REFERENCE: Potential Studies

PREAMBLE TO IR (IF ANY):

Energy efficiency potential studies provide a basis on which to effectively establish savings targets and plan and target programming. The last potential study undertaken in Manitoba was performed in the lead up to the NFAT review in 2012-13 & 2013/14 based on loads assessments in 2010, nearing 10 years ago.

RATIONALE:

MIPUG wishes to explore Daymark's view of the need for Efficiency Manitoba to undertake an energy efficiency potential study.

QUESTION:

(a) Please provide Daymark's view of the benefits and need for Efficiency Manitoba to undertake an energy efficiency potential study during the course of this initial Three-Year Plan.

(b) Provide Daymark's view regarding the benefits that undertaking an energy efficiency potential study would have for the short and long-term achievement of Efficiency Manitoba's savings targets.

(c) Explain Daymark's view of the benefits that undertaking an energy efficiency potential study would have for the Public Utilities Board and Interveners.

(d) Explain Daymark's view of how an energy efficiency potential study could assist the Province of Manitoba in established regulatory targets for both annual and cumulative savings.

RESPONSE:

a) The benefit associated with undertaking an energy efficiency potential study is getting a formal estimate of the technical, economic and achievable energy savings for one or more program measures by customer class over a specified number of years in the future. Periodic updates to potential studies are done to revise the program design to include more efficient equipment options and adjust incentives to maximize cost-effective participation. However, broad-based improvements in equipment efficiency ratings may take a few years to spread throughout supply chains, suggesting that the impact of such updates are greatest when done at 4 to 5-year intervals.

b) It is Daymark's understanding that Manitoba Hydro completed its last energy efficiency potential study in 2014, suggesting that Efficiency Manitoba's next three-year plan could benefit from commencing an updated energy efficiency potential study as soon as next year. Because such studies take a few years to complete before results are available that can be applied to program design, it seems unlikely that such a study would be completed in time to have an impact on the short-term achievement of Efficiency Manitoba's savings targets, but it could provide information about whether long-term targets would be met.

c) See a) and b) above.

d) An updated energy efficiency potential study may reaffirm established annual and cumulative regulatory targets or suggest different targets to be considered. The main benefit of such a study would be to assist in determining whether there are potential measure revisions that should be incorporated within the electric and gas portfolios. A potential study could inform new program choices or the redesign of programs or bundles.

REFERENCE: Annual versus Cumulative Savings

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba's Three-Year Plan appears to have an annual focus in its construct with many measures providing savings in the first three years having short lifecycles. Efficiency Manitoba also uses a lifecycle methodology for evaluating benefits that limits the benefits obtained from a measure to one life cycle.

RATIONALE:

MIPUG wishes to explore Daymark's view of the sustainability the Efficiency Manitoba Plan and understand whether Daymark advocates for an approach that considers re-investment and the sustainability of savings beyond one life cycle.

QUESTION:

(a) Please explain whether Daymark sees value in adopting a longer-term approach to energy efficiency that considers re-investment in measures that have short life cycles when establishing the long-term benefits of programming.

(b) What risks are imposed on the Plan with the current life cycle methodology adopted by Efficiency Manitoba.?

(c) What benefits are provided to the Plan with the current life cycle methodology adopted by Efficiency Manitoba.?

(d) In the view of Daymark, does the current life cycle methodology used by Manitoba Hydro confuse the interpretation of the savings targets specified in the Efficiency Manitoba Act and related Regulation.?

(e) In the view of Daymark, are the cumulative targets specified by the Act as outlined in the Regulation sustainable and achievable.?

RESPONSE:

(a-c) Please see response to PUB_Daymark IR 1-2a.

(d-e) Please see response to PUB_Daymark IR 1-2b.

REFERENCE:

"The Efficiency Manitoba Plan proposed Plan calls for spending approximately $200 million over three years to attain cumulative total energy of 403 GWh for the electric portfolio and 37.7 million meters cubed for the natural gas portfolio." (Page 8, Section B, Item 1)

PREAMBLE TO IR (IF ANY):

The table in Revised MIPUG/EM I-1e) indicates cumulative three-year total spending of $146.7 Million and $63.0 Million respectively for electric and natural gas portfolio spending. It also indicates cumulative three-year savings of 680 GWh and 25.39 million meters cubed respectively for electric and natural gas programs without inclusion of codes and standards.

RATIONALE:

MIPUG wishes to understand the differences between the response provided by Efficiency Manitoba and the conclusions drawn by Daymark regarding cumulative three-year spending and savings for both electric and natural gas portfolios.

QUESTION:

(a) Please explain how Daymark concluded that cumulative three-year spending of about $200 million was $10.0 million less than the $209.7 million indicated by Efficiency Manitoba in Revised MIPUG/EM I-1e).

(b) Please break out Daymark's conclusions regarding cumulative spending separately for electric and natural gas portfolio spending.

(c) Please explain how Daymark concluded that cumulative three-year electric savings of 403 GWh are projected under the Plan, rather than the 680 GWh indicated in Revised MIPUG/EM I-1e).

(d) Please explain how Daymark concluded that cumulative three-year natural gas savings of 37.7 million cubic meters are projected under the Plan, rather than the 25.39 million meters cubed indicated in Revised MIPUG/EM I-1e).

RESPONSE:

a) Daymark's statement that spending was "approximately" $200 million was intended as a very round number indication of magnitude of the budget. We concur that actual spending was $209.7 million.

b) The $200 million number, as a round approximation, does not lend itself to breaking out electric and natural gas portfolio spending separately. A breakdown is presented in the body of the report, Table 14 of Daymark's Report.

c) The cumulative three-year savings figure of 403 GWh is an error. Daymark is reporting total three-year savings which is the sum of the three years' worth of annual savings shown in Efficiency Manitoba's filing (pdf page 17). The total three-year savings for the electric portfolio, inclusive of both program and codes and standards related savings is 1,136 GWh. Please note that this savings number uses revised codes and standards three-year savings of 256.0 GWh filed in response to PUM/EM I-39.

d) The 37.7 million cubic meters represents total three-year savings for the natural gas portfolio, including both program-related and codes & standards related savings. This is calculated by adding annual savings reported in Efficiency Manitoba's filing (pdf page 17).

Daymark's report has been revised with the correct values. Please see the changes made highlighted in gray.

Revised: "The Efficiency Manitoba Plan proposed Plan calls for spending approximately $200 million over three years to attain total three-year energy savings, inclusive of both program related and codes & standards, of 1,136 GWh for the electric portfolio and 37.7 million meters cubed for the natural gas portfolio." (Page 8, Section B, Item 1)

Original: "The Efficiency Manitoba Plan proposed Plan calls for spending approximately $200 million over three years to attain ~~cumulative total energy~~ of ~~403 GWh~~ for the electric portfolio and 37.7 million meters cubed for the natural gas portfolio." (Page 8, Section B, Item 1)

REFERENCE:

"Projected savings rise from an estimated 85 GWh in year 1 of the electric portfolio to 93 GWh in years 2 and 3. On the natural gas side, savings rise from 11.7 million cubic meters in year 1 to 13.2 million cubic meters in year 3." (Page 9, Section B, Item 1)

PREAMBLE TO IR (IF ANY):

The table in Revised MIPUG/EM I-1e) appears to indicate incremental annual savings of 285 GWh, 200 GWh and 195 GWh and 8.19 million, 8.49 million and 8.71 million cubic meters respectively for the first three years of the electric and natural gas portfolio without codes and standards.

RATIONALE:

MIPUG wishes to understand the differences between the response provided by Efficiency Manitoba and the conclusions drawn by Daymark regarding incremental savings for both the electric and natural gas portfolios during the three years outlined in the Plan.

QUESTION:

(a) Please explain how Daymark concluded that incremental annual savings for the electric portfolio rise from 85 GWh in Year 1 to 93 GWh in Years 2 and 3.

(b) Please explain how annual incremental savings of 85 GWh, 93 GWh and 93 GWh respectively in Years 1, 2 and 3 of the Plan provide cumulative total energy savings of 403 GWh.

(c) Please explain how Daymark concluded that incremental annual savings for the natural gas portfolio rise from 11.7 million cubic meters to 13.2 million cubic meters in Years 1 to 3 respectively.

RESPONSE:

(a) This is an error. The sentence should read, "Annual projected savings for the electric portfolio, inclusive of program-related and codes & standards, are estimated to be 373 GWh in year 1, followed by 386 GWh in year 2, and 377 GWh in year 3." The annual savings Daymark is reporting is taken from Efficiency Manitoba's filing (pdf page 17) by revised codes & standards savings in response to PUB/EM I-39.

(b) See response to MIPUG/DAYMARK-I-3(c) and MIPUG/DAYMARK-I-4(a).

(c) Daymark reported annual savings for the natural gas portfolio is taken from Efficiency Manitoba's filing (pdf page 17).

Daymark's report has been revised with the correct values. Please see the changes made highlighted in gray.

Revised: "Projected annual savings for electric portfolio, inclusive of program-related and codes & standards, are estimated to be 373 GWh in year 1, followed by 386 GWh in year 2, and 377 GWh in year 3. On the natural gas side, annual savings, inclusive of program-related and codes & standards, rise from 11.7 million cubic meters in year 1 to 13.2 million cubic meters in year 3." (Page 8, Section B, Item 1)

Original: "~~Projected savings rise from an estimated 85 GWh in year 1 of the electric portfolio to 93 GWh in years 2 and 3.~~ On the natural gas side, savings rise from 11.7 million cubic meters in year 1 to 13.2 million cubic meters in year 3." (Page 9, Section B, Item 1)

REFERENCE:

"In the electric portfolio, the largest share of the budget (30%) goes to the industrial segment, with 36% going to the commercial segment and 19% going to the residential segment, and 4% to the agricultural segment." (Page 10, Section B, Item 2)

PREAMBLE TO IR (IF ANY):

The table provided in MIPUG/EM I-7a) indicates that respective average annual budgets for the electric portfolio are 20% for the industrial segment, 36% for the commercial segment and 19% for the residential segment (i.e. not include income qualified and indigenous segments).

RATIONALE:

MIPUG wishes to confirm that the electric portfolio budget for the industrial segment represents approximately 20% of the total portfolio budget.

QUESTION:

(a) Please confirm Daymark's understanding that the annual average electric portfolio budget for the industrial segments accounts for approximately 20% of the total electric portfolio budget as indicated in MIPUG/EM I-7a).

RESPONSE:

a) Confirmed. Daymark's report has been revised with the correct values. Please see the changes made highlighted in gray.

Revised: "In the electric portfolio, the largest share of the budget (36%) goes to the commercial segment, with 20% going to the industrial segment and 19% going to the residential segment, and 4% to the agricultural segment."

Original: "In the electric portfolio, the largest share of the budget ~~(39%) goes to the industrial segment, with 36% going to the commercial segment~~ and 19% going to the residential segment, and 4% to the agricultural segment." (Page 10, Section B, Item 2)

REFERENCE:

"Overall, then, the plan budgets show significant investments in the industrial and commercial sectors – a level of investment that may be best understood in the context of Efficiency Manitoba's NPV cost effectiveness analysis, discussed below." (Page 10, Section B, Item 2)

PREAMBLE TO IR (IF ANY):

The tables provided in MIPUG/EM I-7a) and MIPUG/EM I-9a) indicate respective average annual electric portfolio budget shares of 20% and 36% for the electric portfolio, along with 9% and 27% respective average annual natural gas portfolio budget shares for the industrial and commercial segments.

RATIONALE:

MIPUG wishes to highlight that the portfolio budget shares for the industrial segment represents approximately 20% and 9% of the respective total portfolio budgets for electric and natural gas spending.

QUESTION:

(a) Please explain why Daymark concludes that the industrial segment investment specified in the electric portfolios merits the mention of "significance" relative to the proposed spending of 36% and 19% for commercial and residential segments respectively.

(b) Please explain why Daymark concludes that the industrial segment investment specified in the natural gas portfolios merits the mention of "significance" relative to the proposed spending of 27% and 21% for commercial and residential segments respectively.

RESPONSE:

(a) Daymark's statement is based on general observations of proposed budgets for the different sectors in either electric or natural gas portfolios. The statement is revised in the report to state that in addition to industrial and commercial sectors, the residential sector also has significant investments.

(b) See MIPUG/DAYMARK I-6a.

Daymark's report has been revised with the corrected statement. Please see the changes made highlighted in gray.

Revised: "Overall, then, the plan budgets show significant investments in the industrial, commercial, and residential sectors – a level of investment that may be best understood in the context of Efficiency Manitoba's NPV cost effectiveness analysis, discussed below." (Page 10, Section B, Item 2)

Original: "Overall, then, the plan budgets show significant investments in the industrial and commercial sectors – a level of investment that may be best understood in the context of Efficiency Manitoba's NPV cost effectiveness analysis, discussed below." (Page 10, Section B, Item 2)

REFERENCE:

"Table illustrating PACT Benefit/Cost Ratio's, NPV's and Levelized Costs for Electric and Natural Gas Portfolio bundles indicates a PACT Benefit/Cost Ratio of 1.84, NPV of $6,792 and a Levelized Cost of $4.67 cents/kWh for the Commercial, Industrial and Agricultural bundle in the electric portfolio." (Page 15, Section B, Item 5).

PREAMBLE TO IR (IF ANY):

The values provided in the Electric Program Cost-Effectiveness Metrics provided in Attachment 3 – Technical Tables of the Plan indicate that the Commercial, Agricultural and Industrial Programs have a combined PACT Benefit/Cost ratio of 4.43, NPV of $310,159 million and a Levelized Cost of 1.59 cents/kWh.

RATIONALE:

MIPUG wishes to confirm that the electric portfolio metrics for the commercial, industrial and agricultural segment are as noted in the Plan.

QUESTION:

(a) Please confirm Daymark's understanding that the cost-effectiveness metrics for the commercial, industrial and agricultural electric bundles are as noted in Attachment 3 – Technical Tables – Electric Program Cost-Effectiveness Metrics.

RESPONSE:

(a) Daymark has revised Table 1 included in the Report (Page 15) to correctly reflect cost-effectiveness metrics of Commercial, Industrial, and Agricultural sectors of the electric portfolio. The Commercial, Industrial, and Agricultural Programs values should have a PACT Ratio of 4.43, a PACT NPV of $310 million, and a Levelized Cost of 1.59 cents/kWh as shown in the table below.

CUSTOMER SEGMENT(S)	NATURAL GAS			ELECTRICITY		
	C/B	NPV (000'S)	LEVELIZED COST (¢/m^3)	C/B	NPV	LEVELIZED COST
RESIDENTIAL	1	$179	19.49	2.74	$40,338	3.19
Income Qualified	0.5	($8,888)	40.29	2.8	$7,576	3.7
Commercial, Industrial, and Agricultural	2.5	$31,429	7.19	4.43	$310,159	1.59
Emerging Technologies	0.9	($104)	21.4	2.96	$4,156	2.11

The original table with the incorrect values struck is shown below:

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

REFERENCE:

"In the electric portfolio, the largest share of the budget (30%) goes to the industrial segment, with 36% going to the commercial segment and 19% going to the residential segment, and 4% to the agricultural segment." (Page 10, Section B, Item 2)

PREAMBLE TO IR (IF ANY):

The table provided in MIPUG/EM I-7a) indicates that respective average annual budgets for the electric portfolio are 20% for the industrial segment, 36% for the commercial segment and 19% for the residential segment (i.e. not include income qualified and indigenous segments).

RATIONALE:

MIPUG wishes to confirm that the electric portfolio budget for the industrial segment represents approximately 20% of the total portfolio budget.

QUESTION:

(a) Please confirm Daymark's understanding that the annual average electric portfolio budget for the industrial segments accounts for approximately 20% of the total electric portfolio budget as indicated in MIPUG/EM I-7a).

RESPONSE:

(a) Confirmed. See MIPUG/DAYMARK I-5(a).

REFERENCE:

Table 12, Page 62, Section IV, Part A indicating Electric Program-Related Savings of 880.1 GWh.

PREAMBLE TO IR (IF ANY):

The Daymark report does not indicate whether the 880.1 GWh in program-related savings specified in Table 12 (p. 62) is considered to be the sum of the annual savings or cumulative savings provided by the end of Year 3 of the Plan.

RATIONALE:

MIPUG is seeking to understand how the 880 GWh shown in Table 12 relates to the 680 GWh in cumulative Year 3 savings shown in the table in MIPUG/EM I-1e).

QUESTION:

(a) Please explain whether Daymark considers the 880.1 GWh is savings shown in Table 12 to represent the cumulative savings provided by the Plan at the end of Year 3.

(b) If yes, please explain how this conclusion was reached.

(c) If no, please explain the total cumulative electric portfolio savings Daymark considers to be represented by the Plan at the end of Year 3.

RESPONSE:

a) The 880 GWh savings reported in Table 12 of Daymark's report is not cumulative savings but represents the total three-year savings which is the sum of the annual savings toward achieving the annual target of each of the plan's three years. In other words, it's the sum of kWh allowed to be accounted for in each year – incremental savings earned in said year plus any annually recurring incentive payment-driven savings such as Load Displacement savings. This differs from the 680 GWh shown in MIPUG/EM I-1e, which appears to show annual GWh saved at the end of Year 3 compared to Year 0 of the program (where measures installed in year one will continue to count in subsequent years, until the measure life has ended).

b) See MIPUG/DAYMARK-I-9 (a).

c) While the cumulative portfolio savings were not directly analyzed by Daymark, they can be estimated by taking the total savings accounted by the plan of 880 GWh and subtracting the amount of savings that are "re-applied" to the target each year from the performance-based incentives. Eliminating the approximately 198 GWh that are "re-applied" from the Load

Displacement Project 1 in years two and three, Daymark estimated the cumulative electric portfolio savings at the end of Year 3 to be 682 GWh, which is close to the value reported in MIPUG/EMI-1e.

REFERENCE:

"Free rider level assumptions are frequently set around twenty or thirty percent, but in some cases, the assumed free rider impacts is zero, and in other cases, it can be 60%." (Page 70, Section IV, Part B.a).

PREAMBLE TO IR (IF ANY):

Free ridership levels can vary between sectors and programs depending on the criteria used by customers to justify expenditures for energy efficiency improvements.

RATIONALE:

MIPUG would like to understand the variations in free ridership levels that Efficiency Manitoba applied for the commercial, industrial and residential sectors.

QUESTION:

(a) Please provide an overview of how free ridership levels used by Efficiency Manitoba varied between specific measures targeting the commercial, industrial and residential sectors.

RESPONSE:

(a) Please refer to revised response MIPUG/EM-I-1h, filed on 12/18/2019, that includes an attachment with the requested free ridership values for each measure.

REFERENCE:

"In order to adjust per-unit savings, which is another input in estimated total energy savings, Efficiency Manitoba also included a "persistence factor" for each measure in its analysis." (Page 70, Section IV, Part B.a).

PREAMBLE TO IR (IF ANY):

Persistence levels can vary between sectors and programs depending on A variety of factors including equipment failure, early replacement, facility shutdowns, etc.

RATIONALE:

MIPUG would like to understand the variations in persistence levels that Efficiency Manitoba applied for the commercial, industrial and residential sectors.

QUESTION:

(a) Please provide an overview of how persistence levels used by Efficiency Manitoba varied between specific measures targeting the commercial, industrial and residential sectors.

RESPONSE:

(a) Please refer to revised response MIPUG/EM-I-1h, filed on 12/18/2019, which includes an attachment with the requested persistence factors for each measure.

REFERENCE:

"The natural gas bundles distribution of savings shows that the bundles targeted at commercial and industrial customers and agriculture produce only about 2/3 of the natural gas savings." (Page 72, Section IV, Part B.a).

PREAMBLE TO IR (IF ANY):

Table 16 (Page 73) indicates that pre-interactive effect savings account for about 4.98 million, 3.24 million and 22.60 million cubic meters for the residential, income qualified and combined commercial, industrial and agricultural sectors respectively. The 22.60 million cubic meters saved by the commercial, industrial and agricultural sectors account for about 2/3 of the 31.31 million cubic meters in pre-interactive effects natural gas savings for the residential, commercial and industrial savings.

MIPUG/EM I-8a) indicates that the three-year industrial natural gas program savings total 12.59 million cubic meters, of which 12.06 million are planned for the Custom program. These savings account for about 90% of Custom program savings.

RATIONALE:

MIPUG is seeking to understand what level of interactive effects was applied to Custom program savings planned for the industrial sector.

QUESTION:

(a) Please provide the portion of the 5.59 million cubic meters in interactive effects that were assigned to the industrial Custom program savings.

RESPONSE:

(a) The interactive effects of 5.59 million cubic meters of natural gas were taken from Efficiency Manitoba's portfolio-level workpapers. Based on our review, none of the 5.59 million cubic meters of interactive effects were assigned to the Industrial Custom Program savings.

REFERENCE:

Table 17 – Savings by Measure Life – Electric & Table 18 – Savings by Measure Life – Natural Gas (Page 74, Section IV, Part B.b)

PREAMBLE TO IR (IF ANY):

While electric and natural gas savings are one measure of contribution to program objects. The PACT NPV is another measure of value that relates directly to measure life.

RATIONALE:

MIPUG is seeking to understand how the PACT NPV relates to measure life.

QUESTION:

(a) Please reproduce Tables 17 and 18 for respective electric and natural gas savings, relating the PACT value to the measure life, showing strata PACT NPV and cumulative NPV.

RESPONSE:

(a) Since Efficiency Manitoba considered program support costs at the portfolio level, estimating measure-level PACT NPV is a challenge, since there is no straightforward way to appropriately allocate the portfolio-level program support costs to the measures considered in the Plan. Therefore, instead of reporting measure-level PACT cost-effectiveness, Daymark constructed the Pure Measure Value Test ("PMVT") as a means to investigate measure level economics. This test is described, and the results provided in Section IV.F in the Daymark Report (Page 93 – 98). Consistent with the discussion in the Report, we provide net PMVT breakdown by measure-level in two new tables below (one for the electric portfolio and one for the natural gas portfolio) which add additional information to the original Table 17 and Table 18. Please note that Table 17 included in the Report has been revised.

The original Table 17, included in Daymark Report, is below:

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

The revised Table 17 is below:

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %
1-5	348,505,184	40%	40%
6-10	65,873,774	7%	47%
11-15	400,879,233	46%	93%
16-20	21,957,879	2%	95%
21-25	24,329,811	3%	98%
26-30	13,404,729	2%	99%
31+	5,767,240	1%	100%
Total	***880,717,849***		

The table below expands Table 17 by adding the requested information in this IR:

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %	Net PMVT NPV ($)	Net PMVT NPV as % of Total
1-5	348,505,184	40%	40%	$73,600,828	25%
6-10	65,873,774	7%	47%	$8,723,079	3%
11-15	400,879,233	46%	93%	$159,392,126	54%
16-20	21,957,879	2%	95%	$14,062,494	5%
21-25	24,329,811	3%	98%	$14,299,934	5%
26-30	13,404,729	2%	99%	$18,119,145	6%
31+	5,767,240	1%	100%	$4,357,415	1%
Total	***880,717,849***	***100%***		***292,555,022***	***100%***

The original Table 18, included in the Daymark Report, is below:

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

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

The table below expands Table 18 by adding the requested information in this IR:

Year Range	Total Three-Year Savings (kWh)	Savings as % of Total	Cumulative Savings %	Net PMVT NPV ($)	Net PMVT NPV as % of Total
1-5	795,873	3%	3%	$4,079,184	13%
6-10	3,890,656	12%	15%	$3,638,723	11%
11-15	10,038,209	32%	47%	$6,887,524	21%
16-20	1,237,585	4%	51%	-$3,743,300	-12%
21-25	12,184,581	39%	90%	$24,570,325	76%
26-30	2,873,109	9%	99%	-$895,929	-3%
31+	162,666	1%	100%	-$2,166,313	-7%
Total	***31,182,679***	***100%***		***32,370,214***	***100%***

REFERENCE:

Table 20 – Savings and PACT NPV$ by sector and bundle (Page 77, Section IV, Part B.c).

PREAMBLE TO IR (IF ANY):

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RATIONALE:

MIPUG is seeking Daymark's view of the impact that interactive effects have on the PACT NPV provided by the bundles and sectors including on Table 20.

QUESTION:

(a) Please provide Daymark analysis of the impact that the deduction of natural gas savings lost to interactive effects have on the PACT NPV for each sector and bundle.

RESPONSE:

The interactive effects included in natural gas bundles (Table 20 of Daymark's report) are a result of installing efficient measures in the electric portfolio. Efficiency Manitoba estimated these interactive effects at the sector level. It would be inappropriate to apply interactive effects generated due to electric measures to PACT NPVs of natural gas bundles.

Please find the sector-level interactive effects included in natural gas cost-effectiveness, as a result of electric efficient measures, in the table below. Only commercial and residential sectors have associated interactive effects values.

Sector/Plan Year	2020/21	2021/22	2022/23	Total
Residential (Natural gas savings cu. m)	(43,066)	(37,574)	(32,852)	(113,492)
Commercial (Natural gas savings cu. m)	(2,076,438)	(1,811,656)	(1,583,957)	(5,472,051)
				(5,585,543)

REFERENCE:

"Daymark does not advocate using the RIM ratio or economics at the program level." (Page 80, Section IV, Part C, Item 3)

PREAMBLE TO IR (IF ANY):

The inputs used for the Lifecycle Revenue Impact (LRI) is used within the Efficiency Manitoba plan to qualify rate impacts of the program.

RATIONALE:

MIPUG is seeking a greater understanding of the rationale adopted by Daymark for not advocating for the use of the RIM test.

QUESTION:

(a) Please compare the inputs used for the Lifecycle Revenue Impact (LRI) measure with those of the Rate Impact Measure (RIM) test.

(b) Please explain in detail why Daymark does not advocate for the use of the RIM test using examples of positive and negative outcomes that use of the test could create.

(c) Does Daymark advocate for the use of LRI test. If yes, explain why using examples of positive and negative outcomes that use of the test could create.

RESPONSE:

(a) The annual inputs at the bundle/program level for the Lifecycle Revenue Impact (LRI) and the Rate Impact Measure (RIM) tests are the same, with the important distinction that the LRI is only shown at the portfolio level, whereas RIM can be shown at the bundle, program and possibly the measure level.

(b) Daymark does not advocate the use of the RIM test at the bundle, program or measure level for decision-making for two reasons:

1. The isolation of each individual program expenditure for a given plan in trying to directionally determine impact does not give visibility into how *de minimis* the 'impact' may be.
2. Any indication of whether a single measure/program/bundle "fails" the RIM test, either due to a negative NPV or a Benefit-Cost ratio below 1.0, does not show how impactful the activity has been, since the size of the results needs to be considered to determine impact. To give an extreme example that illustrates the problem, in theory, a RIM "test" of a program that benefits the 99% of customers who participate could show the program "failing" if the remaining 1% experience any associated rate increase.

Accordingly, Daymark prefers that the impact of a portfolio of energy efficiency be examined in aggregate to determine whether the impact on rates will negatively affect utility customers who do not participate in energy efficiency programs. This should also take into consideration the comprehensiveness of energy efficiency program participation over time, since the reduced consumption (and resulting lower bills) that results from participation could outweigh the impact of any bill increases from higher rates.

(c) Daymark believes that it is important to understand impacts on rates in the periods they occur when considering approval of an energy efficiency plan, but does not endorse the idea that a plan's bundles/programs/measures that will increase rates while lowering revenue requirements or customer bills are unacceptable *per se*.

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. Daymark, in our report, discusses concerns with the way that Efficiency Manitoba has calculated the LRI. 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.

A positive number indicates that the impact of the programs in the associated five-year period tends to increase rates in that period. A negative number indicates that the impact of the programs tends to decrease rates. Daymark suggests that the PUB or the Provincial administration should be the party that determines whether the magnitude of impact is significant enough to change its approval of all or part of a proposed energy efficiency plan.

REFERENCE:

"For facilities and home heated by electricity, the increased electric heating requirements are subtracted from the electric measure savings. For facilities and homes that are electrically cooled, the decreased cooling requirements are added to the measure savings. The net measure savings after considering the estimate heating and cooling interactive effects are used in the measure forecasts in the 2020/23 Efficiency Plan." (Page 83, Section IV, Part C, Item 3.b).

PREAMBLE TO IR (IF ANY):

While Efficiency Manitoba provides direct reference in the Plan to interactive effects on natural gas savings, no such reference is provided in respect to electric savings in instance where buildings are heated with electricity.

RATIONALE:

MIPUG is seeking clarification on the impact of interactive effects on electrically heated buildings.

QUESTION:

(a) If available, please provide the net impact of electric interactive effects arising from increased electric heating requirements and decrease electric cooling requirements arising from electric energy efficiency improvements in buildings.

RESPONSE:

(a) Daymark does not have readily accessible information on electric interactive effects. Our understanding is that the measure-level savings reported by Efficiency Manitoba are the "net" of electric interactive effects. The measure-level savings estimated by Efficiency Manitoba account for any electric interactive effects by adjusting per-unit measure savings.

REFERENCE:

Table 28 – Electric Bundle Level Cost Effectiveness Results, Load Displacement results Electric Savings - 330 GWh, PACT Ratio - 3.72, TRC Ratio - 5.64 (Page 91, Section IV, Part E).

PREAMBLE TO IR (IF ANY):

The TRC test is expected to be inclusive of all customer costs for adoption of the energy efficiency measure.

RATIONALE:

MIPUG is seeking to establish whether Efficiency Manitoba included obvious customer costs for fuel procurement in its TRC analysis.

QUESTION:

(a) Please indicate if Daymark is able to determine whether Efficiency Manitoba included costs for collection and procurement of fuel for self-generation activities.

RESPONSE:

(a) For load displacement measures, Daymark was not able to determine whether Efficiency Manitoba included costs for collection and procurement of fuel for self-generation. Daymark reviewed measure-level workpapers developed by Efficiency Manitoba, which include both measure-specific incentive costs and net customer costs. The net customer cost included is not further broken down into different cost categories. Refer to MIPUG/Daymark-I-26 that provides more information on costs associated with Load Displacement – Project One.

REFERENCE:

Table 33 – Bundle Level Results After Pure Measure Test – Natural Gas Portfolio (Page 96, Section IV, Part F).

PREAMBLE TO IR (IF ANY):

Table 33 references electric savings not natural gas savings as the title suggests.

RATIONALE:

MIPUG would like to obtain the relevant table.

QUESTION:

(a) Please correct Table 33 to identify the results of the PMVT measure analysis for natural gas programs.

RESPONSE:

Below is the revised table reflecting PMVT measure analysis for natural gas bundles. Daymark has filed an updated Report with the correct table reflecting PMVT measure analysis for natural gas bundles.

DSM Bundle	Total Three-Year Savings (m3)	PACT Ratio	TRC Ratio	Savings from measures with PMVT ratios <1
Custom	13,348,583	6.51	3.62	3%
In Suite Efficiency	346,736	3.15	4.47	27%
HVAC & Controls	2,268,681	2.59	1.88	5%
Small Business & Appliance	958,599	1.75	6.83	13%
Renovation	3,387,948	1.60	1.84	3%
Home Renovation	2,737,423	1.20	0.79	35%
Emerging Technology	332,286	0.89	0.32	100%
Product Rebates	1,205,670	0.79	0.49	61%
Direct Install	499,384	0.78	1.81	23%
New Homes & MR	401,910	0.72	0.32	100%
New Construction & HPB	2,287,686	0.59	0.37	90%
Income Qualified	3,237,979	0.49	0.92	37%
Metis Income Qualified	157,774	0.44	0.84	33%
Home EE Kits & Education	139,893	0.41	2.97	0%
Program Support	-	-	0.00	0%
Interactive Effects	(5,585,543)	-	-	
Total	***25,725,008***	***0.99***	***1.0***	***26%***

REFERENCE:

"This spreads the effects of short-lived measures over 30-years, even if the measure life is only 5-years." (Page 103, Section IV, Part H, Item 3)

PREAMBLE TO IR (IF ANY):

Use of the Lifecycle methodology for evaluating savings examines the benefits restricts consideration of benefits to one measure life cycle only and provides no consideration for customer or program administrator re-investment.

RATIONALE:

MIPUG is seeking an understanding of the impact that the use of the Lifecycle Methodology has on program metrics.

QUESTION:

(a) Does Daymark concur with Efficiency Manitoba treatment of savings at the end of one measure life cycle.?

(b) Does Daymark agree with the assumption under the Lifecycle Methodology that energy consumption will return to pre-measure levels at the end of one lifecycle.?

(c) Please explain in detail, Daymark's view of the lifecycle approach used by Efficiency Manitoba and the impact that consideration for re-investment would have on program metrics.

RESPONSE:

(a) Daymark believes that Efficiency Manitoba has been conservative by not assuming that there is any probability that after a measure life has ended, the participant would replace the measure with something that is higher than they would have installed but for the program participation they experienced. Some participants will choose more efficient devices even without a program when the measure reaches end of life; others will choose what they would have chosen without ever experiencing the program. Some markets will have been transformed by program experiences such that the offerings in the marketplace become more efficient than they would have been without the program. The potential for this has not been included in Efficiency Manitoba's assessment of the Plan benefits. Daymark believes that Efficiency Manitoba has appropriately handled this at this time.

(b) See (a)

(c) Absent specific research to support a different lifecycle treatment, Daymark believes this is the reasonable way to conduct the cost effectiveness analyses.

REFERENCE:

"Over the long term, failure to make these adjustments could end up significantly distorting Efficiency Manitoba's savings reporting, as more and more savings become attributed to older codes and standards that may no longer have a meaningful effect." (Page 125, Section VI, Part C, Item 4)

PREAMBLE TO IR (IF ANY):

Similar to maturing technologies, Codes and Standards evolve over time with increasing Minimum Energy Performance Standards (MEPS). In general, these increasing MEPS are intended to create higher base levels, locking in prior savings going forward and capturing new additional savings going forward. Most Codes and Standards continue to evolve after their original date of enactment, increasing MEPS as technologies mature and become more cost effective.

RATIONALE:

MIPUG wishes to understand the Daymark rationale for adjusting Codes and Standards savings based on the date of enactment.

QUESTION:

(a) How did Daymark address evolving Codes and Standards in its analysis related to measures where MEPS have increased on multiple occasions since the date of enactment.?

(b) Does Daymark concur that NOMAD is of lesser relevance in instances where Codes and Standards continue to evolve with progressively higher MEPS, keeping in step with maturing measures that provide higher levels of energy efficiency.?

(c) Does Daymark have an opinion on the concept of reporting Codes and Standards savings versus claiming Codes and Standards savings given the principle that the development and adoption of Codes and Standards is a collective effort that relies on all levels of government, energy efficiency program administrators, utilities and other entities.?

(d) Does Daymark concur with the view that Codes and Standards savings will impact energy consumption in Manitoba whether these savings are claimed by Efficiency Manitoba or not.?

(e) Does Daymark concur that Codes and Standards savings provide marginal benefits to utilities such as Manitoba Hydro whether claimed by Efficiency Manitoba or not.?

(f) Did Daymark's analysis of Efficiency Manitoba's methodology for claiming Codes and Standards savings identify a robust methodology for tracking changes in savings with increases in MEPS.?

(g) Please explain how "capping" the share of annual savings requirement that can be fulfilled through Codes & Standards savings adequately recognizes the rapid evolution of Codes and Standards related to building codes over the past five years, which will come into affect over the next five years.?

(h) Does Daymark agree that Codes & Standards implementation supports adoption at higher rates, which may in turn improve the economics and adoption rates of evolving technologies in a manner that would often not occur without adoption implementation of Codes and Standards.?

RESPONSE:

(a) Our analysis ties back to Table 47 in our report, "Effective dates of respective codes & standards." The information summarized in this Table is drawn from the responses provided by Efficiency Manitoba in IR PUB-39. Table 47 refers to the effective date reported by Efficiency Manitoba, which in some cases referred to the date of an increase made to an existing standard, which we assumed referred to the most recent change. We did not do independent research to verify this. In the case of the category, "Residential Appliances," since the reference was to yearly changes, we assumed that these codes were updated at least annually.

(b) Conceptually, NOMAD can be thought of in terms of two categories of impact: first, some customers may be considered "early adopters" who will tend to adopt the most efficient technologies with or without codes and standards. This portion of the NOMAD effect is relevant, no matter how often codes and standards are updated. There is a second conceptual NOMAD category, however, that is less significant the more often codes and standards are updated. This second category reflects the impact of existing codes and standards, together with ongoing technology development, on what customers expect and what is available in the marketplace—as more efficient technologies become more the norm in the marketplace, they can build a kind of inertia, such that they would continue to be used even if the original code and standard no longer existed.

(c) In our opinion, given the many actors involved in codes and standards savings, it is challenging to give a precise quantitative answer to the question of the extent to which Efficiency Manitoba should "claim credit" for a particular code or standard. In our report, we accepted Efficiency Manitoba's analysis of how its efforts (or the efforts of Manitoba Hydro) may have contributed to the enactment of codes and standards.

Adopting a policy of simply "reporting" codes and standards savings would have the advantage of clearly acknowledging the difficulty of assigning credit. However, as has often been pointed out, measurement can be an important management tool. Imperfect though it may be, preserving the requirement that Efficiency Manitoba contribute to the codes and standards for which it is claiming "credit" does provide an ongoing incentive for Efficiency Manitoba to focus on contributing to codes and standards, to track its own efforts, and to report on how its efforts may have contributed to codes and standards adoption.

(d) Daymark agrees that savings from codes and standards put into place prior to 2019 will impact energy consumption in Manitoba whether these savings are claimed by Efficiency Manitoba or not.

However, allowing Efficiency Manitoba to "claim credit" for codes and standards savings, going forward, does provide Efficiency Manitoba with an incentive to focus on what it can contribute in this area, and might add impetus to efforts to optimize codes and standards.

(e) We concur that codes and standards savings provide marginal benefit to utilities such as Manitoba Hydro, whether claimed by Efficiency Manitoba or not. However, see our response to MIPUG/DAYMARK-I-20d, above, on how allowing Efficiency Manitoba to "claim" reasonable codes and standards savings may improve the incentive structure for Efficiency Manitoba.

(f) We did not explicitly address this question in our analysis. However, our position would be that an increase in MEPS should be considered to "refresh" a code and standard for the purpose of considering whether a code and standard should still be considered to be likely effective. If there are codes and standards that have multiple provisions, some of which are adjusted regularly through MEPS and some of which are not, the best tracking would disaggregate updates from non-updated provisions, and track these separately. However, we have not done the analysis to determine if this approach would be practical.

(g) The point of "capping" the share of the annual savings requirement that can be fulfilled through codes & standards savings is to set up a good set of incentives for Efficiency Manitoba without making reporting requirements too burdensome. "Capping" is not an approach that should be used as a way of evaluating the overall success of codes and standards efforts in Manitoba because, as the question implies, it would not do a good job of recognizing the relative magnitude of impact of any new or revised codes and standards that might be enacted. What it would do is continue to provide Efficiency Manitoba an incentive to promote codes and standards efforts, while setting a cap that ensures that the codes and standards savings do not crowd out the active customer engagement in pushing energy efficiency beyond mandated levels that results from direct energy efficiency programs.

(h) The question appears to be describing market transformation resulting from codes and standards. We agree that, in the circumstances described, market transformation can occur.

REFERENCE:

"Efficiency Manitoba has not focused on the long-term implications of this first plan." (Page 131, Section VI, Part D, Item 1).

PREAMBLE TO IR (IF ANY):

Many measures experience re-investment at end of life, either due to standard customer practices of replacing like-for-like, which is typical of many industrial participants, or due to the influence of Codes and Standards that evolve with maturing technologies.

RATIONALE:

MIPUG would like to explore options for extending the life of measure savings and thereby ensuring the sustainability of savings achieved under the Efficiency Manitoba plan.

QUESTION:

(a) Has Daymark undertaken any analysis to assess the impact of reinvestment on the Efficiency Manitoba Plan to address the short-term impact of measures with shorter life cycles.?

(b) If yes, what is the result of this analysis.?

RESPONSE:

(a) & (b) Daymark addresses these issues in Section VI.D of its report (Pages 129 – 131).

REFERENCE:

"Our cost-benefit analysis, therefore, utilize these numbers as inputs, without offering an opinion on them." (Page 6, Section II, Part A, Item 4.a)

PREAMBLE TO IR (IF ANY):

Marginal values provided to Efficiency Manitoba by Manitoba Hydro are a critical input for the determination of value for ratepayers, both participants and non-participants in Efficiency Manitoba programming. Trends or changes in those marginal values influence the shape and design of Efficiency Manitoba programming.

RATIONALE:

MIPUG is seeking to understand how changes in marginal valuation may have influenced the composition of Efficiency Manitoba programming.

QUESTION:

(a) Please provide a detailed summary of how Daymark conducted due diligence (if any) on the Marginal Values from Manitoba Hydro.

(b) Please provide a broad indication of how the marginal values used by Efficiency Manitoba remain consistent or have changed since the prior Power Smart Plan was developed and implemented by Manitoba Hydro in the following context;

  i. General trend over the short (five years) and long term (10 to 30 years)
  ii. Relative winter and summer capacity marginal values for generation
  iii. Relative winter and summer energy marginal values for generation
  iv. Winter capacity marginal values for transmission and distribution
  v. Recognition of summer capacity constraint on a general basis
  vi. Recognition of winter and summer capacity constraint on a regional basis

RESPONSE:

(a) & (b) Daymark did not consider due diligence regarding the marginal values used by Efficiency Manitoba in its analysis beyond the recognition that marginal values recognized the seasonality of energy and capacity values for generation, distribution and transmission. Manitoba Hydro's "derivation of marginal values and avoided costs in accordance with resource planning processes (electric and natural gas)" was declared out of scope of the PUB review in Procedural Order No. 162/19.

REFERENCE:

Table 38: Lifecycle Revenue Impact Analysis – Electric Portfolio, Table 39: Lifecycle Revenue Impact Results – Natural Gas Portfolio (Page 102, Section IV, Part H, Item 2)

PREAMBLE TO IR (IF ANY):

The Lifecycle Revenue Impact (LRI) measure provides a value for a representative rate increase to recover costs for energy efficiency programming that exceed benefits over the benefit period chosen by the program administrator. The use of average rates for electric and natural gas portfolios to illustrate percentage rate increases that will be experienced by customers can be misleading.

RATIONALE:

MIPUG wishes to understand whether Daymark feels that Tables 38 and 39 provide a reasonable manner in which to illustrate rate impacts for large industrial consumers that accept service at higher voltage transmission rates.

QUESTION:

(a) Does Daymark agree that the transmission customers, who accept service at higher transmission voltages and therefore incur additional costs for customer-owned transformation equipment, do not obtain a reasonable indication of the rate impact through Efficiency Manitoba's use of the Lifecycle Revenue Impact (LRI) measure.?

(b) Would Daymark agree that the rate impact specified in Table 38 (p. 102) would increase to 0.38% if an average base rate of 5.0 cents/kWh was used, and 0.42% if an average base rate of 4.5 cents/kWh was used.?

(c) Would Daymark concur that the cumulative rate impact of Efficiency Manitoba's programming over 15 years could be as high as 2.0% using the current LRI methodology if future versions of Three-Year Plan are similar to the initial proposed Three-Year Plan.?

RESPONSE:

Please see response to IR MIPUG/DAYMARK 1-15c for insight as to how Daymark would prefer LRI to be calculated. The responses below are responding only to the numbers as per the Efficiency Manitoba methodology in the plan document and should not be taken as departing from Daymark's discussion in Section VI.H and in the response referenced above.

(a) Yes
(b) Yes
(c) No. It appears that the 2.0% is a multiplication of 0.42% x 5 for 5 three-year plans. Daymark would point out that the effects of the second Plan would be 0 in years 1 to 3; similarly, the effects of the third plan would be 0 in years 1 through 6; etc. Therefore, the combined effects would not be 2% over the 15-year period, but would reach 2.0% in year 15 under this construct.

REFERENCE: Cumulative Long-Term Savings

PREAMBLE TO IR (IF ANY):

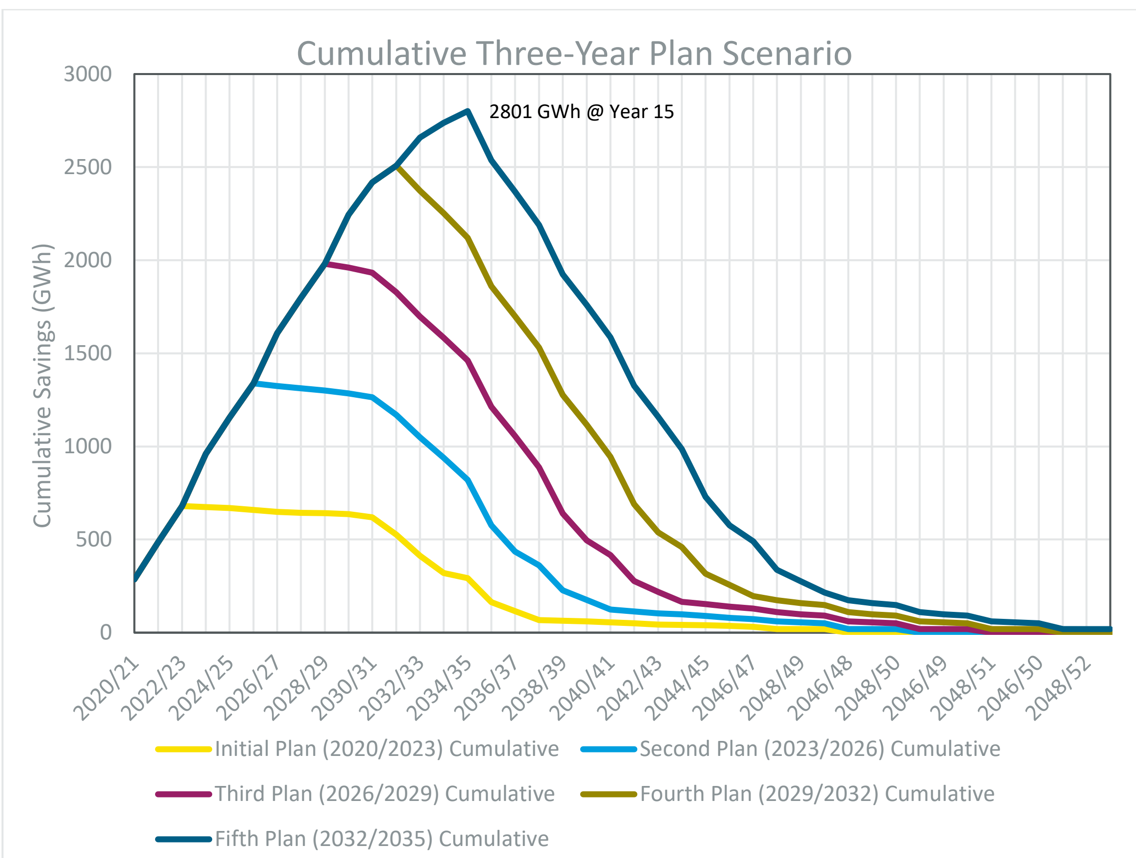
The cumulative savings of the Efficiency Manitoba's initial Three-Year Plan were provided by Efficiency Manitoba in MIPUG/EM I-1e). Projecting the effect of five similar three-year plans over a 15-year total period provides a scenario that approximates the long-term effect of the initial Three-Year plan repeated five times.

RATIONALE:

MIPUG is seeking to explore the reasonableness and achievability of the cumulative 15-year savings target (i.e. 22.5%) identified in the Efficiency Manitoba Regulation.

QUESTION:

(a) Does Daymark agree that the scenario presented below, which illustrates the cumulative savings provided (without codes & standards) by five successive three-years plans (each being similar to the initial three-year plan), would product cumulative savings of 2,801 GWh by Year 15.?

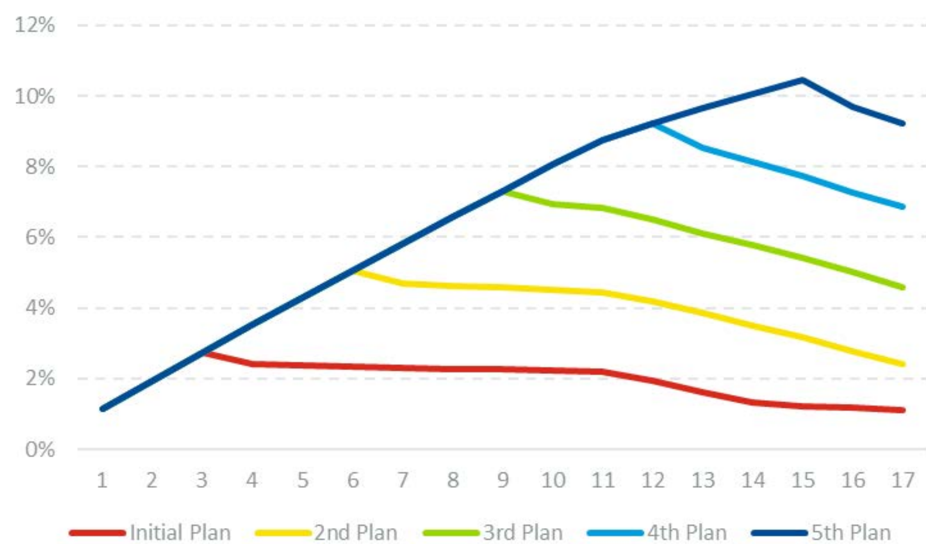


(b) Does Daymark agree that these cumulative savings would represent approximately 10.8% of the 26,047 GWh used as the reference base load in 2019/20 at the start of the Plan.?

(c) Please explain how Daymark interprets the proposed treatment of Codes and Standards savings contributing to the cumulative savings identified in the scenario above using the methodology proposed by Efficiency Manitoba.?

RESPONSE:

a) Daymark did not approach the cumulative savings over 15 years by utilizing GWh, but via percentage of load. Our analysis is illustrative in nature and does not factor in load growth or any other factors aside from measure life and percentage of savings relative to the reference base load. Below is a graph similar to that presented in MIPUG/DAYMARK-I-24a, reflecting our percentage-based approach to illustrate the similarity. Based on the illustrative analysis we performed, five consecutive and cumulative three-year plans will result in 10.5% being saved at the end of year 15. The 10.5% is similar to the 10.8% that MIPUG estimated



b) See part (a).

c) Daymark's interpretation is that Efficiency Manitoba proposes to recognize codes and standards savings on a year-by-year basis, not as ongoing savings. Accordingly, savings associated with implementing codes and standards-related measures in a given year are recognized as one-time, single-year events in the year that new code-compliant construction is completed or a code-compliant appliance is purchased. It is likely that these code-compliance measures continue to produce savings in subsequent years, but these savings are not included in Efficiency Manitoba's calculations of NPV over 30 years.

It is not clear how Efficiency Manitoba's methodology would incorporate codes and standards savings into cumulative savings. Efficiency Manitoba's comments on cumulative savings in the Plan may indicate that there is some intention to include codes and standards savings in cumulative savings. In discussing the 22.5% and 11.25% cumulative savings targets, they write: "To illustrate, if 1.5 percent savings of electrical energy consumption is achieved annually for 15 years, the summation of these annual percentage savings is 22.5 percent." (Section 2.3.1) Since codes and standards savings are included in the annual savings, this might suggest that they are intended to roll into cumulative savings as well, but this is not explicitly stated. If they were to be included in cumulative savings, Daymark's opinion is that there should be some adjustment for codes and standards' "measure life."

REFERENCE: Daymark Evidence, page 15, Table 1

PREAMBLE TO IR (IF ANY):

Daymark provides Table 1 on page 15, presenting the results of Efficiency Manitoba's cost-benefit analysis for different customer segments in summary form.

RATIONALE:

-

QUESTION:

(a) please provide the references and underlying calculations (if possible due to confidentially) for the levelized costs used to support Table 1.

RESPONSE:

a) The documents used to support Table 1 included in Daymark's report is based on the Efficiency Manitoba 3-Year Plan, Attachment 3 Technical Tables, specifically the Electric and Natural Gas Program Cost-Effectiveness Metrics tables. No calculations were made by Daymark – this was a summation/restatement of Efficiency Manitoba's work.

Please note that Daymark has revised Table 1. Please refer to MIPUG/DAYMARK-I-7 response.

The original table is below:

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

The Revised Table is as follows:

CUSTOMER SEGMENT(S)	NATURAL GAS			ELECTRICITY		
	C/B	NPV (000'S)	LEVELIZED COST (¢/m^3)	C/B	NPV	LEVELIZED COST
RESIDENTIAL	1	$179	19.49	2.74	$40,338	3.19
Income Qualified	0.5	($8,888)	40.29	2.8	$7,576	3.7
Commercial, Industrial, and Agricultural	2.5	$31,429	7.19	4.43	$310,159	1.59
Emerging Technologies	0.9	($104)	21.4	2.96	$4,156	2.11

REFERENCE: Daymark Evidence, page 38, Table 5: Top 10 Electric Measures by Savings

PREAMBLE TO IR (IF ANY):

Daymark's table provides Load Displacement – Project One with total incentives (utility cost) of $8.797 million.

RATIONALE:

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QUESTION:

a) Please explain the review process Daymark undertook specifically regarding the Load Displacement programming in Efficiency Manitoba's plan.

b) Please explain why the level of incentive costs proposed by Efficiency Manitoba for the Load Displacement – Project One is so low comparing the relative savings for the program with the other projects listed in Table 5.

RESPONSE:

a) Daymark reviewed measure-level Excel workpapers and held follow-up technical conferences with Efficiency Manitoba to evaluate load displacement programming proposed in Efficiency Manitoba's plan.

b) The incentive cost proposed by Efficiency Manitoba for the load displacement – project one, shown in Table 5, only includes administrative costs and annual performance-based incentives provided to the customer, which are based on the amount of generation needed in order to make it economic for the customer to save money by producing energy and does not include contributions to capital cost or any other cost associated with the project. The administrative cost is considered for each year of the 2020/23 plan, whereas the performance-based incentives, paid in terms of kWh produced by the project, is considered for the next fifteen years.

REFERENCE: Daymark Evidence, Page 86-87 and PUB/EM-I-11a (page 2)

PREAMBLE TO IR (IF ANY):

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RATIONALE:

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QUESTION:

(a) Residential 'New Homes & MR' and 'Home Renovation' programs indicate the PACT benefits in cents/kW.h that exceed 10 cents. Please indicate in qualitative (and if possible quantitative) terms how these values are so high compared to other measures. Is it entirely due to load profile (e.g., savings of energy in higher value periods?), added capacity savings (high levels of peak reduction in relation to energy reductions), or is there other factors contributing?

(b) Please provide for each measure the profile of savings from these programs in terms of on-peak, off-peak, summer/winter and peak/energy as a proportion of total savings in the year.

RESPONSE:

a) The page from Daymark's Evidence cited above refers to a table that summarizes the PACT ratio at the DSM Bundle level. In fact, there are many individual measures included in the New Homes & Major Renovation and Home Renovation categories, not all of which have PACT benefits divided by annual energy savings in kWh that exceed 10 cents. However, among those that do exceed 10 cents, it appears many of them have estimated cumulative kW savings in the winter that is more than double that for the summer period, contributing to significant savings from marginal capacity values. The proportion of savings from capacity savings being higher than average increases the per kWh savings.

b) See a) above for the requested winter vs summer peak savings provided for two examples. The New Homes & Major Renovation category represents a combined 20 measures, while the Residential Renovation category includes a dozen sub categories, each of which may have as many as 8 measures. Daymark did not assemble data for peak and seasonal profiles for each measure. The response to PUB/EM 1-11a-b referenced in the question above did not provide this level of detail, focusing instead on programs and bundles.