed its opinion that there was no fatal flaw in the Plan during its direct evidence which can be found at Page 1250 of the Transcript at Lines 10 to 17:

But the one (1) thing that I would emphasize is that our team, and especially Ms. Kelly and I, don't feel that there is any fatal flaws in anything that we've seen that tells us that- that the activities are going to be failures in—in a large sense of the world in terms of managing costs, managing – getting some savings, getting the deliverability of the programs, and the like.

62. Efficiency Manitoba has provided in its evidence that in its first year of the Plan, it is not only implementing those portions of its programming scheduled to commence in year one of the Plan, but it is also carrying out operational issues associated with the implementation of the Plan.
63. Section 7(2) of the Act specifically provides that shortfalls or surpluses in annual net savings carry forward during the **15-year** (*emphasis added*) period under subsection 7(1) such that there is a cumulative total of the annual percentage savings in the consumption of electrical energy and natural gas.
64. Section 7(2) of the Act specifically uses the full 15-year cumulative period in its discussion of shortfalls and surpluses, and as a result, Government in setting this legislation and as a matter of statutory interpretation must have intended that there could be shortfalls from the first 3 year Plan period that would carry forward with a view to the 15-year cumulative target.
65. Efficiency Manitoba respectfully submits that any savings target shortfalls its inaugural Plan are *de minimus*, are addressed by rounding over the average of the Plan years on both the electrical energy consumption and natural gas consumption rates, are subject to the calculation, methodology and subject to the need to use actual numbers to determine compliance with savings target requirements

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GHG savings (tonnes CO ₂ e)	22,200	24,200	25,200	23,900

Note: After accounting for electric programming interactive effects.

66. Efficiency Manitoba is well positioned to meet its savings target for the 2020/23 Plan years. Efficiency Manitoba maintains its position that it has complied with the requirements of Section 7 of the Act.

Question Regarding the Application of the Cumulative Savings Target

67. Daymark, in connection with its report, raised a question as to the appropriate interpretation of the fifteen year cumulative period as defined in the Act and whether the word "cumulative" in Section 7(2) refers to the entirety of the fifteen year period or whether savings can only be counted if their lifecycle extends to the end of the fifteen year period.
68. Daymark did not advocate for either interpretation. During his direct evidence, Mr. Bowman addressed this issue as follows:

Now, that's assuming that the 22.5 percent policy target is meant as the sum of the fifteen (15) years of savings. And as I read the legislation with a mathematic hat on, not a legal hat, I can't see any other way to read it other than I will add up a series of 1.5s or thereabouts to try to come up to 22.5 and that the 22.5 will not try - - take into persistence or - - or programs dropping off.

Page 59 of the Transcript at Page 2149 at Lines 16 to 23.

69. Section 7(2) is set out below:

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%.

70. While Efficiency Manitoba certainly respects Daymark's detailed consideration of the language of this section. Efficiency Manitoba respectfully submits that the interpretation of the cumulative totals as being solely a product of addition of annual electrical and natural gas consumption savings is the only logical conclusion that can be interpreted from the legislation.
71. A plain language interpretation of Section 7(2) provides that there is a carry forward of those annual percentage savings (namely 1.5% for electrical consumption savings and 0.75% for gas consumption savings) for each of the 15 years, and when added together form the "cumulative total of the annual percentage savings" in consumption, in the amounts of 22.5% and 11.25% at the end of that 15-year period.
72. Efficiency Manitoba respectfully submits that it is the cumulative total of 22.5% and 11.25% over the fifteen years that Efficiency Manitoba must meet pursuant to the Act.

Section 9 of the Act - The Plan Complies with Statutory Content Requirements

Efficiency Manitoba has established a Plan that meets the content requirements set forth in section 9 of the Act.

73. For ease of reference, Efficiency Manitoba has reproduced Table 2.2 which details an index of the requirements of section 9, and the location of the relevant portions of the Plan to meet those requirements in the Plan sections:

EFFICIENCY MANITOBA ACT	2020/23 EFFICIENCY PLAN SUBMISSION
Section 7(1) Initial Savings Targets	Section 2.3.1 – The Efficiency Manitoba Act Section 2.3.2 – Practical application of the Act– Appendix A – Section A2.2.2
Section 7(2) Targets are Cumulative	Section 2.3.1 – The Efficiency Manitoba Act
Section 7(3) Calculating Net Savings	Section 2.3.2 – Practical application of the Act Appendix A – Section A2.2.2
Section 8 Savings Targets after first 15 years	Not applicable for 2020/23 Efficiency Plan
Section 9(a) Description of demand-side management initiatives	Section 3.2 – Customer Focused Programming Appendix A - Section A4 through A9
Section 9(b) Description of Educational Initiatives	Appendix A - Section A4.6 Appendix A - Section A9.2.5
Section 9(c) Description of Additional Initiatives	Not applicable for 2020/23 Efficiency Plan
Section 9(d) Cumulative net savings shortfall	Not applicable for 2020/23 Efficiency Plan
Section 9(e) Resulting greenhouse gas reductions from 9(a) to 9(d)	Section 6.3.3 – Environmental Benefits Attachment 3 –Technical Tables
Section 9(f)(i) Net Savings and cost-effectiveness of each initiative	Appendix A - Section A3 through A8
Section 9(f)(ii) Overall Net Savings and cost-effectiveness	Section 3.1.1 - Achieving the mandated energy savings Section 5.1 – Efficiency Manitoba uses the Program Administrator Cost Test (PACT) to Measure the Cost- Effectiveness of the Plan as prescribed in Regulation Section 6.1.2 – Customer Segment Considerations
Section 9(g)(i) Participant Benefits	Section 5.5.1 – Electric customer bill impacts Section 5.5.2 – Natural gas customer bill impacts Section 6.3.1 – Social benefits Appendix A - Section A4 through A8
Section 9(g)(ii) Manitoba Hydro Benefits	Section 5.1.2 – PACT Energy Benefits Section 5.1.3 - Efficiency Plan PACT Metrics Appendix A – Section A2.2.2 Appendix A – Section A3.3
Section 9(g)(iii) Benefits to all Manitobans	Section 6.3 – The Plan provides significant social, economic and environmental benefits to Manitobans Appendix A - Section A4 through A8
Section 9(h) Stakeholder Input	Section 3.3 – Comprehensive engagement Appendix A - Section A2.4 Attachment 2 – Energy Efficiency Advisory Group Reporting
Section 9(i) Impact of initiatives on 15- year Efficiency Manitoba plan	Section 3.1.1 - Achieving the mandated energy savings
Section 9(j) Plan addresses required prescribed factors for PUB	Section 2.4.1 – The Efficiency Manitoba Act
Section 9(k)(i) Interest Rate for loan/financing programs	Appendix A - Section A4.4
Section 9(k)(ii) Eligibility Criteria for loan/financing programs	Appendix A - Section A4.4

Section 9(k)(iii) Expected dollar amount to be loaned/financed through initiatives	Appendix A - Section A4.4
Section 9(l)(i) 3-year projected cost of each initiative and timeline for costs incurred	Section 4.1 - Portfolio Budget Summary Section 4.4 - Portfolio Budget Analysis Appendix A - Section A3.2 Appendix A - Section A4 through A8
Section 9(l)(ii) 3-Year Projected administrative and overhead costs	Section 4.1 - Portfolio Budget Summary Section 4.4 - Portfolio Budget Analysis
Section 9(l)(iii) Contingency Fund required	Section 7.4 – Efficiency Manitoba is prepared for emerging technologies and contingencies
Section 9(l)(iv) Proposed Sources and amount of funding	2.3.1 The Efficiency Manitoba Act 2.3.2 Practical application of the Act Appendix A - Section A3.2
Section 9(l)(v) Schedule of required funds over 3 years	Appendix A - Section A3.2.5
Section 9(m) How outcomes are achieved and proposed performance measures	Section 7 – Efficiency Manitoba is Developing a Comprehensive Approach to Monitor, Evaluate Performance and Continuously Improve Attachment 5 – Evaluation Framework and Planning Report

74. A review of Table 2.2 regarding s.9 requirements demonstrates that Efficiency Manitoba has met all of the statutory requirements applicable to the present Plan (section 9(c) and section 9(d) are not applicable for the present Plan years).
75. Daymark, in carrying out its work as Independent Expert Consultant, asked the question, "Is the Plan complete?"


Introduction
Our approach

- 1

 - Is the Plan complete?
 - Will the Plan deliver its estimated savings?
 - Are the Initiatives of the Plan cost-effective?
 - Are plans for evaluation, measurement, and verification adequate?
 - Review annual and long-term savings targets
 - Provide overall findings
- 2
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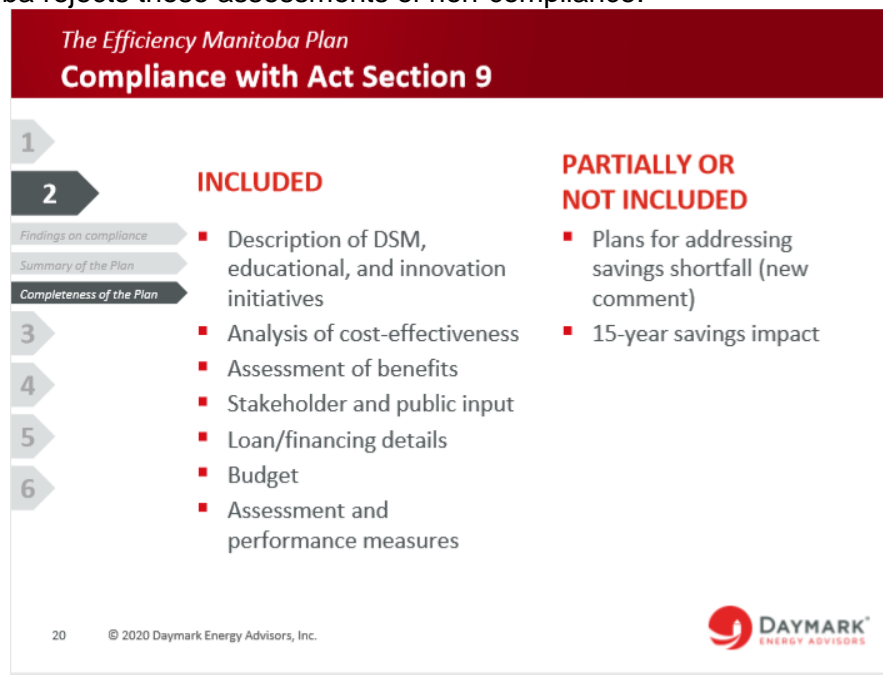
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Answering that question requires an analysis of section 9.

76. Daymark, at slide 20 of its presentation (*next page*), indicated only the following areas, as falling within those "Partially or Not Included" under its slide number 20, namely "Plans for addressing savings shortfall (new comment)", and "15-year savings impact". Efficiency Manitoba rejects those assessments of non-compliance.



77. Efficiency Manitoba disputes the assertion raised that its Plan does not address savings shortfalls. Efficiency Manitoba accepts that this statement was intended to apply to the issue of the mathematical error that had been identified after the Plan had been submitted, and as part of the information request process, and so the Plan could not have itself contemplated corrective action to these figures.
78. Efficiency Manitoba does not accept, however, that its Plan does not take into account a process to address shortfalls.
79. While this discussion appears to be a reference to an overall savings shortfall, those savings are calculated from actual program savings to be instituted as part of the Plan.
80. Flexibility is a key feature that has been built into the Plan, and this flexibility allows Efficiency Manitoba to respond to the market and to address shortfalls. In the event of savings shortfalls or lack of participation within a customer segment or program bundle, for example, several activities could be increased in frequency and/or duration, and at minimal cost under the existing Plan, in order to reach additional potential customers. These savings shortfall strategies are by way of example only and already form part of the Plan:
- i) Residential – Although engagement with residential customers through channels such as social media, online blogs, newsletters are planned activities associated with residential program advertising, increasing the frequency or providing additional media content or contests / additional promotions may provide a means to increase participation within this customer segment.

- ii) All Customer Segments – Increased engagement with trade allies, contractors, suppliers and distributors. Although engagement with industry responsible for implementing energy efficiency technologies within Manitoba is a planned enabling strategy, should participation within a specific program bundle be targeted for increase, potential contractors, suppliers, distributors associated specifically with the targeted technologies would be engaged to understand potential barriers, provide additional program information and program requirements to help increase motivation for the specification and install of the energy efficient technologies being supported through Efficiency Manitoba.
 - iii) Commercial, Industrial and Agricultural – Increased engagement with prior participants and through Manitoba Hydro’s Customer Account Representatives. Although engagement with commercial, industrial and agricultural customers directly would already be key to the marketing approach within this customer sector, should participation within a specific program bundle within this customer segment be targeted for increased participation, Efficiency Manitoba would be able to contact customers directly that have outstanding uncompleted incentive applications, may have completed energy efficiency studies or audits in the past, or may have otherwise previously participated in Manitoba Hydro’s DSM programming. Additional contact with Manitoba Hydro customer account representatives (beyond that which is anticipated as part of Plan delivery) may also be used to provide additional program materials, education and information on Efficiency Manitoba offers with the intent of increasing potential new customer leads.
81. Efficiency Manitoba will be monitoring its Plan, targets, participation among a number of factors and make adjustments to its activities as necessary to boost participation or to make other decisions with a view to meeting its targets.
82. In Efficiency Manitoba's evidence provided as part of these proceedings, Efficiency Manitoba confirmed that it is claiming both codes and standards as part of its energy savings.
83. Efficiency Manitoba also confirmed as part of its evidence in these proceedings that while it is claiming a large portion of its Codes and Standards savings from codes and residential appliance and equipment standards, it has claimed very few savings from commercial appliance and equipment standards at present. A new methodology will need to be developed for commercial standards to claim these savings.
84. In reviewing newer standards able to be claimed as savings under Natural Resources Canada’s amendment 13 and amendment 14 (Exhibit EM-26 PDF page 6-10) Daymark confirmed that Efficiency Manitoba had not included savings from the commercial standards listed in those documents. Accordingly, Efficiency Manitoba has yet to claim these commercial standards savings which are occurring in the Manitoba market as a result of past funding and technical support.
85. Savings from commercial standards represents an opportunity to claim additional energy efficiency savings. Savings from standards can be achieved at a low cost, and also provide an alternative for Efficiency Manitoba to make up any shortfall in savings targets.

- 86. Daymark was satisfied that Efficiency Manitoba had met its content obligations under Section 9, subject to the exception noted above and to which Efficiency Manitoba has responded.
- 87. Turning back to the Plan content, and the content requirements set forth in Section 9, there are a number of the requirements of Section 9 that Efficiency Manitoba would like to specifically address given certain evidence addressed in the course of the proceedings that requires Efficiency Manitoba response.

Subsection 9(e) - GHG Savings

- 88. Subsection 9(e) specifically provides that the Plan must include an analysis of the reductions in greenhouse gas emissions in Manitoba expected to result from the Plan programming and educational initiatives. Efficiency Manitoba achieves 22,200 CO₂e for the first year of its Plan, 24,200 CO₂e for the second year of its Plan, and 25,200 CO₂e for the third year of the Plan. The Plan achieves reductions in Greenhouse Gas savings that are of benefit to all Manitobans.

For ease of reference, the table showing the savings is set forth below:

2020/23 EFFICIENCY PLAN- NATURAL GAS PORTFOLIO SAVINGS

	2020/21	2021/22	2022/23	Average
Annual natural gas savings (million m ³)	11.7	12.8	13.2	12.6
Savings as a percent of natural gas volume	0.72%	0.79%	0.82%	0.78%
GHG savings (tonnes CO ₂ e)	22,200	24,200	25,200	23,900

Note: After accounting for electric programming interactive effects.

Subsection 9(f) – Cost-Effectiveness

- 89. Section 9(f) requires an analysis of the amount and cost-effectiveness of the net savings to be achieved by each of the initiatives proposed under the Plan and for the Plan as a whole. The details relating to cost-effectiveness in the Plan (as required by the content requirements set out in Section 9) are identified at Table 2.2 (as referenced above at paragraph 73)
- 90. Set out below is a Table summarizing the cost effectiveness of the electric portfolio as well as the natural gas portfolio:

TABLE 5.3 ELECTRIC PROGRAMMING AND PORTFOLIO COST-EFFECTIVENESS

METRICS

	PACT ratio	PACT NPV	PACT Levelized Cost
Program only metrics	3.88	\$369 million	1.89¢/kWh
Overall portfolio metrics	3.27	\$345 million	2.24¢/kWh

Note. Program only metrics do not include impact of enabling strategies or corporate overhead. Overall portfolio metrics include those impacts.

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TABLE 5.4 NATURAL GAS PROGRAMMING AND PORTFOLIO COST-

EFFECTIVENESS METRICS

	PACT ratio	PACT NPV	PACT Levelized Cost
Program only metrics	1.42	\$22 million	13.03¢/m ³
Overall portfolio metrics	0.99	(\$0.8 million)	18.69¢/m ³

Note. Program only metrics do not include impact of interactive effects, enabling strategies or corporate overhead. Overall portfolio metrics include those impacts.

Subsection 9(g) – Benefits of Initiatives.

Subsection 9(h) - Description of Stakeholder and Public Input

91. Subsection 9(h) of the Act provides as follows:

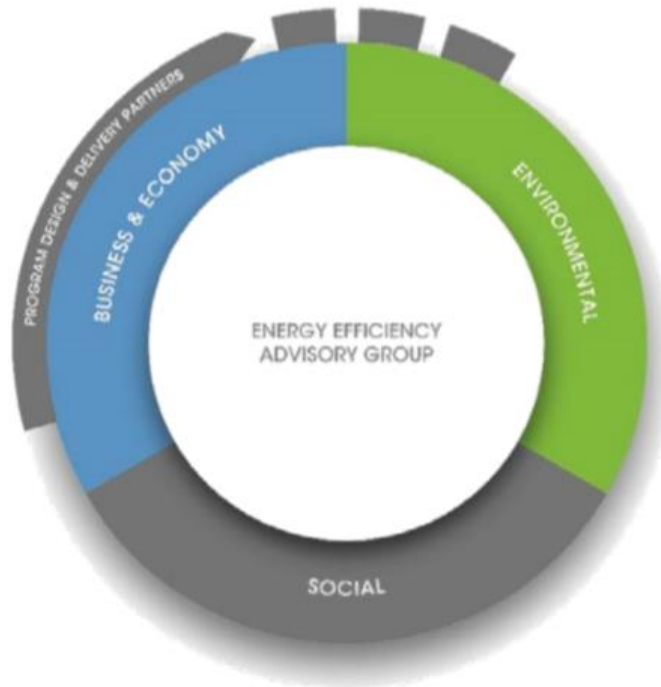
(h) a description of the input that Efficiency Manitoba received from stakeholders — including the stakeholder committee established under section 27 — and the public in preparing the plan, and the process established for receiving the input;

92. Subsection 9(h) requires that the Plan include a **description** of the input that Efficiency Manitoba received from stakeholders and the public and the process established for receiving that input. Efficiency Manitoba has clearly included that description, see PDF pages 89 to 101.

93. **Not Prescriptive.** Neither the Act nor the Regulation are prescriptive in terms of the types of activities or levels of engagement that Efficiency Manitoba must engage in to gather the input that must be included in the Plan under this subsection 9(h).

94. The Act and Regulation are very clear and prescriptive regarding other requirements for Efficiency Manitoba in other sections, and it is therefore clear that Government, in preparing the Act, intended that these activities be left to be determined by Efficiency Manitoba.

95. **Engagement Model.** Efficiency Manitoba has established a stakeholder engagement model, which is set out below in Figure 3.1 which can be found at Plan PDF page 90.



96. This Engagement Model was developed with the intent for it to provide a process for Efficiency Manitoba to engage consultation and continuous improvement on the delivery of programs and to facilitate identifying new opportunities and partnerships going forward (Plan PDF page 89).
97. The outer ring of the Engagement Model represents program design and delivery partners, including suppliers, contractors, installers, and service providers – essentially businesses that are responsible for the delivery of energy efficiency products and services into homes, commercial operations and industrial businesses (Plan PDF page 90).
98. The middle ring of the Engagement Model represents the engagement and partnerships that will be formed with customers and industry association and social enterprises to assist in outreach for Efficiency Manitoba offerings and to get direct feedback (Plan PDF page 91).
99. The centre of the Engagement Model focuses on the EEAG, and by implication, those its EEAG members represent as the customer groups that are targeted by the initiatives in the Plan. Efficiency Manitoba invited participation from groups that represented experienced voices of key stakeholders across diverse identified customer segments; these groups were also invited on the basis that they were representatives of the voices of their constituents from an advocacy perspective and from whom Efficiency Manitoba wanted to gather input in setting its Plan (page 167 of the Transcript at Lines 8 to 17).
100. All four Intervenor in these proceedings were issued invitations to and did in fact participate, to different degrees, as part of the EEAG as follows:

- Consumers' Association of Canada has been acting on behalf of the public, specifically on the topic of demand side management for over 13 years and has indicated that it brings the voice of consumers directly to the Public Utilities Board process, a process that would knowingly be undertaken by Efficiency Manitoba in connection with the Plan (see Exhibit C-1-3, PDF page 2 of 22);
 - MIPUG members work collaboratively on issues of common concern related to energy supply, rates and related matters such as energy efficiency programming in Manitoba. The group's key concerns are to ensure energy rates reflect the fair and reasonable costs to provide energy, while also being stable and predictable. MIPUG is also focused on competitiveness for industry and energy options that support the efficient, productive and economic consumption of energy. MIPUG is an association of companies who are substantial users of electricity, procuring energy primarily through the electric General Service Large (all three voltage classes) rate classes. MIPUG members also include natural gas users in rate classes encompassing High Volume Firm, Main Line Firm, Large General Service, and Interruptible, and Special Contract service. Collectively, Manitoba Hydro/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 (Exhibit MIPUG 2-2- Page 1)
 - AMC was formed in 1998 and is the political and advocacy body that represents 62 of 63 First Nations in Manitoba. The AMC represents a diverse community of First Nations people under Treaties 1 through 6 and 10, including the Anishinaabe (Ojibway), Nehetho (Cree), Oji-Cree, Dene and Dakota. The First Nations peoples represented by the AMC live throughout Manitoba and are amongst the most rural, southerly and northerly ratepayers in Manitoba. The AMC serves as a unified and distinct voice to collectively advance the interests of Manitoba First Nations while respecting each First Nation's inherent right to self-determination and sovereignty. The AMC's work includes extensive advocacy in the areas of health, social development and housing AMC Exhibit 1- page 6);
 - MKO is a non-profit advocacy organization that has been in existence for more than 35 years and provides a collective voice for more than 65,000 treaty First Nation citizens in northern Manitoba (MKO Exhibit 2-1, page 2).
101. To complement the feedback received by representatives, Efficiency Manitoba offered EEAG participants the opportunity to for further presentations to their membership, which facilitated an additional mechanism for direct feedback into the Plan development; only two of the EEAG members, Keystone Agricultural Producers and Manitoba Industrial Power Users Group accepted that offer (see Plan PDF page 462 of 591)
102. Efficiency Manitoba, in its meetings with the EEAG, requested that the EEAG consult with those they represent regarding certain energy efficiency issues to gain that public perspective from targeted participants whose voices were important for the Plan. Efficiency Manitoba expressed a desire to listen to the customer perspective represented in the EEAG. (PDF page 455 of the Plan)
103. Efficiency Manitoba reasonably relied on its consultations with the EEAG for both its stakeholder and public engagement to be carried out under the Act. This reliance was reasonable given Efficiency Manitoba's assessment that the EEAG represented significant portions of the Manitoba population. Reliance on the EEAG, and through the EEAG to

- reach out to its members, was also reasonable in this case given the time constraints for public engagement that materialized for Efficiency Manitoba.
104. From feedback Efficiency Manitoba received as part of this hearing process and with the benefit of additional time and resources, Efficiency Manitoba recognizes the need for broader public engagement
 105. Efficiency Manitoba hired its first employee, Ms. Kuruluk, in January of 2019. As with any new corporation, staff must be hired and operational duties completed (such as obtaining furniture, phones, computers and staff). (Page 166 of the Transcript, Lines 3 to 5) By May of 2019, Efficiency Manitoba had its first meeting with the EEAG. Efficiency Manitoba hired a public engagement consultant to assist in this process. Efficiency Manitoba had to prepare its Plan for filing in the fall of 2019, and as part of that process, draft customer segment portfolios were presented to the EEAG in June of 2019. (PDF Page 460 and 470 of the Plan)
 106. As is widely known concerning public bodies, on or about an election, Efficiency Manitoba was restricted from corresponding with the public from the beginning of June through to the beginning of September; recognizing the importance of the of stakeholder and public engagement, Efficiency Manitoba sought and obtained special permission to continue the work of the EEAG. (Page 773 of the Transcript, at Line 9)
 107. These activities were all completed with a view to developing an Efficiency Plan and getting it filed with the Public Utilities Board by its October 1 regulatory deadline.
 108. Efficiency Manitoba achieved a great deal of engagement in a very short amount of time.
 109. The level of stakeholder and public engagement that has gone in to programs forming the Plan that have been transitioned from Manitoba Hydro should not be ignored. Transitioned programs had been subject to customer feedback gathering processes instituted by Manitoba and which were incorporated into that programming. A good example of this is the income qualified program which has several years of feedback and input through the Bill Affordability working group.
 110. While Dr. Fitzpatrick, in her report, did not accept that the Public Utilities Board review process represented an additional avenue for public engagement (Page 1972 of the Transcript, at Line 8), Efficiency Manitoba disagrees and continues to see the Public Utilities Board review process as an opportunity that allows for stakeholder and public participation and the gathering of stakeholder and public feedback and input especially considering that the Plan is not yet approved.
 111. Daymark Energy Advisors, the Independent Expert Consultant in these proceedings, indicated in Slide 20 of their presentation that stakeholder and public input had been completed in the planning process and had met the requirements of section 9.
 112. In her evidence, Dr. Fitzpatrick suggested using community liasons for low income and hard to reach customers under her general recommendation of "providing more mechanisms for the public to be involved." (Page 1704 of the Transcript, at Line 5). Efficiency Manitoba agrees, and under its existing Plan, Efficiency Manitoba discloses its plan to use energy advocates as part of its engagement strategies, for example:

- To help reach newcomers to Canada, Efficiency Manitoba highlights its intention to engage with community groups and organizations dedicated to working with new immigrants as partners (PDF Page 321); and
 - Knowing that energy efficiency can assist communities with sustainability goals and resiliency to climate change, Efficiency Manitoba will work with interested First Nations and other communities to establish an energy efficiency plan that can fit into a broader Community Energy Plan, and establish a Community Energy Advocate who can focus on energy efficiency initiatives in the community and to ensure programs and offers are accessed (Plan PDF page 333).
113. Dr. Fitzpatrick, in her testimony before this panel, testified to the value that she placed on youth engagement. (Page 1715 of the Transcript, at Line 25) Similarly, Efficiency Manitoba values youth engagement and is planning to engage youth moving forward.
114. As part of its engagement of youth and in furtherance of this strategic goal, Efficiency Manitoba is providing the Home Energy Efficiency Kits and Education Initiative that will specifically engage youth (Plan PDF 307).
115. Dr. Fitzpatrick recommended the use of an issues tracking table for all stakeholder and public feedback. Efficiency Manitoba has determined that this recommendation will be adopted for future engagement activity.
116. In connection with Dr. Fitzpatrick's evidence, Dr. Fitzpatrick referenced two studies concerning public engagement. While Efficiency Manitoba remains open to information gathering opportunities, the example studies selected by Dr. Fitzpatrick should not be taken as representative of what could be completed by Efficiency Manitoba in the same time periods and using the same scopes of work as presented. The University of Winnipeg study was one of the examples listed. The University of Winnipeg would have presumably had its student base easily accessible within its campuses to carry out its focus groups. Efficiency Manitoba by contrast would be gathering information potentially from diverse rate-payers across the Province.
117. While Efficiency Manitoba is certainly open to considering necessary information gathering opportunities that will benefit its actual or potential programming subject to its operational planning, it is important to recognize the nature and scope that would be required to complete such an undertaking and the dedication of resources required to complete such tasks given the operating mandate of Efficiency Manitoba.

(c) Section 11(4) of the Act – Public Utilities Board Mandatory Considerations

118. Section 11(4) of the Act sets out the mandatory considerations that the Public Utilities Board must consider in reviewing the Plan.

Subsection 11(4)(a) – Net Savings Targets and Plans for Shortfall

119. Section 11(4)(a) of the Act requires that the Public Utilities Board consider the net savings required to meet the savings targets and the plans to address any existing shortfall.

120. In the determination of net savings, Efficiency Manitoba has included both the consideration of interactive effects, along with programs or initiatives that are weather dependent. Efficiency Manitoba is satisfied that it has provided the Public Utilities Board with a clear review of the issue of net savings targets as part of its Plan. (See PDF Pages 58 and 60 to 62)
121. While Efficiency Manitoba viewed the balance of section 11(4)(a) to be applicable to future plans addressing cumulative shortfall, Efficiency Manitoba has at paragraphs ____ to ____ of this submission given its position on its plans to address any existing shortfall under a Plan.
122. Efficiency Manitoba respectfully submits that it has met the requirements of section 11(4)(a) of the Act.

Section 11(4)(b) - Benefits and Cost-Effectiveness

123. Section 11(4)(b) of the Act requires the Public Utilities Board to consider the benefits and cost-effectiveness of the initiatives proposed in the Plan.
124. While section 11(4)(b) uses the term "initiatives", that term is not defined in the Act or the Regulation. The Regulation, however, is clear at section 12(1) and 12(2) that cost-effectiveness is to be determined at the portfolio level.
125. In its procedural Order 162/19, the PUB determined the scope with respect to the cost-effectiveness of the electric and natural gas demand-side management program bundles and portfolio at Issue 2 as follows:
 - 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;
126. Efficiency Manitoba clearly has strived to manage a balance between the important but inevitably conflicting goals of cost-effectiveness with the goal of inclusiveness of all customer groups in all regions of the province (Transcript Page 180, Beginning Line 16)
127. It has not been disputed that the Program Administrator Cost Test (PACT) as prescribed by the Regulations has been appropriately applied by Efficiency Manitoba.
128. On a consolidated basis, the 2020/23 Efficiency Plan is cost-effective with an overall net present value of over \$344 million.

129. On a PACT benefit-cost ratio basis the Efficiency Manitoba portfolio results summarized by Daymark include:
- a. Electric PACT ratio is 3.27 – Page 31 – Daymark Direct Evidence;
 - b. Natural Gas PACT ratio of 1.24 (no interactive effects metrics) – Page 32 – Daymark Direct Evidence;
 - c. The use of the no interactive effects metrics for the natural gas portfolio is provided as incorporating these *“in the metrics can blur the review of the natural gas cost-effectiveness”* – Page 32 – Daymark Direct Evidence.
130. Eliminating programs based on isolated cost effectiveness screens would serve to unbalance the portfolio and introduce risks regarding achievement of savings targets.
131. Within the IR response to PUB/EM I-13(c), Efficiency Manitoba addresses whether it would be reasonable (in addition to completing the PACT at the portfolio level) to conduct other cost-effectiveness screens to determine the specific measures to include in the portfolio as follows:

Efficiency Manitoba agrees that the PACT is one of the factors to consider in developing the portfolio of programs. Efficiency Manitoba does not agree that it should consider other cost-effectiveness screens when determining what programs to include in the portfolio. The Efficiency Manitoba Regulation (Section 11d and Section 12) has prescribed the PACT as the cost-effectiveness test that should be applied at the portfolio level. In considering the mandated electric and natural gas targets, applying additional non-prescribed cost-effectiveness screens to eliminate or reduce programming to customer segments may restrict Efficiency Manitoba’s ability to satisfy the energy savings targets or to provide equitable and accessible programming. As provided in PUB/EM I-11, information on additional cost-effectiveness test results for program bundles and the overall portfolio have been made available.

132. This was further discussed by Efficiency Manitoba during cross examination as found at Page 356 of the Transcript, Lines 20 to 25 continuing on page 357 of the Transcript from Lines 1 to 7.

There’s a long list of potential negative impacts from doing that, for example, market transformation, making future codes & standards more easily accepted within the market. And again, codes and standards are extremely cost-effective energy savings component that we’ve included within our plan.

So and insomuch as that a non-cost-effective or less-cost-effective measure today may help further market transformation down the road in say five (5) or ten (10) years, you may be pushing those future very-cost-effective savings even further down the time horizon.

133. Efficiency Manitoba's approach has been supported by Daymark within their responses to Information Requests. For example in their response to PUB/DAYMARK I-8e, they stated the following:

The implications for Manitobans are that the programs with benefit/cost ratios below unity increase the cost of electric or natural gas service to the Province, to the extent that all the benefits have been incorporated into the analysis. An example of benefits that are possible but not included is the contributions that the funding of these programs makes to securing more lasting savings through market transformation. However, even if there are no additional benefits, it does not mean that measures should be removed from the Plan just based on the PACT or TRC cost-effectiveness. It would make sense to consider whether these measures are driven by other reasons, such as strategic market transformation; social, energy or environmental policy; or assuring access to the broad cross section of Manitobans before making any recommendation as to whether to include or exclude them from the Plan.

134. There are further practical benefits of bundling less cost-effective measures with those with improved benefit-cost ratios as it enables Efficiency Manitoba to offer a greater breadth of efficiency measures to a customer segment and reduce the potential that Efficiency Manitoba would have to go back to the same customer multiple times to deliver different groupings of measures as they become more cost effective in future Plans. This approach is also supported by Daymark evidence provided in response to a question by Board Member Grant as found at Page 1316 of the Transcript, Lines 19 to 25 continuing on page 1317 of the Transcript from Lines 1 to 9:

I was going to go back to what John was talking about, and that is when you're – when you're going into a business or a residence to put in measures, in – in many places, even though you look at – at measure or bundles, and look at the benefit cost ratio for those, there are more opportunities for energy savings because you're in there and you don't want to go in and walk out the door without putting many in.

And that's why many jurisdictions look at the overall portfolio and say, if the portfolio passes and there's nothing that really bothers us about the other measures, we're going to let it go, because some of those measures are things that are more recognizable to the participants and it – and it makes the marketing of the program easier.

Subsection 11(4)(c) – Accessibility

135. Section 11(4)(c) provides that the Public Utilities Board must consider whether Efficiency Manitoba is reasonably achieving the aim of providing initiatives that are accessible to all Manitobans.
136. Direct evidence from Mr. Grevatt (Transcript Pages 1771 and 1772) suggests residential programs are not accessible and he characterized the residential electric savings as being disproportionate to the residential electric consumption – electric savings for residential are 20% of the portfolio whereas residential is 33% of electric load.

137. Efficiency Manitoba plans to continue offering popular programs with previous high participation with adjustments/enhancements to include new measures, revised delivery models and an easier, more streamline application process. Examples of measures that will continue to be offered include LED lighting incentives, insulation rebates, installation of water and energy saving devices and appliance recycling.
138. As described in EM/Coalition I-57a there is a history of energy efficiency incentive programming for residential customers in Manitoba, dating back to 2004 through Manitoba Hydro.
139. Past demand-side management activity in the Manitoba market, where savings are persisting, can reduce the available savings potential for certain customer segments.
140. Existing programs and measures continue to contribute energy savings within a cost-effective program bundle. They contribute energy savings within Efficiency Manitoba's diverse portfolio and also contribute to social, economic, environmental non-energy benefits.
141. There may be higher costs associated with reaching customers through offers that have been available for a long time such as LED lighting, insulation, appliance recycling, water and energy saver devices. In most cases the low hanging fruit has been reached and therefore a more targeted approach is needed to convert the remaining opportunities. Some approaches may be more costly than previous initiatives. For example, previous approaches would offer homeowners water and energy saver kits by mail and customers would be required to install the devices themselves, leading to potentially low installation rates and persistence. Efficiency Manitoba plans to directly install energy saving products during the Home Energy Check-Up to ensure the devices are installed and being used in the home. This is a more expensive approach; however, it will lead to higher persistence and customer satisfaction.
142. Daymark, in its testimony, indicated that the Plan includes several best practices for improving access to hard-to-reach customers plus contributes a practice of its own. (See Daymark slide 66)

Deliverability of the Efficiency Manitoba Plan
Hard to reach customers: Best practices

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The Efficiency Manitoba Plan includes several best practices for improving access for hard-to-reach customers plus contributes one of its own. These best practices focus on financial incentives and bill-payment:

- 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)
- 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
- Efficiency Manitoba appears to be one of the first plans to include a "De-Cluttering" or site prep service that should be especially helpful to increase participation by senior citizens and be popular with delivery partners

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Deliverability of the Efficiency Manitoba Plan
Limitations to assessment

143. In efforts to increase accessibility to programming, First Nation customers in arrears will be able to access programs even if their Hydro bill is in arrears. (Transcript 876 line 10-14)
144. Efficiency Manitoba is working to increase access to its programming by reducing administration and paperwork requirements necessary to participate, recognizing that there are competing priorities for capacity in First Nations. (Transcript pg. 873 Line 7-13)
145. First Nation on reserve customers not only have access to all Efficiency Manitoba Programs but additionally have dedicated programming. (Transcript pg. 800 line 18 to pg. 801 line 2)
146. To address financial accessibility, there is no cost to the First Nation for the Insulation and Direct Install program. (PDF pg. 339 line 173). The incentives provided for the Insulation and Direct Install program are sufficient to cover the material costs and also to pay First Nation community members to do the installations without a cost to participants. (AMC-EM I-19)
147. Efficiency Manitoba aims to establish an Indigenous Energy Efficiency Working Group; this Working Group will allow Efficiency Manitoba to have real time feedback and help with the design and implementation of Indigenous programs to ensure that those programs meet the needs of the Indigenous customer segment. (Transcript 447 Line 23 and page 448 to line 8) and (PDF pg. 333 line 86-90).
148. EM acknowledges hard-to-reach customers extend beyond the definition of Income Qualified and Indigenous and could also include apartment dwellers, seniors and rural customers. In addition to Income Qualified Offers and Indigenous Programs, there are strategies within Residential Programs to target other hard-to-reach customers. (Coalition/EM I-8b)
149. In direct evidence provided by Mr. Grevatt on slide 44 of his presentation, it is recommended Efficiency Manitoba increase budget, savings, and participation in order to increase penetration of building envelope improvement projects for gas and electric customers.
150. As shown in response to EM/COALITION I-57 a-b, residential insulation incentives have been available since 2004 and over 43,000 homes have already undergone building envelope improvements, representing approximately 45% of the eligible available market. As confirmed by Mr. Friesen on transcript page 2259, customers who installed measures, such as insulation, in the past are still realizing the benefits of energy and bill savings associated with their insulation upgrades. Given the maturity of this market in Manitoba, Efficiency Manitoba affirms the projected targets are appropriate and realistic.

Subsection 11(4)(d) of the Act – Regulation Section 11 – Additional Factors To Be Considered

151. Section 11(4)(d) of the Act requires that the PUB consider any additional factors prescribed by the Regulation. Section 11 of the Regulation, addressed below, is where those additional factors are set out and considered.

Section 11 of the Regulation – Additional Factors That Must Be Considered**(a) Section 11(a) – Appropriateness of Methodologies**

152. Dr. Gravatt stated in his Report at page 2:

The Plan contains many of the programs that are typically included in comprehensive energy efficiency portfolios. These programs could, if budgeted appropriately and implemented effectively, provide significant opportunities to increase the energy efficiency of homes and businesses in the province.

153. Efficiency Manitoba maintains that the methodology it used to select or reject demand-side management initiatives was appropriate and carefully considered.

154. Under this subsection 11(a), the Public Utilities Board must consider the appropriateness of the methodologies used by Efficiency Manitoba to select or reject demand-side management initiatives.

Efficiency Manitoba has appropriately developed an electric and natural gas portfolio that balances multiple objectives.

155. In answer to Coalition EM I-14i, Efficiency Manitoba provided a summary of the step-by-step methodology used to select and/or reject demand-side management measures, which are set out below in paragraphs 169 to 172. Efficiency Manitoba utilized a three step process in regard to portfolio development selection.

156. Pre-Screening – Step 1 - Efficiency Manitoba took was a Pre-Screening Process, whereby Efficiency Manitoba screened out measures / technologies that did not warrant any quantitative cost benefit analysis.

157. Mr. William Harper, Expert for the Consumers Coalition in these proceedings, agrees with respect to the appropriateness of the pre-screening approach adopted by Efficiency Manitoba.

In my view, the screening criteria used by Efficiency Manitoba at this stage is reasonable. They are not overly restrictive, but rather focus on practical considerations.

Page 1732 of the Transcript, at Line 23

158. Preliminary Portfolio Development – Step 2 - Efficiency Manitoba used the energy efficiency measures remaining to develop a preliminary portfolio with the intent of achieving the mandated electric and natural gas energy savings targets.

Evaluation criteria were also used in the development of the proposed electric and natural gas portfolios. For this purpose, the key evaluation criteria used to determine the DSM initiatives to include in the final

portfolios were the level of energy savings, the program costs, and the program cost-effectiveness. – Mr. Harper

Page 1733 of the Transcript, at Line 3

159. Manitoba also analyzed and refined the portfolio. There were a number of changes to the natural gas and electric portfolio program bundles that were driven by the results of the multi-criteria decision analysis considering both quantitative and qualitative perspectives.

(i) Section A2 of the 2020/23 Efficiency Plan provides the descriptions of the detailed portfolio design process stages and specifically for the quantitative analysis completed to develop program costs and savings used within process.

(ii) Although Mr. Harper (Transcript 1736 – Line 9) expresses that he is unclear about the criteria used to develop the electric and natural gas portfolio, those criteria and considerations form the organization of the Sections of the 2020/23 Efficiency Plan, namely:

Section 2 - The Plan Achieves the Requirements of Efficiency Manitoba's Mandate & Regulatory Framework - This section outlines the required elements of the Act & Regulation as well as government directives

Section 3 - The Plan benefited from stakeholder engagement and examples such as the importance of maintaining the Continuity of Programs through services, programming and technical support (p. 92 of 591) where key considerations in designing the portfolio.

Section 4 - Ensuring that the Plan budget maximizes benefits for Manitobans. This includes providing 64% of the overall electric budget and 67% of the overall natural gas budget back to Manitoban's through program incentives, reducing staff costs while increasing private sector engagement while maintaining overall low overhead expense.

Section 5 - Ensuring that the overall electric portfolio is cost-effective with a PACT ratio of 3.27. Ensuring that the overall natural gas portfolio is cost-effective with a PACT ratio of 1.24 (when electric interactive effects are not used to penalize the natural gas portfolio)

Section 6 - Ensuring portfolio is diverse & inclusive.

I think the ask of Efficiency Manitoba with respect to balancing the needs of – and reaching all of Manitoba with programming; achieving the mandated energy savings targets; doing so in a cost-effective way at a portfolio level; achieving the objectives set out for hard-to-reach customer segments; listening to our stakeholders with respect to some of the things we heard; specifically, ensuring that there's continuity of programs, no loss of programming from Manitoba Hydro, for example; that --- there's an interest in customers to ease the – the burdens and red tape associated with applying for our programs. I think what we've put forward achieves an appropriate balance when all those are considered.

Page 350 of the Transcript, beginning at Line 18

160. **Alternative Portfolios / Sensitivity Analysis.** Subsequent recommendations were made by Mr. Harper that Efficiency Manitoba should have developed alternative portfolios to achieve the same outcome (Transcript Page 1738).
- These fall within the range of operating flexibility already contemplated within the execution of the 2020/23 Efficiency Plan
 - Developing alternate scenarios to achieve the same target provides little practical value.

Again, I think the important part is that directionally we've developed a portfolio that manages to strike that balance, and then with some flexibility and adjustments, that what actually is implemented at the end of the three (3) years most certainly will look different than exactly planned, because we will have to certainly make adjustments, and because of the flexibility we have and our nimbleness, we expect to be able to make those changes throughout.

Page 623 of the Transcript, at Line 19

(b) Section 11(b) – Consideration of Residential, Commercial and Industrial Customer Interest

161. Subsection 11(b) provides that the Public Utilities Board must consider whether the Plan adequately considers the interests of residential, commercial and industrial customers.
162. Efficiency Manitoba has established a balanced plan that provides balanced programming across the residential, commercial and industrial customers.
163. Efficiency Manitoba has dedicated significant portions of its budget to residential (19%), commercial (36%) and industrial is (20%) in regard to the electric budget.

The Efficiency Manitoba Plan
Electric portfolio impact

1

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- The Electric programs will involve each customer sector within Manitoba
- Business customers account for 77% of the savings with 60% of the budget

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

Customer segment/category	2020-23 Average		2017/2018
	Savings (%)	Budget (%)	Energy Consumption (%)
Industrial	39%	20%	66.10%
Agricultural	3%	4%	
Commercial	35%	36%	33.90%
Residential	22%	19%	
Income Qualified	1%	3%	
Indigenous	0.50%	3%	
Enabling Strategies	-	10%	-
Overhead	-	4%	-
Total	100%	100%	100%

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164. In regards to the natural gas budget, Efficiency Manitoba has dedicated significant portions of its budget to residential (21%), commercial (27%) and industrial (9%).

The Efficiency Manitoba Plan
Natural gas portfolio impact

1

2

Findings on compliance

Summary of the Plan

Completeness of the Plan

3

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- The Natural Gas programs will involve each customer sector within Manitoba
- Business customers account for 55% of the savings with 37% of the budget

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

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

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165. Efficiency Manitoba introduced ten new programs as part of the Plan, five of which were in the residential customer segment, and three new programs in the commercial customer,

industrial and agricultural segment. Efficiency Manitoba has also added over 30 new technologies or measures to enhance existing programs that will be continued.

166. As part of Daymark/EM I-92, a detailed table shows programs that were also enhanced by Efficiency Manitoba in the Plan through new measures being made available in each of the customer segments.

The Efficiency Manitoba Plan provides a comprehensive approach to industrial energy efficiency programming through a bundle of programs that address a variety of options for industrial electric and natural gas energy efficiency in industrial processes and facilities.

Page 2154 of the Transcript, at Line 22

167. As part of the Plan, Efficiency Manitoba recognizes that the investment in industrial projects can be very significant, and so imposed an incentive cap or limit as a result, Efficiency Manitoba is open to case-by-case considerations depending on savings, cost-effectiveness and other criteria. (Transcript page 547 line 6)
168. Residential customers have received the long-term benefit of detailed programming, and Efficiency Manitoba continues to invest in existing programs that work for the residential segment and to introduce new programming to meet the needs of the residential customer segment.
169. Daymark provided comment on Efficiency Manitoba's budget and plan offerings:

Again, just some more comparisons of budgets by sector. From a national context, the commercial is about percent of the budget, and here in Efficiency Manitoba, commercial's about forty-two (42) and industrial's twenty-four (24). Nationally, the industrial is about 15 percent, so it's -- you see the higher focus here on -- on moving towards the business sector. That's not -- that is a trend that is not unheard of. The residential sectors had a lot of attention earlier because they're easier to target. The commercial and industrial is always very difficult to convince that the payback is -- is sufficient to move them. They -- they don't like the impact on their businesses. There's a whole host of reasons that they're sometimes more difficult to go after, but it's -- it's a good focus for the Efficiency Manitoba plan. The program designs are similar in Manitoba to those nationally. There's lots of prescriptive lighting programs on the commercial side, consumer product rebates for lighting. There's commissioning, retro-commissionings, and commercial. The custom industrial agrigul -- agricultural processes -- the -- those are difficult to get in place, but once you do, there's lots of savings coming from them. And then prescriptive programs in the commercial side, making sure you're targeting certain measures and certain end uses.

Page 1328 of the Transcript, beginning at Line 20

...And then comparison of budget by sector on the gas side, again, commercial industrial is -- is about 37 percent nationally and about 10 percent on the Efficiency Manitoba side. The income-qualified is

something to take a look at here, and you'll see that the low income, nationally, is about 12 percent, and the income-qualified budget is about 33 percent on the natural gas side. So that is a very distinct effort to get at a very difficult market, and to be commended.

Page 1329 of the Transcript, at Line 24

On the program composition, Efficiency Manitoba, as we said earlier, relies on a continuation of legacy programs in Manitoba Hydro's most recent plan. They've revised and enhanced a lot of the features. There's some new program offerings and innovation in those -- in those programs, and the higher savings targets that must be met with a lower budget, which means it -- it's got to be improved, got to be achieved, through program implementation, better education for -- of the delivery partners who are implementing the program.

Page 1330 of the Transcript, at Line 9

170. Efficiency Manitoba has dedicated significant portions of its budget and programming to servicing the needs of residential, commercial and industrial customers as part of the Plan.

(c) Section 11(c) – Budget – Low-Income and Hard-to-Reach

171. Section 11(c) requires the Public Utilities Board to 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.
172. Efficiency Manitoba has continued and built upon existing Manitoba Hydro programming, as well as established new programming, in connection with low-income and hard-to-reach customers. Efficiency Manitoba has included this programming as it meets an important purpose under the Plan and confirms its position that dedicating at least 5% of its budget to initiatives targeting low-income or hard-to-reach customers is practical.
173. For the purposes of the Plan, Efficiency Manitoba has categorized “hard-to-reach” to include the income qualified and Indigenous customers (Plan PDF page 68, line 373).
174. This categorization allows Efficiency Manitoba to effectively quantify spending on these customer segments at 6% of the electric budget and 32% of the natural gas efficiency budget. (Plan PDF page 157).
175. Efficiency Manitoba has used a table to set out its budget by customer segment.

ELECTRIC & NATURAL GAS PORTFOLIO SUMMARY – COMPOSITION OF ANNUAL ENERGY SAVINGS & BUDGET BY CUSTOMER SEGMENT

	Customer Segment					
	Industrial	Agricultural	Commercial	Residential	Income Qualified	Indigenous
Annual Average	Electric Portfolio					
Energy Savings (%)	39%	3%	35%	22%	1%	0.5%
Budget (%)	20%	4%	36%	19%	3%	3%
Annual Average	Natural Gas Portfolio					
Energy Savings (%)	29%	1%	25%	37%	7%	0.3%
Budget (%)	9%	1%	27%	21%	30%	2%

Note. Programming budget values do not include cost components associated with Enabling Strategies and Corporate Overhead.

176. Efficiency Manitoba acknowledges that hard-to-reach customers extend beyond this definition and could also include apartment dwellers, seniors and rural customers. In addition to Income Qualified Offers and Indigenous Programs, there are strategies within Residential Programs to target other hard-to-reach customers. (Coalition/EM I-8b)
177. These customers will be reached through targeted marketing and engagement approaches within the program bundles. For example, renters who are living in multi-unit residences will be specifically targeted through the In-Suite Efficiency program bundle as presented in the Plan. As well, contractors, suppliers and retailers throughout the province, including those in rural and remote locations, will be brought on board to deliver Efficiency Manitoba’s programs. Ensuring products and contractors are available in rural locations is important for product rebate and home renovation offers. EM will ensure retailers with rural reach, including both “big-box” stores and independent shops, are engaged and adequately supported with point-of-purchase materials and sales associate training. (PUB/EM I-3a).
178. Therefore, it is reasonable to conclude that spending on hard-to-reach customers will likely exceed 6% of the electric budget when considering the additional targeted programming for renters and rural participants.
179. Efficiency Manitoba has carefully considered its budget allocations, and its obligations to ensure that its programs are accessible to as many Manitobans as possible. Efficiency Manitoba submits that its budget allocations, and programming, are both practical and necessary to achieve the aims of the Plan.

(d) Section 11(d) – Cost-Effectiveness at the Portfolio level

180. The PUB must consider whether the portfolio of demand-side management initiative required to achieve the savings targets is cost-effective.

See paragraph 133 to 139 of this written submission.

(e) Subsection 11(e) – Excess

181. Subsection 11(e) does not apply to the present Plan.

(f) Subsection 11(f) – Administration Budget

182. Under subsection 11(f) of the Regulation, the Public Utilities Board must consider whether Efficiency Manitoba's administration budget, namely overhead, is reasonable when compared to similar organizations.

183. Efficiency Manitoba's overhead budget is as set out in the chart below.

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% ↓

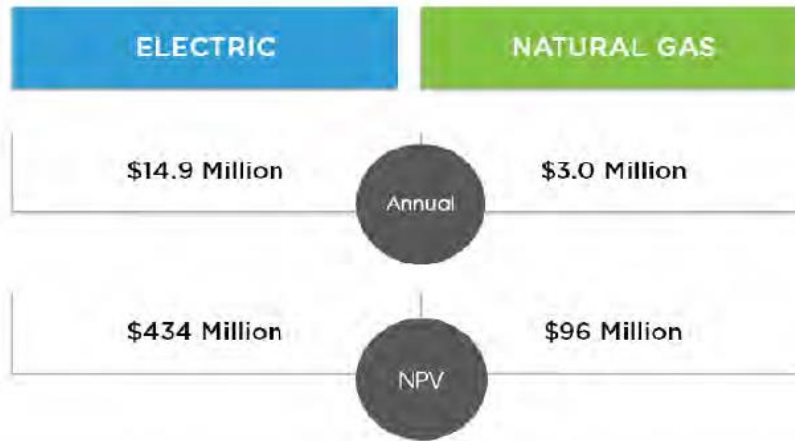
184. Compared to Manitoba Hydro's 2015/2016 Demand-Side Management Plan, Efficiency Manitoba's average annual costs are 9% lower in total, with staff costs being 37% lower and overhead costs being 32% lower.

185. Efficiency Manitoba maintains that it's administrative budget is reasonable and appropriate.

Subsection 11(g) – Customer Bill Impact

186. Efficiency Manitoba estimates that the annual bill savings for participating electric and natural gas customers may be approximately \$14.9 million and \$3.0 million annually. The net present value of the savings over 15 years is estimated to be \$434 million and \$96 million for electric and natural gas customers respectively.

5.5 ANNUAL BILL SAVINGS FOR PARTICIPATING CUSTOMERS ARE PROJECTED AT \$15 MILLION FOR ELECTRIC CUSTOMERS & \$3 MILLION FOR NATURAL GAS CUSTOMERS



187. Annual electricity bill savings by customer segment have been estimated based upon the forecast of customer participation and forecast energy reductions.

REVISED TABLE 5.8 ANNUAL AVERAGE ELECTRIC CUSTOMER PARTICIPATION & BILL SAVINGS

Customer segment / program bundle		Annual average electric bill savings	Total annual electric bill savings
Indigenous	Homes	\$470/house	\$147,000
	Small business	\$900/business	
Income qualified		\$410/house	\$203,000
Residential		\$80/house	\$1,769,000
Commercial, industrial & agricultural	Small business	\$1,000/business	\$12,567,000
	Suites	\$60/suite	
	Other business	\$4,300/business	
Emerging Technology Programs		\$1,500/project	\$171,000
Total annual electric customer bill savings			\$14,857,000

Highlighted sections have been revised.

188. A breakdown of the estimated \$3 million of annual natural gas savings by each customer segment is shown in the table below.

REVISED TABLE 5.9 ANNUAL AVERAGE NATURAL GAS CUSTOMER PARTICIPATION & BILL SAVINGS

Customer segment / program bundle		Annual average natural gas bill savings	Total annual natural gas bill savings
Indigenous		\$300/house	\$14,000 (natural gas) <u>\$4,000 (carbon charge)</u> \$18,000
Income qualified		\$290/house	\$287,000 (natural gas) <u>\$82,000 (carbon charge)</u> \$369,000
Residential		\$20/house	\$426,000 (natural gas) <u>\$131,000 (carbon charge)</u> \$557,000
Commercial, industrial & agricultural	Small business	\$70/business	\$1,452,000 (natural gas) <u>\$567,000 (carbon charge)</u> \$2,019,000
	Suites	\$20/suite	
	Other business	\$3,800/business	
Emerging Technology Programs		< 10 projects	\$23,000 (natural gas) <u>\$9,000 (carbon charge)</u> \$32,000
Total annual natural gas customer bill savings			\$3,000,000

Highlighted sections have been revised.

Subsection 11(h) – Reasonableness of the Projected Savings and Ability to Meet Targets

- 189. Subsection 11(h) of the Regulation requires that the Public Utilities Board consider the reasonableness of the projected savings and Efficiency Manitoba's ability to meet the annual savings targets.
- 190. Efficiency Manitoba has established a plan with reasonable and achievable projected savings. Efficiency Manitoba's projected savings have been discussed in detail previously in these submissions.
- 191. Daymark was very clear in their testimony, that the Plan contained no fatal flaws, including after become aware of the calculation correction made by Efficiency Manitoba in the IR process which affected its savings calculation:

So, those -- there are no fatal flaws here. There are just things to keep an eye on. And they -- we are well aware that Efficiency Manitoba knows they're there. They have the history with programs. And they have plans in place to monitor as they go through to do that, but I wanted to make sure that you were aware of those kind of concerns.

Page 1323 of the Transcript, at Line 8

192. As previously stated, Efficiency Manitoba may be a new organization but it is building upon a long legacy of energy efficiency programming that was started 30 years ago when Manitoba Hydro embarked on the Power Smart program in 1989.
193. While Efficiency Manitoba is a new organization, with a new culture and a highly focused mandate for energy efficiency, it leverages the strengths of its experienced staff and the knowledge of the Manitoba market that has been established by Manitoba Hydro over the past three decades.
194. Efficiency Manitoba is very aware of the challenges that it may encounter as it begins its operations on April 1, 2020. Efficiency Manitoba's witnesses have testified to the steps it is taking to manage and mitigate the risks in its initial period of operations.

Manitoba Hydro Provides Strong Support During the Ramp-up of Efficiency Manitoba's Operations

195. As is contemplated by the Act, the transition of demand-side management is supported by Manitoba Hydro.
196. Being the current sole funder of and significant benefactor from Efficiency Manitoba's Plan, Manitoba Hydro has a vested interest in supporting a smooth transfer of activities which may include the continuation of services until such time as Efficiency Manitoba is fully operational.
197. During the course of transitioning and in Efficiency Manitoba's ramp-up of operations, Manitoba Hydro has been and continues to provide support functions specifically in the areas of existing energy efficiency program delivery, procurement, finance, regulatory, information technology and creative services. The genesis and basis of this support is described and defined in the Crown Services Framework Letter dated April 24, 2019 to Ms. Marina James, Chair, Manitoba Hydro Electric Board where direction was provided, including:

We also ask that you assume ownership and leadership in respect of our following priorities for you:

Support the implementation of Efficiency Manitoba to ensure a smooth transition of Demand Side Management programs for Manitoba Hydro customers.

198. Ms. Kuruluk described the relationship between Manitoba Hydro and Efficiency Manitoba, from the start, as found at Transcript Page 182:

In terms of implementation, it's important to note that as much as we are a new company, we have the backing of Manitoba Hydro as both organizations have a vested interest in a successful transfer of DSM responsibilities.

In the very first month of my employment, the CEO of -- the then CEO of Manitoba Hydro, Kelvin Shepherd, signed a letter of understanding with me to ensure that Efficiency Manitoba had access to all of the operational support functions that exist in a long-standing Crown corporation.

The spirit of support has continued with the new CEO, Jay Grewal, and I extend my heartfelt appreciation to the many departments of my former organization that have extended the effort to support Efficiency Manitoba during this past year of transition.

199. Ms. Kuruluk provided evidence of the supportive relationship between Manitoba Hydro and Efficiency Manitoba throughout the start-up of operations, in her exchange with Board Counsel Steinfeld at page 302 of the transcript:

There is a continued support coming from the staff at -- at Manitoba Hydro, whether it's in support functions for procurement or IT or creative services. So, we feel that in combination of our transitional support from Manitoba Hydro, that we'll be fully ready to deliver on what we need to deliver on.

MS. DAYNA STEINFELD: And if the transition isn't complete as of April 1st, 2020, does that, I'll call it symbiotic relationship with Manitoba Hydro continue? Are they continuing to provide support after April 1st, 2020?

MS. COLLEEN KURULUK: Yes, that's correct. Until such time as -- as the transition is complete we expect to have that support.

From the Outset, Efficiency Manitoba is Building Upon Comprehensive Local DSM History and Experience

200. Although some in this proceeding have characterized Efficiency Manitoba as a "start-up", the organization is in the unique position of being able to draw from the experience of three decades of demand-side management experience at Manitoba Hydro, and to leverage the existing knowledge and experience in the Manitoba market for the provision of demand-side management programming. As noted by Ms. Kuruluk at page 183 of the transcript:

We are not starting with -- on -- from square one, trying to understand how to get efficiency in this market, and we've been doing it collectively for many years.

201. The Efficiency Manitoba 3-Year Plan builds upon a proven suite of existing demand side management programs that are currently delivered by Manitoba Hydro. Notwithstanding the new programs that Efficiency Manitoba has added to its electric and natural gas portfolios, the sustainment of current programming that is effective and valued by customers is an important aspect to the operationalization of Efficiency Manitoba.

202. As noted by Ms. Kuruluk at page 168 of the transcript:

We are able to build a new framework for an energy efficiency in Manitoba under a new organization and a fresh new culture, while at the same time building on an established and robust local energy efficiency legacy based on many years of experience, expertise, and knowledge, and not only in the staff that deliver the programs but also in the local market and industry that supports energy efficiency delivery to homes and businesses.

Efficiency Manitoba's Access to Skilled and Motivated Staff Mitigates Resourcing Risk

203. It is important to recognize that once its 3-Year Plan is approved, Efficiency Manitoba will be able to move forward with finalizing job offers to meet the staffing needs associated with its plan.
204. Efficiency Manitoba stresses the importance of obtaining a clear, unambiguous and positive outcome of the current review process in a timely manner, in order for it to proceed on track with its recruitment activities.
205. Highly motivated, skilled, and experienced staff exist at Manitoba Hydro, namely those staff that are currently designing and managing demand side management programming in the Manitoba market.
206. As discussed by Ms. Kuruluk at page 183 of the transcript,

So, our plan has accounted for a budget that includes up to seventy-five (75) staff. So, obviously, some of the more specific DSM expertise that we'll be looking for currently exists at Manitoba Hydro, so it's not -- not a skill set that is going to be hard for us to find.

207. Ms. Kuruluk confirmed in her testimony to the quality and experience of the staff currently at Manitoba Hydro, who are prime candidates to fulfill the various roles and responsibilities at Efficiency Manitoba. At page 187 of the transcript, she notes that:

We have experience with years of training and development and people who know the technologies, the market, and demand-side management industry metrics and modelling, just a few of whom are sitting in front of you today.

The Contracting of Third-Party Service Providers is Underway and is Manageable

208. Efficiency Manitoba and Manitoba Hydro have collaborated to ensure the effective and efficient transfer of existing third-party program implementation services contracts from one organization to the other.
209. Additionally, development is already underway for any services contracts required for April 2020.
210. Ms. Kuruluk, at page 183 of the transcript describes some of the steps that have been taken in order to facilitate the transfer of existing Manitoba Hydro contractual arrangements with third parties delivering DSM services:

In anticipation of Efficiency Manitoba's eventual assumption of the DSM programming in Manitoba, transferability clauses have been built into third party implementor contracts when new requests for proposals have been issued, or when renewals have been exercised.

And;

The plan calls for several third party implementors and several of those are already underway to have renewals.

211. In an exchange with Ms. Dilay at page 660 of the transcript, Mr. Stocki provided the following explanation:

Efficiency Manitoba stated here that it will require third-party service providers to meet its first year savings target, but this is not a risk to Efficiency Manitoba as procurement has already begun for the earliest offers and contracting is on schedule for initiation in early 2020

212. Efficiency Manitoba also provided more detail as to the transition and/or engagement of third-party contractual arrangements at page 8 of its rebuttal evidence filed on January 2, 2020.

Efficiency Manitoba is Managing the Acquisition of its Customer Relationship Management System (CRM) and Manitoba Hydro Legacy Systems Are Maintained Until the CRM is Fully Operational

213. One of Efficiency Manitoba's strategies is to employ information technology to provide for the efficient and secure acquisition and management of customer data and to provide improved information for management decision making.
214. Currently, Manitoba Hydro has information technology systems in place for current and previous demand-side management program operations. Those systems will continue to be in operation until such time as Efficiency Manitoba has completed the acquisition and implementation of a new Customer Relationship Management System, or "CRM".
215. In response to questions by Board Counsel, Mr. Roberto Montanino provided a comprehensive update on the work that is underway for the acquisition and implementation of the CRM system, beginning at page 551 of the Transcript. Mr. Montanino also provided a comprehensive explanation of the governance structure and management approach that is being employed by Efficiency Manitoba in the overall administration of the CRM information technology project. (Page 553 to 555 of the Transcript)
216. Mr. Montanino also explained the support that Manitoba Hydro has committed to sustaining existing DSM information technology systems for Efficiency Manitoba, until the implementation of the CRM system is complete and the system is fully operational. (Page 556 and 557 of the Transcript)
217. Efficiency Manitoba is taking reasonable and prudent steps to manage the acquisition and implementation of its CRM information technology.
218. Efficiency Manitoba and Manitoba Hydro have put in place processes to ensure all existing Manitoba Hydro systems will be fully maintained and operational until the new the CRM/DSM system is live, tested and completely operational.

Subsection 11(i) – Use of Private Sector to Deliver DSM

- 219. Section 11(i) of the Regulation requires that the Public Utilities Board to consider Efficiency Manitoba's use of private-sector enterprises and non-governmental organizations to deliver demand-side management initiatives.
- 220. Efficiency Manitoba, in addressing subsection 11(h), specifically addressed certain of Efficiency Manitoba's use of private-sector enterprises to deliver demand-side management initiatives.
- 221. Efficiency Manitoba has detailed its intended use of private-sector enterprises and non-governmental organizations to deliver demand-side management as part of the Plan and through its testimony as part of these proceedings.

Subsection 11(j) – Plan Considers New and Emerging Technologies

- 222. Efficiency Manitoba's Plan provides for the identification of emerging technologies at the pilot and research and development phase, has a designated segment for Emerging Technologies, and contains flexibility to capitalize on opportunities, including as may be necessary through the Contingency Fund.
- 223. Efficiency Manitoba has detailed its Enabling Strategies and Emerging Technology segments as part of these submissions. (see paragraph 20)
- 224. There has been a detailed discussion as part of these proceedings concerning cold climate air source heat pumps. Efficiency Manitoba's approach to Cold Climate Air Source Heat Pumps is practical and serves the interests of customers.
- 225. Efficiency Manitoba recognizes that Cold Climate Air Source Heat Pumps (ASHP) are a promising technology that have experienced an increase in adoption in several markets in the continental United States.
- 226. Efficiency Manitoba is taking a reasonable and prudent approach with regard to the deployment of this technology in Manitoba's severe climate.
- 227. As noted on page 9 of Efficiency Manitoba's Rebuttal Evidence, the 2017 Residential End Use Survey indicates that only 0.2% of Manitoban's currently use an ASHP as their primary space heating system (2017 REUS - Section 2 - Space Heating, Table 2.05b, page 31).
- 228. While the current market penetration for space heating is low, Efficiency Manitoba understands that these units are beginning to be retrofitted into older residences that lack central air conditioning systems, primarily for space cooling applications.
- 229. As noted by Mr. Stocki on page 756 of the transcript:

...anecdotally what we hear is that the air source heat pumps are being installed for air conditioning purposes only, not for heating purposes...

(BRIEF PAUSE)

MR. MICHAEL STOCKI: And -- and specifically what we've heard also from industry is that the desire --because it's for air conditioning purposes, where those customers are interested in older homes that don't have a -- a central air system, so that you can relatively easily or more easily install an air source heat pump, ductless technology, versus having to install a new central air system, including all the duct work associated with that.

So, essentially, what you're doing then for the summer loads are -- are loa -- adding to the electric capacity requirements, adding to the electric load instead of reducing or saving energy in that instance.

230. Efficiency Manitoba notes that while the ASHP technology has been improving, there is a lack of information with regard to actual cold climate operating performance in extreme weather zones as typically found in Manitoba. At page 374 of the transcript, Mr. Stocki states:

so some of the challenges within a cold Manitoba climate, say, for example, on a day like today or based on this week's forecast, there'd be limited operating hours from an air source heat pump just because there's not enough heat energy available in the air once you get below minus 15, minus 20, to actually use that unit effectively.

Additional Matters Raised for Consideration by the Public Utilities Board in Connection with its Review

231. Efficiency Manitoba has identified a number of key issues that have been discussed in detail in these proceedings and which Efficiency Manitoba submits are of significant importance to discussions and considerations regarding the Plan and any potential recommendations, should the Public Utilities Board determine any such recommendations are required as a result of its review. The following, are of course, in addition to the focused statutory discussion that forms part of these submissions.
232. These key issues are:
- a. Measure Level Detail and the Impact of Commercially Sensitive Information;
 - b. Codes and Standards;
 - c. Levelized Rate Impact; and
 - d. Air Source Heat Pumps in Diesel Communities.
- a. Measure Level Detail and the Impact of Commercially Sensitive Information
233. Questions and comments have been raised in connection with this proceeding regarding accessibility of intervenors and their respective consultants to measure-level data. There has also been comment on measure-level calculations.
234. Efficiency Manitoba values openness and transparency, however it is acknowledged as part of these proceedings that the work papers that Efficiency Manitoba used to build its Plan necessarily contained marginal value information for natural gas and electricity which is considered commercially sensitive information and is the subject of a Non-disclosure agreement between Efficiency Manitoba and Manitoba Hydro.

235. Given restrictions concerning commercially sensitive information, work papers could only be provided to the Public Utilities Board Independent Expert Consultant. The work papers that were provided to the PUB's Independent Expert Consultant were thoroughly detailed to the measure level and provided the transparency that was required while ensuring that commercially sensitive information was appropriately limited.
236. The PUB's arrangement for an Independent Expert Consultant (IEC) was an effective and reasonable approach to ensure a thorough review of the Plan in a cost-effective manner, however, unfortunately the process did not seem to alleviate the concerns of intervenors.

Mr. Stocki went on to explain the challenges of responding to IRs that requested the granular levels of detail at the measure level when cross examined by Coalition's counsel about Efficiency Manitoba's intention to develop a central repository for measure level MR. MICHAEL STOCKI: (Tr. Page 619 line 5) So in general, I can speak generally to the process and the lessons learned so far through going through this process. So certainly, Efficiency Manitoba takes the heart of some of the various criticisms that we've received with respect to the availability of information, whether or not it's containing CSI or not, whether or not it was provided in a timely enough manner. So all of that, we're taking in all that feedback. This is part of the ongoing process of continuous improvement. And so certainly with respect to the -- the central repository and having access to measure level detail, I don't think we fully appreciated going into this process the level of information that would be requested by every single Intervener. Certainly when requested, we provided that measure level detail in the spreadsheets that contain the confidential information to Daymark, the PUB advisors. But with respect to having a repository that had already stripped out that confidential information, we simply didn't have it. And so, although we've strived to provide that in several different IRs, and I think we've done a -- a reasonable job of subsequently providing some of that information. So certainly, that's a valuable lesson learned for us going forward.

237. Coalition's expert, Mr. Grevatt, did concede that the measure level detail was reviewed by Daymark, although he also seemed concerned that perhaps Efficiency Manitoba had not designed its Plan with this level of detail available to it.

MS. JESSICA SCHOFIELD: And you're aware that the -- I see Daymark received all of the detailed measure level work papers, which included CSI values, correct?

MR. JIM GREVATT: I understand that that's what's been represented in filings in -- in the proceeding, but of course, I have no way of confirming whether that's true or not.

MS. JESSICA SCHOFIELD: But you understand that Daymark has testified in this proceeding that they received all of that information, correct?

MR. JIM GREVATT: Yes.

238. Efficiency Manitoba has in fact, considered its program portfolio design from the measure level up. Starting at Transcript page 1263 line 23 Daymark describes the detailed level of analysis employed by Efficiency Manitoba in the development of the Plan.

MR. JOHN ATHAS: (Tr: page 1263 line 23) But they went into detailed analysis on costs of the -- of the programs, costs of the - administrative costs of the programs, how to do customer support for the people that are in their programs, and -- and even -- and on their overhead and what their incentives would be and the like. So, they -- they didn't start -- they didn't do an analysis by taking rough estimates of what -- of what programs would cost from other people. They -- they naturally had a good starting base of information from Manitoba Hydro's work. Many of the spreadsheets started there. But they -- just to give you an idea that there's many components of costs that had to be estimated, and they did it at -- as granule level as - as we've seen in the Efficiency utility, or utility, do it -- do that analysis.

MR. JOHN ATHAS: (Tr: page 1265 line 15) But -- but to understand what they're - whether they're doing the savings calculation as to what will happen when they do things, they do that at the measure level. And they have taken most of that information from -- from Manitoba Hydro in the past.

MR. JOHN ATHAS: (Tr: page 1266 line 16) So they've made those assessments at the measure level. So they've done some detailed thinking throughout the -- the valuation of the plan, the creation of the designs, and the like, and from everything that we've seen and were able to look at, they properly accounted for these effects.

239. Efficiency Manitoba respectfully submits that the provision of measure-level data (that either directly or indirectly contains commercial sensitive information) to Daymark for consideration and reporting, continue to be the process by which the PUB reviews Efficiency Manitoba's plan.

b. Codes and Standards

240. Claiming energy efficiency savings from codes and standards has been a consistent point of discussion throughout these proceedings.

i. Codes and Standards Savings Are Appropriate and Represent Long Term Benefits

241. The application and allocation of Codes and Standards by Efficiency Manitoba is reasonable and supports an overall low-cost portfolio of energy savings.

242. Efficiency Manitoba will have a valuable and important role in ensuring that the long-term beneficial impact of energy efficiency of codes and standards initiatives is a resource that is secured for all Manitobans. The role Efficiency Manitoba will pay in regard to codes and standards has been uncontested throughout the oral testimony of these proceedings.

243. As suggested by Mr. Friesen beginning at transcript page 2200 line 3:

244. I believe that Efficiency Manitoba's well positioned to lead this pro -- the process for facilitating the development and implementation of codes and standards applicable to Manitoba and it should work closely with Manitoba Hydro to ensure that the load forecast

aligns with savings targets reported by Efficiency Manitoba. There is room for a lot of cooperation between the utility and the efficiency agency in this case and we should maximize that cooperation through our recommendations to the Province.

245. As noted in Efficiency Manitoba's rebuttal evidence (Exhibit-13: page 4 line 5), Utilities and program administrators are in a unique position to facilitate the advancement of energy efficiency through the development of building energy codes and appliance and equipment standards. Efforts to improve energy efficiency in building codes or product standards are long term strategies that involve activities completed by staff dedicated to energy efficiency irrespective of their specific employ or where these activities are undergoing a one-time a transfer of responsibility from Manitoba Hydro to Efficiency Manitoba. Activities that Efficiency Manitoba will be undertaking in support of the evolution of codes and standards within the Plan will improve the energy efficiency of buildings constructed and appliances purchased in Manitoba in subsequent 3-Year efficiency plans.
246. Additional experts shared similar views on the value of codes and standards savings in connection with these proceedings:

MR. JIM GREVATT: (Tr. 1776 line 170) So I want to say, I think codes and standards savings are an absolutely legitimate, valuable resource, and that it's perfectly appropriate for efficiency programs to undertake activities that either promote adoption of increased codes and standards or that increase compliance with existing codes and standards and to claim savings for that. And I recommend this in other jurisdictions. There's a lot of work in making these things happen, -- you know, providing some of the technical expertise and some of the training that will allow success with those codes. And if the utility -- or in this case, Efficiency Manitoba -- doesn't have the ability to claim some savings for those activities, they have no reason to participate, and that's not, I don't think, in the public interest. I think it's better if they participate and actively help support these codes and standards.

MR. JOHN ATHAS: (Tr: page 1342 line 6) You -- you certainly don't want to put something as an incentive in place where Efficiency Manitoba would rather have a program than a code change. Code changes can be extremely low-cost and an effective way to do things. There's been some questions about code compliance in the past that --that -- in the current code change out there and they want to beef up those compliance. So it's -- it's good to have, you know, savings from some activities that Efficiency Manitoba would -- would conduct to improve codes, approve efficiency through codes, as well as through programs. Because like I said, the last thing you want to do is have somebody not really have a dis-incentive to kind of help code go into effect.

247. The cost effectiveness of codes and standards is further supported by the direct evidence of Mr. Dale Friesen where he shows an acquisition cost for codes and standards for each year of the Plan equaling \$0.004/kWh compared to a range of \$0.054/kWh (industrial segment) to \$0.384/kWh (residential)[1]

MR. DALE FRIESEN: (Tr: page 2181 line 19) What the -- table 319 at the bottom of the slide illustrates is, again, how extremely cost effective codes

and standard savings are. We need to capitalize on every single codes and standards savings we can because it contributes to a cost-effective plan and achievement of savings targets. (Tr: page 2181 line 19).

248. Residential customers, and even low-income residential customers, do in fact benefit from both code activities as well as equipment and appliance standards.
249. The benefit of building codes are not restricted solely to those customers building or renovating a new home. Many residential customers are tenants, whom are also a segment of concern raised by the Consumers Coalition, in either single family dwellings or multi-unit residential buildings; both of which now have energy efficiency requirements in building codes.

MS. KATRINE DILAY: And in light of the importance of low-income energy efficiency programming, and as well as barriers to participation that we've just gone through, can you elaborate on how Efficiency Manitoba concluded that relying on codes and standards as the large proportion -- the largest proportion of savings for residential customers would meet the needs of residential customers?

MS. COLLEEN KURULUK: So I -- I wouldn't concur that we relied on the codes and standards savings to meet the needs of residential customers. We built our programming from the ground up and from the end-use consumption, in where energy is consumed in a residential household, and built our programs around that. So I -- I wouldn't agree that we're relying on codes and standards to make up the residential portfolio of energy savings.

Page 696 of the Transcript, at Line 3

MS. COLLEEN KURULUK: However, renters or people in multi unit residential buildings would gain the benefit of those codes through the commercial aspects of the energy code.

250. Similarly, appliance standards can and do benefit residential customers including lower-income Manitobans and tenants in rental properties.

MS. KATRINE DILAY: And so that means that a standard would impact a customer if they are buying or replacing an item, material, component, system, or service, correct?

MS. COLLEEN KURULUK: That's correct. So a residential customer that is buying a new refrigerator, for example, will attain the benefits of new energy -- minimum energy performance standards of that refrigerator. And once the standards are in place, it actually has the added benefit of reducing the cost of what typically would have been more expensive, higher performing products. So once they're regulated, the costs typically come down. So there's a benefit from the energy savings as well as the price of the purchase of a higher performing product.

At transcript page 1555 line 13, Ms. Kelly was questioned by Ms. Schofield and asked about certain matters related to commercial codes benefiting hard-to-reach customers:

MS. JESSICA SCHOFIELD: And Efficiency Manitoba has been able to offer a wide range of -- range of programs to these customers, correct?

MS. KATHLEEN KELLY: The -- the plan includes a wide range of programs. The implementation has to be monitored.

MS. JESSICA SCHOFIELD: Yes, thank you. And you would agree that renters, or people living in multi-unit residential building, would gain the benefit of commercial codes when a major renovation occurs as well as when a building is constructed, correct?

MS. KATHLEEN KELLY: Yes.

Tr: Page 1555 line 13

251. Residential customers do in fact benefit from standards.

MS. JESSICA SCHOFIELD: And so based on these figures, subject to check, I would suggest that there's a three-year average savings from code of 14.8 and a three-year average savings for standards of 29.3.

MR. JOHN ATHAS: Subject to check, yes.

MS. JESSICA SCHOFIELD: Thank you. And so, based on those calculations, you would agree that the majority of savings for residential customers come from standards, correct?

MR. JOHN ATHAS: But you -- versus codes and standards?

MS. JESSICA SCHOFIELD: Yes.

MR. JOHN ATHAS: Okay. Yes.

MS. JESSICA SCHOFIELD: And these are potential savings for -- that could affect all residential customers, correct?

MS. JESSICA SCHOFIELD: And these are potential savings for -- that could affect all residential customers, correct?

MR. JOHN ATHAS: This is an opportunity for all resident -- each residential customer to -- to have savings because of the code and standard.

252. Based on evidence put forward by several experts in this proceeding, savings from codes and standards benefit all Manitobans.

253. MIPUG counsel and experts also raised the question of whether Efficiency Manitoba should be claiming or reporting all savings due to the impacts of codes and standards and suggested that demonstrating "a material contribution" with the potential of de-rating the

savings due to attribution methodologies will not accurately reflect the full resource that is available from this DSM initiative.

254. At transcript page 930, line 18 Mr. Hacault questioned Ms. Kuruluk and asked about certain matters related to codes and standards:

MR. ANTOINE HACAULT: We'd be saying, You can count 100 percent of it because it really helps me achieve the goal in the long run. We shouldn't be discounting the contributions that are made by codes and standards.

MS. COLLEEN KURULUK: Okay, I -- I think I see where you're -- where you're asking now. So -- so absolutely. I mean, codes and standards is a real impact on the actual load in Manitoba, so I think Bowman what Mr. Hacault is -- is -- is asking is, Wouldn't 100 percent of that activity result in an impact to the -- to the load? And to the extent that he's saying that, I would agree. Those -- those -- that is true.

MR. ANTOINE HACAULT: And what the legislation appears to be saying, however, is, Efficiency Manitoba, you need to show that -- you send somebody to a committee, you need to show that you had a causal connection. And once we -- somebody's thinking that that causal connection is enough or not enough, you get to count it, but that would be counterintuitive to the whole planning process because you're only counting maybe 50 percent of it or 10 -- 10 percent of it. Do you agree with that concept?

MS. COLLEEN KURULUK: Yes, I agree with that concept. And codes and standards in attribution towards program administrators and utilities is certainly an evolving field. I, certainly, I believe, mentioned, whether it was yesterday or the day before, there's different jurisdictions in Canada that -- that claim 100 percent of that code and standard because they are feeding into a load forecast, as Mr. Hacault has mentioned. And there's other utilities, primarily in Unite -- the United States, that have attribution models that speak to materiality such as what's in our -- in our regulation.

MR. ANTOINE HACAULT: And while that incentive or that kind of -- you don't get to count it unless you spend money or you send people to committees might be a valid objective, I would suggest, for private corporations. I'm suggesting to you that for a Crown corporation that has public accountability in what it does, that objective might be less important of pushing somebody to spend a lot of money and pushing somebody to spend -- to show that they had a material contribution.

(Tr: Page 30 line 18)

MR. ANTOINE HACAULT: And as I understand your testimony, one (1) of the reasons why we might look at materiality is that there might be a concern that there isn't init -- and -- initiative or incentive for Efficiency Manitoba to continue to invest in codes and standards. You may not

devote as much time to it, and you may not get the same results? (Tr: Page 1468 line 15)

MR. JOHN ATHAS: We -- we are -- we're -- we don't think that this approval of a plan here is necessarily about trying to figure out a way to account for everything under the -- everything that you'd want to do, or -for accounting for energy efficiency, because it's - it -- I -- I think this is more about, like I said, giving Efficiency Manitoba the incent -- the -- the right direction and oversight to do what you want to them to do. So whether it's, you know, if it's something that's done by a tot -- another organization within the government and other things like that, nobody knew anything about it, you know, it's probably not worth the time talking about here, because you -you want -- you want to talk about what you want Manitoba -- or Efficiency Manitoba to do. And that's -- that's a choice. So that -- so the -- that's kind of how we view this -- this effort here. And -- and there is some question in our own judgment -- we don't know essentially how to interpret the -- the starting time, and the degree of material effect that you'd have to have with the -- in the -- in -- based on the regulation and the Act to acc -- account for -- to let codes and standards count. We don't -- we don't know what the right interpretation of that. There's no -- there's no right or wrong. You know, I mean, there's -- there's just what do you want -- what do you want to -- how -- how do you want the number to count? (Tr: Page 1469 line 10)

255. The savings projected in the Plan from Codes and Standards is conservative and will be independently accessed by a third-party evaluator. It is possible that the third-party assessor may disagree with the savings that Efficiency Manitoba has projected due to codes and standards, but it is also entirely possible that additional savings will be claimed from commercial product standards that have been funded and supported technically by Manitoba Hydro. The third-party assessor that will be contracted by Efficiency Manitoba will employ best practices in evaluation protocols to assess both Efficiency Manitoba's and Manitoba Hydro's contribution towards codes and standards savings as outlined in the Regulation s. 8(c).
256. As part of Information Request response PUB/EM I-39, Efficiency Manitoba confirmed activities to be undertaken under the Plan in regard to codes and standards efficiency.

Efficiency Manitoba will continue to offer voluntary programs that encourage customers and industry to pursue higher levels of efficiency in advance of the building code cycle or prior to the implementation of energy efficiency regulations on products. These energy efficiency programs are critical to achieving market-readiness for the implementation of new codes or regulations. Program staff work closely with industry to increase awareness and build expertise. The programs promote energy efficiency products and practices which increase the demand for and availability of the products and services in the market. The increased demand and availability also drive down pricing over time, improving the economics of the energy efficiency products and practices. These program efforts ready the market and facilitate a smoother transition and adoption of the building codes and product standards.

c. Levelized Rate Impact.

257. The Lifecycle Revenue Impact is a valid methodology to represent impacts.
258. The impacts of Efficiency Manitoba's Plan on Manitoba Hydro's cost of service can only be fully determined by incorporating the costs, benefits and load changes into Manitoba Hydro's (and Centra Gas') financial forecasts. As noted in the response to PUB/EM I-22 a, such information and analysis is not available to Efficiency Manitoba and detailed cost of service analyses and rate impacts by customer class can only be addressed by Manitoba Hydro or Centra Gas in the course of future general rate applications.

259.

260. LRI is an economic test that takes the present value of program costs, incentives and lost utility revenues less the present value of the marginal utility benefits in the numerator and divides that value by the present value of total system energy in the denominator to arrive at a unit value per kWh (or per cubic meter). The LRI metric was selected by Efficiency Manitoba as it utilizes the same components as the PACT test, plus the inclusion of lost utility revenue and is shown in the following equation:

$$LRI = \frac{PV(\text{Program Costs} + \text{Incentives}) + PV(\text{Revenue loss}) - (PV) \text{ Marginal Benefits}}{PV(\text{System Energy})}$$

261. In general, if the change in utility revenue and costs associated within 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 and costs, the LRI will indicate a decrease in rates. Therefore, the LRI test will indicate the direction and magnitude (measured per unit of energy) of the expected change in utility rate levels attributed solely to the Plan.

262.

263. The LRI was selected as a proxy to approximate the rate implications of its Plan and it is a valid metric to use in considering the overall rate and bill impacts for customers. As noted by Daymark in its response to MIPUG/EM I – 15 c):

Daymark believes that the metric of LRI can provide useful information when considering the plusses and minuses of a proposed energy efficiency plan investment, as compared to the RIM results, since the LRI metric is more indicative of the actual impacts that will result.

264. Efficiency Manitoba chose a 30 year term for the LRI calculation, which Mr. Stocki explained the choice of the 30-year term in his exchange with Board Counsel at page 569 of the transcript:

265. Daymark provided an alternative derivation of the LRI by considering measure life in weighting the calculation. As Daymark notes in its response to MIPUG/DAYMARK I-15 c):

Efficiency Manitoba's metric essentially spreads all bundle/program/measure impacts over a 30- year lifecycle, even though measure lives are mostly much less than 30 years. Daymark has

recalculated the LRI in Section IV.H, as shown in Tables 42 and 43 of our report, taking into account the lives of the measures by grouping measures into five-year groups by lifespan. This provides a more accurate illustration of the likely impact on rates for the electric and natural gas portfolios in the short-term periods of the first five years and second five years of the implementation of the Plan.

266. The term of the LRI calculation was examined in Coalition/EM I – 33 f) and g) in which Efficiency Manitoba also calculated the LRI for electric and natural gas portfolios under both 10 year and 5 year terms. The following table reproduces the results of the LRI calculation for 30, 10 and 5 year terms, as well as the results of Daymark’s alternative analysis are shown below in Tables 42 (electric) and 43 (natural gas) reproduced from their direct evidence presentation:

	Efficiency Manitoba			Daymark	
Table 5.6 – Electric Portfolio	30 year	10 year	5 year	1st 5-yr	2nd 5-yr
Lifecycle revenue impact (¢/kWh)	0.019¢/kWh	0.062¢/kWh	0.13¢/kWh	0.059¢/kWh	0.031¢/kWh
Percent increase (using 6¢/kWh)	0.32%	1.04%	2.16%	0.99%	0.52%
Percent increase (using 8¢/kWh)	0.24%	0.78%	1.62%	0.74%	0.39%
Percent increase (using 10¢/kWh)	0.19%	0.62%	1.30%	0.59%	0.31%
Table 5.7 - Natural Gas Portfolio	30 year	10 year	5 year	1st 5-yr	2nd 5-yr
Lifecycle revenue impact (¢/m3)	0.23¢/m3	0.45¢/m3	0.77¢/m3	0.41¢/m3	0.24¢/m3
Percent increase (using 19¢/m3)	1.22%	2.36%	4.04%	2.17%	1.25%
Percent increase (using 21¢/m3)	1.10%	2.13%	3.66%	1.97%	1.13%
Percent increase (using 23¢/m3)	1.00%	1.95%	3.34%	1.79%	1.03%

267. Efficiency Manitoba’s adjusted LRI calculation using the 10-year term produces results that are relatively close to the first 5 year period of Daymark on a percentage basis (0.062 cents/kWh for Efficiency Manitoba and 0.059 cents/kWh for Daymark).
268. In Coalition/Daymark I – 10, Daymark estimated the weighted measure life for electric measures as 8.8 years. Mr. Harper, at pages 43 of his evidence, suggests that the PUB should consider the 10-year LRI value in addition to the longer term 30 year values. Efficiency Manitoba acknowledges that the use of a 10 year term for the LRI calculation in addition to the 30 year term is reasonable.
- d. Air Source Heat Pumps in Diesel Communities.

269. Cold Climate Air Source Heat Pumps are not appropriate alternatives for installation in remote diesel communities.
270. At transcript page 2083, Board Member Hamilton posed a question to Mr. Neme regarding the potential for cold climate air source heat pumps to replace electric heating, specifically in the Diesel Communities:

Mr Neme, one further question with regard to the diesel communities... if there were the use of heat pumps in diesel communities to replace electric resistance heating, is that going to result in reduced GHG because you’re burning less diesel to create the energy necessary to run those pumps?

Chris Neme – “Absolutely”

271. At transcript page 2263-2265, Mr. Bowman was questioned by Ms. Schofield and asked to confirm certain matters about electrical service in Diesel Communities:

MS. JESSICA SCHOFIELD: Mr. Bowman, do you recall Board Member Hamilton's question to Mr. Neme with respect to diesel communities?

MR. PATRICK BOWMAN: Yes.

MS. JESSICA SCHOFIELD: And you've appeared at a number of Manitoba Hydro rate applications that in part addressed rates and service to diesel communities, correct?

MR. PATRICK BOWMAN: I have. But I've -- I've also done a lot of work with diesel communities across Canada's north and in -- and rural Newfoundland and the like, probably most of the diesel communities in Canada, frankly.

MS. JESSICA SCHOFIELD: Thank you.

And you're aware that Manitoba Hydro provides residential electrical service in those diesel communities but those loads are subject to a service limitation of 60 amps, correct?

MR. PATRICK BOWMAN: Yes.

MS. JESSICA SCHOFIELD: And you would agree that Manitoba Hydro has the service -- service limit criteria to provide sufficient electrical capacity for lights and household appliances to operate, correct?

MR. PATRICK BOWMAN: Yes.

MS. JESSICA SCHOFIELD: And it's my understanding that this service limit does not allow sufficient electrical capacity for electrical space heating in the residence?

MR. PATRICK BOWMAN: That -- that would not be possible within the limits that are -- that are there. You can't do heating on that level of service.

MS. JESSICA SCHOFIELD: Thank you. And you would agree that the conversion of residential heating load from oil to heat pumps could significantly increase the electrical load on Manitoba Hydro's distribution system and diesel generating facilities in those communities, correct?

MR. PATRICK BOWMAN: Yes.

MS. JESSICA SCHOFIELD: And such a load increase could result in a significant increase in the quantity of diesel required to generate electricity, correct?

MR. PATRICK BOWMAN: It would increase the diesel fuel. It would drive material investment in diesel capital of units. It would increase the risk in

the communities of what happens when a diesel plan does things that sometimes they want to do, like burn down, which -- a few of which I've dealt with. They -- it's -- it's a good idea not to expose your heating in the community to the diesel -- diesel generated electricity.

MS. JESSICA SCHOFIELD: Thank you, Mr. Bowman.

272. At transcript page 2261-2262, Mr. Friesen was questioned by Ms. Schofield and asked about certain matters related to air source heat pumps.

MR. DARREN FRIESEN: "The challenge we have in using that technology is that it is ver -- the effectiveness of that technology and the capability to deliver that capacity is very dependent on the quality of the installation and the design of the installation.

I -- in -- in their evidence, Efficiency Manitoba indicated that they felt the market, the delivery, the distributor, the installer at this point in Manitoba was not adequately trained or capable to deliver the proper design and installation, and I would share that concern."

Efficiency Manitoba is of the view that the electrification of residential space heating in the Diesel Communities, by cold climate air source heat pumps or by other electrically driven means, is not a feasible solution given the reliance on diesel power plants for the generation of electricity in those locations.