REFERENCE:

13 and 15-16 (PDF 58 and 60-61)
20-21 (PDF 223-224)

PREAMBLE TO IR (IF ANY):

Section 2 of the Efficiency Manitoba Act states:
"consumption means, on a weather-adjusted basis,
(a) for electrical energy, electrical energy that is metered and sold to a customer in Manitoba"

Section 7 (1) of the Efficiency Manitoba Act states
"Subject to the regulations, the annual savings targets that Efficiency Manitoba is responsible for meeting in the 15-year period following the commencement date are as follows:
Electrical Energy
In the initial year following the commencement date, net savings that are at least equal to 1.5% of the consumption of electrical energy in the preceding year.
In each of the following years, incremental net savings that are at least equal to 1.5% of the consumption of electrical energy in the immediately preceding year."

Section A2 (page 20) of the Application states:
"The publicly available Manitoba Hydro 2018 Electric Load Forecast was used to provide the estimated future energy consumption, which identifies annual electric consumption (in GWh) at the point of generation".

QUESTION:

a) Please provide, for the record in this proceeding, a copy of the Manitoba Hydro 2018 Electric Load Forecast used as the basis for determining the electric energy savings targets.
b) Please confirm that the values used for setting the 2020/21, 2021/22 and 2022/23 targets were based on forecasts for the years 2019/20, 2020/21 and 2021/22

respectively. If not, please explain why given the targets are to be based on "the consumption of electrical energy in the preceding year".

c) It is noted that Section 2 of the Efficiency Manitoba Act defines consumption as "electrical energy that is metered and sold to a customer in Manitoba". Do the Manitoba Hydro 2018 Electric Load Forecast values used include Construction Power and/or Station Service (discussed on pages 37 and 40 of the Load Forecast document)? As part of the response please indicate how the inclusion/exclusion of Station Service and Construction Power aligns with the Act's definition of consumption as being electrical energy that is "metered" and "sold to a customer".

d) It is noted that Section 2 of the Efficiency Manitoba Act defines consumption as "electrical energy that is metered and sold to a customer in Manitoba". Do the Manitoba Hydro 2018 Electric Load Forecast values used include forecast sales related to i) Residential Flat Rate Water Heaters (page 20 of the Load Forecast document); ii) Commercial Flat Rate Water Heaters (page 26 of the Load Forecast document) or iii) Lighting (page 30 of the Load Forecast document). As part of the response please indicate how the inclusion/exclusion of these items aligns with the Act's definition of consumption as being electrical energy that is "metered" since in all three instance some if not all of the electrical energy is not metered.

RATIONALE FOR QUESTION:

To understand the basis for the determination of the annual targets used for electrical energy and how they align with the requirements of the Act.
It is noted that PUB-EM-45a) and 46 were reviewed and this question was revised to remove duplication.

RESPONSE:

a) The requested document is provided in PUB/EM I-45.

b) Confirmed.

c) Requested information is not within the knowledge of Efficiency Manitoba. As shown in PUB/EM I-45a Efficiency Manitoba uses the gross firm energy at generation to calculate the annual electric energy savings percentage of load.

d) Requested information is not within the knowledge of Efficiency Manitoba. As shown in PUB/EM I-45a Efficiency Manitoba uses the gross firm energy at generation to calculate the annual electric energy savings percentage of load.

REFERENCE:

13 and 15-16 (PDF 58 and 60-61)
20-21 and 24 (PDF 223-224 and 227)
1 (Table A3.1) (PDF 248)
V and 63

PREAMBLE TO IR (IF ANY):

The Application states (Section A2, page 20):
"This load forecast accounts for future codes and standards savings from prior years to establish a base electric load for the percent of load calculation. For 2021/22 and 2022/23 years, an adjustment is also made to the load forecast to remove energy savings from prior DSM activity (example 2020/21) included within the Plan".

The Manitoba Hydro 2018 Load Forecast states (page 63):
"The base forecast reflects future DSM savings associated with existing Provincial building codes and improved equipment efficiency standards and regulations (Codes and Standards) and is the only effect of DSM initiatives that is specifically accounted for in the forecast. Savings due to DSM programs to date are embedded in the historical data that is the basis for this forecast with the current level of past achieved DSM savings is assumed to remain in place throughout the future. Future DSM savings arising from future DSM offerings and market engagement above the current level and incremental to the above mentioned Codes and Standards are not reflected in this forecast. They are accounted for separately in Manitoba Hydro's DSM Plan and Power Resource Plan."

QUESTION:

a) If no adjustment was made for the year 2020/21 (as suggested by the referenced quote from the Application), please explain why.
b) For each of the adjustments set out in schedule provided in response to part (a) please explain what the adjustment represents (i.e., the savings being removed represent savings from the DSM programs or Codes & Standards implemented in what years?)

c) Based on the referenced quote from the Manitoba Hydro 2018 Load Forecast please confirm that the Load Forecast includes the impact of DSM programs and Codes & Standards implemented in the years 2017/18 and earlier. If not confirmed, please explain why with reference to the Manitoba Hydro 2018 Load Forecast document.

d) Please confirm that the adjustments made per part (a) reflect:

I. For the 2020/21 target - the impact of DSM programs and Codes & Standards implemented in the years 2018/19 and 2019/20 on the 2019/20 forecast per Manitoba Hydro's 2018 Load Forecast.

II. For the 2021/22 target – the impact of DSM and Codes & Standards implemented in the years 2018/19 through 2020/21 on the 2021/22 forecast per Manitoba Hydro's 2018 Load Forecast.

III. For the 2022/23 target – the impact of DSM program and Codes & Standards implemented in the years 2018/19 through 2021/22 on the 2022/23 forecast per Manitoba Hydro's 2018 Load Forecast.

If not confirmed, please explain why.

e) Please provide a schedule that details the adjustments made by year implemented for both DSM programs and Codes & Standards using following format:

Target Year	2020/21 (GWh)	2021/22 (GWh)	2022/23 (GWh)
DSM Programs Implemented 2018/19			
Codes and Standards Implemented 2018/19			
DSM Programs Implemented 2019/20			
Codes and Standards Implemented 2019/20			
DSM Programs Implemented 2020/21			
Codes and Standards Implemented 2020/21			
DSM Programs Implemented 2021/22			
Codes and Standards			

Implemented 2021/22			
Total Adjustment (GWh)			

f) Are the annual program electric savings set out in Table A3.1 "annualized" savings (i.e., assuming all programs and Codes and Standards implemented at the start of the year) or do they account for the fact that, in their first year, DSM programs and Codes & Standards will be implemented throughout the year? For each of the years 2020/21 through 2022/23 please provide both the first year actual impact of the programs and the impacts assuming the programs were all implemented as of the start of the year.

g) Section A2 (page 24) discusses the issue of persistence. Was loss of persistence taken into account when determining the adjustments to be made in 2020/21 through 2022/23 for the impact of prior years' DSM programs?

I. If yes, please confirm that this loss in persistence is reflected in the schedule provided in response to part (f).

II. If not, why not?

RATIONALE FOR QUESTION:

To understand the basis for the determination of the annual targets used for electrical energy.

RESPONSE:

a) As shown in PUB/EM I-45a, adjustments were made for the year 2020/21 as shown in the table provided.

b) Please see response to PUB/EM I-45a.

c) Confirmed.

d) Adjustments made per part (a) reflect:

I. For the 2020/21 target:

Confirmed for Codes & Standards. As shown in the table provided in the response to PUB/EM I-45a, the 2018 Codes & Standards represents the cumulative impact from 2018/19 and 2019/20.

Not Confirmed for the impacts of DSM Programs where only 2019/20 energy savings are removed from the 2018 Manitoba Hydro load forecast as shown in the response to PUB/EM I-45a.

II. For the 2021/22 target:

Confirmed for Codes & Standards. As shown in the table provided in the response to PUB/EM I-45a, the 2018 Codes & Standards represents the cumulative impact from 2018/19 through 2020/21.

Not Confirmed for the impacts of DSM Programs where 2019/20 energy savings are removed from the 2018 Manitoba Hydro load forecast as shown in the response to PUB/EM I-45a for 2019/20 and the Efficiency Manitoba 2020/21 energy savings are removed for determining the 2021/22 target.

III. For the 2022/23 target:

Confirmed for Codes & Standards. As shown in the table provided in the response to PUB/EM I-45a, the 2018 Codes & Standards represents the cumulative impact from 2018/19 through 2021/22.

Not Confirmed for the impacts of DSM Programs where 2019/20 energy savings are removed from the 2018 Manitoba Hydro load forecast as shown in the response to PUB/EM I-45a for 2019/20 and the Efficiency Manitoba 2020/21 through 2021/22 energy savings are removed for determining the 2022/23 targets.

e) Please see response to PUB/EM I-45a.

f) New in-year savings in the first year are determined by the annualized first year savings assuming that the measures were all adopted at the start of the year. Prorating actual energy savings in the first year to recognize when each measure was adopted within the year would be administratively cumbersome, does not alter that the energy efficiency measure has physically been installed, and when considering a 15-year time horizon would not alter achievement of the cumulative energy savings target.

The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time available.

g) Persistence factors are a measure level attribute and were accounted in determining the annual energy savings.

I. Efficiency Manitoba can confirm that persistence factors are reflected in determining the annual energy savings targets provided in the response to PUB/EM I-45a. Additional persistence factor information is provided in MIPUG/EM I-5.

II. Not applicable.

REFERENCE:

13 and 16 (PDF 58 and 61)
21 and 22 (PDF 224 and 225)
4 (Table A3.2) (PDF 251)

PREAMBLE TO IR (IF ANY):

The Application states (Section 2, page 16):
"In order to provide a representative derivation of the natural gas target, Efficiency Manitoba utilized the 2017/18 gross actual natural gas volume consumption provided within the Manitoba Hydro 2017/18 annual report which was publicly available at the time of Plan preparation. This allows the communication of the natural gas energy savings targets in a manner which does not release commercially sensitive information. Using this 2017/18 gross actual natural gas volume consumption, natural gas consumption used as an input to industrial production and natural gas used to generate electric power were removed from this value as per the description for "consumption" provided in Section 2 of the Act."

The Application also states (Section A2, page 21):
"As with the electric target derivation, the natural gas energy savings attributed to Plan activities within prior years were removed from the volume forecast in 2021/22 and 2022/23 in order to avoid double-counting."

Section 2 of the Efficiency Manitoba Act states:
"consumption means, on a weather-adjusted basis, …
(b) for natural gas, natural gas that
(i) is metered and sold to a customer in Manitoba, and
(ii) is not used as a feedstock or ingredient in the manufacture of a product."

QUESTION:

a) Please confirm that the value 2017/18 gross actual natural gas volume consumption used from the Manitoba Hydro 2017/18 Annual Report was 2,048 million cubic meters. If not confirmed please provide the value used and the basis for the value.

b) Was the actual value for 2017/18 weather adjusted per the Act's definition of consumption? If not, why not?

c) Please provide a schedule that for each of years 2020/21 through 2022/23 sets out the actual 2017/18 gross actual natural gas volume consumption (per the 2017/18 Annual Report) and the adjustments for i) weather (if included); ii) natural gas used as an input to industrial production; iii) natural gas used to generate electrical power and iv) natural gas savings attributable to Plan activities within prior years referred in the above quote in order to arrive at the reference natural gas volumes shown in Table A2.2 of the Application. As part of the response please provide references to support the values used for the adjustments and the relevant supporting documents if not already part of the record for this proceeding.

d) With respect to the adjustments for "natural gas savings attributable to Plan activities within prior years", please provide a schedule that for each of the years breaks down the adjustment so as to show the value for each prior year included per the following format. As part of the response, please provide the rationale for the "years" included in the adjustment.

Target Year	2020/21	2021/22	2022/23
DSM Programs by Year of Implementation (one row for each year)			
Codes and Standards by Year of Implementation (one row for each year)			
Total Adjustment (millions of cubic meters)			

e) If no adjustment for "natural gas savings attributable to Plan activities within prior years" was made for the year 2020/21 (as suggested by the referenced quote from the Application), please explain why.

f) Are the annual program natural gas savings set out in Table A3.2 "annualized" savings (i.e., assuming all programs and Codes and Standards implemented at the start of the year) or do they account for the fact that, in their first year, DSM programs and Codes & Standards will be implemented throughout the year? For each of the years 2020/21 through 2022/23 please provide both the first year actual impact of the programs and the impacts assuming the programs were all implemented as of the start of the year.

g) Section A2 (page 24) discusses the issue of persistence. Was loss of persistence taken into account when determining the adjustments to be made in 2020/21 through 2022/23 for the impact of prior years' DSM programs?

   I. If yes, please confirm that this loss in persistence is reflected in the schedule provided in response to part (d).

   II. If not, why not?

h) It is noted that the Manitoba Hydro Annual Report for 2018/19 is now publically available. Please provide a revised response to part (c) – using the actual 2018/19 gross actual natural gas volume consumption (per the 2018/19 Annual Report) as the starting point.

RATIONALE FOR QUESTION:

To understand the basis for the determination of the annual targets used for natural gas.

RESPONSE:

a) Confirmed. Please see PUB/EM I-45d.

b) In order to utilize a publicly available natural gas consumption value a weather adjustment to the actual value for 2017/18 was not completed.

c) Please see PUB/EM I-45d. Weather adjustment is discussed in COALITION/EM I-3b. The requested natural gas adjustments for industrial production and natural gas used to

generate electrical power were completed on a combined basis as shown in PUB/EM I-45d.

d) Please see PUB/EM I-45d.

e) As shown in PUB/EM I-45d, Manitoba Hydro 2019/20 DSM Plan natural gas savings were removed for the year 2020/21.

f) Please see response to COALITION/EM I-2f.

g) Please see response to COALITION/EM I-2g.

h) The following is a link to Manitoba Hydro's Annual Report for the year ended March 31, 2019. https://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2018_19.pdf

Please refer to the table provided below. The 2018/19 reference natural gas million (million m3) volume in Table A2.2 of the 2020/23 Efficiency Plan, Section A2, p. 225 of 591, can be derived by referencing the Manitoba Hydro 2018/19 annual report (PDF p. 113 of 117), table "Natural Gas Revenues and Deliveries". This value is then used as a proxy natural gas forecast value to use publicly available information. This delivery value is then adjusted consistent with the "consumption" definition contained within the Act. As shown in the table provided and in order to establish an appropriate reference natural gas volume for the percent of load calculation to following adjustments are needed:

- Natural gas consumption used as an input to industrial production and natural gas used to generate electric power were removed as per the description for "consumption" provided in Section 2 of the Efficiency Manitoba Act;
- An adjustment is also made to the natural gas volumes to remove energy savings from prior DSM savings. See PUB/EM I-26e for the 2019/20 DSM Plan (p. 21 of 72); and
- Since the base natural gas volume does not include projected Efficiency Manitoba DSM savings, activity from the 2020/23 Efficiency Plan ("Plan") needs to be removed in subsequent years to reflect projected energy savings.

Once the base natural gas volume is established, natural gas energy savings targets are calculated as the percentage of the prior year's forecasted natural gas volume.

Natural Gas Forecast Year	2019/20	2020/21	2021/22
2018/19 actual natural gas consumption (million m^3)	2,229	2,229	2,229
Less: Adjustment from Section 2 of the EM Act	[redacted]		
2018/19 adjusted natural gas consumption (million m^3)			
Less: 2019/20 DSM Plan (million m^3)	8.0	8.0	8.0
Less: Cumulative EM Plan savings (million m^3)	-	11.7	24.5
2018/19 reference natural gas volume (million m^3)	1,730	1,718	1,706
Table A2.2 (Updated for 2018/19)	**2020/21**	**2021/22**	**2022/23**
2018/19 reference natural gas volume (million m^3)	1,730	1,718	1,706
Target percent of load	0.75%	0.75%	0.75%
Natural gas savings required to achieve target (million m^3)	13.0	12.9	12.8

2b

REFERENCE:

13 (PDF 58)
2-3 (PDF 77-78)
20-24 (PDF 223-227)
1 (PDF 248)

PREAMBLE TO IR (IF ANY):

In Section 2 (page 13) the Application states:
"The Act mandates that Efficiency Manitoba is responsible for achieving annual net savings targets that are at least equal to 1.5 percent of electrical energy consumption and 0.75 percent natural gas consumption in the preceding fiscal year, respectively. Over 15 years, the corresponding cumulative total annual percentage savings targets for electrical energy is 22.5 percent".

In Section A2 (pages 22-23) the Application states:
"Annual energy savings targets are described as incremental savings or also described as new in-year savings. Incremental energy savings are only those for the first year the measure is implemented, regardless of product life. Cumulative savings continue to add up, year-over-year, for the entire product life of the measure."

In Section A2 (page 24) the Application also states:
"The persistence factor relates to the percentage of energy-efficient measures that remain installed over the product lifetime."

QUESTION:

a) The target savings used in the Application (Table A2.1) are calculated using reference electricity loads that have been determined using forecast values from the Manitoba Hydro 2018 Load Forecast. At some point in time the actual electricity loads in the preceding years will be known. When this occurs, for purposes of determining if Efficiency Manitoba has actually met the 15 year cumulative total annual energy savings target for electricity of 22.5% will: i) the reference electric load be updated and the

required target savings recalculated using the actual values or ii) the required savings still be as calculated in the current Application? Please provide the rationale for the approach Efficiency Manitoba proposes to use.

b) How does Efficiency Manitoba plan on calculating its annual progress towards meeting and whether it eventually has met the 22.5% target for electricity? For example, does it plan on calculating the actual savings percentage for each year and then comparing the average percentage achieved with the annual 1.5% target – as done in Table A3.1?

c) Is it the new in-year savings in the first year that are used to determine a DSM program's contribution to the savings target – regardless of the life of the measures or the persistence in savings over the life of the measures used in the DSM program?

d) For purposes of determining the new in-year savings in the first year is the value used based on: i) actual savings in the first year recognizing that measures will be not all be adopted at the start of the year or ii) the "annualized" first year savings assuming that the measures were all adopted at the start of the year?

RATIONALE FOR QUESTION:

To understand how savings will be defined and measured for purposes of assessing actual performance versus target for electricity savings.

RESPONSE:

a) As per the definition outlined in the Efficiency Manitoba Act, the savings targets are based on the consumption of electricity in the immediately preceding year. Based on timing, the 2020/23 Efficiency Plan ("Plan"), as well as subsequent Efficiency Plans will always need to be based on a projected load. The publicly available Manitoba Hydro 2018 Electric Load Forecast was used to provide the estimated future energy consumption at the point of generation. Efficiency Manitoba's actual savings will be evaluated and verified by the third-party assessor and the actual weather adjusted consumption will be used for that calculation.

b) Please see the response to DAYMARK/EM I–83a-c for the description and calculations that will be used to assess Efficiency Manitoba's progress towards meeting the cumulative energy savings targets.

c) Confirmed. The annual energy savings targets can only be met by new in-year savings. For example, achievement of the energy savings target in year 3 will not be able to include a measure installed in year 1 even though the persistence and/or measure life will result in savings beyond the first year.

d) New in-year savings in the first year are determined by the annualized first year savings assuming that the measures were all adopted at the start of the year. Prorating actual energy savings in the first year to recognize when each measure was adopted within the year would be administratively cumbersome, does not alter that the energy efficiency measure has physically been installed, and when considering a 15-year time horizon would not alter achievement of the cumulative energy savings target.

REFERENCE:

13 (PDF 58)
23-24 (PDF 98-99)
20-24 (PDF 223-224)
3-4 (PDF 250-251)

PREAMBLE TO IR (IF ANY):

In Section 2 (page 13) the Application states:
"The Act mandates that Efficiency Manitoba is responsible for achieving annual net savings targets that are at least equal to 1.5 percent of electrical energy consumption and 0.75 percent natural gas consumption in the preceding fiscal year, respectively. Over 15 years, the corresponding cumulative total annual percentage savings targets … and 11.25 percent for natural gas."

In Section A2 (pages 22-23) the Application states:
"Annual energy savings targets are described as incremental savings or also described as new in-year savings. Incremental energy savings are only those for the first year the measure is implemented, regardless of product life. Cumulative savings continue to add up, year-over-year, for the entire product life of the measure."

In Section A2 (page 24) the Application states:
"The persistence factor relates to the percentage of energy-efficient measures that remain installed over the product lifetime."

QUESTION:

a) The target savings used in the Application (Table A2.2) are calculated using reference natural gas volumes that have been determined using actual 2017/18 values from the Manitoba Hydro 2017/18 Annual Report. At some point in time the actual natural gas volumes in the preceding years will be known. When this occurs, for purposes of determining if Efficiency Manitoba has met 15 year cumulative total annual energy savings target for natural gas of 11.25% will: i) the reference natural gas volume be

updated and the required target savings recalculated using the actual values or ii) the required savings still be as calculated in the current Application? Please provide the rationale for the approach Efficiency Manitoba proposes to use.

b) How does Efficiency Manitoba plan on calculating its annual progress towards meeting and whether it eventually has met the 11.25% target for natural gas? For example, does it plan on calculating the actual savings percentage for each year and then comparing the average percentage achieved with the annual 0.75% target – as done in Table A3.2?

c) Is it the new in-year savings in the first year that are used to determine a DSM program's contribution to the savings target – regardless of the life of the measures or the persistence in savings over the life of the measures?

d) For purposes of determining the new in-year savings in the first year is the value used based on: i) actual savings in the first year recognizing that measures will be not all be adopted at the start of the year or ii) the "annualized" first year savings assuming that the measures were all adopted at the start of the year?

RATIONALE FOR QUESTION:

To understand how savings will be defined and measured for purposes of assessing actual performance versus target.

RESPONSE:

a) As per the definition outlined in the Efficiency Manitoba Act, the savings targets are based on the consumption of natural gas in the immediately preceding year. Based on timing, the 2020/23 Efficiency Plan ("Plan"), as well as subsequent Efficiency Plans will always need to be based on a projected natural gas consumption volume. Given that natural gas load forecast data is considered commercially sensitive information by Centra Gas, the Plan used publicly available previous years volume data for natural gas consumption to demonstrate the achievement of targeted energy savings. Efficiency Manitoba's actual savings will be evaluated and verified by the third-party assessor and the actual weather adjusted consumption will be used for that calculation.

b) Please response to DAYMARK/EM I-83a-c for the description and calculations that will be used to assess Efficiency Manitoba's progress towards meeting the cumulative energy savings targets.

c) Confirmed. The annual energy savings targets can only be met by new in-year savings. For example, the achievement of energy savings target in year 3 will not be able to include a measure installed in year 1 even though the persistence and/or measure life will result in savings beyond the first year.

d) New in-year savings in the first year are determined by the annualized first year savings assuming that the measures were all adopted at the start of the year. Prorating actual energy savings in the first year to recognize when each measure was adopted within the year would be administratively cumbersome, does not alter that the energy efficiency measure has physically been installed, and when considering a 15-year time horizon would not alter achievement of the cumulative energy savings target.

REFERENCE:

14 & 17 (PDF 24 & 27)
16-17 (PDF 61-62)
4 (PDF 79)
5 & 27 (PDF 130 & 152)

PREAMBLE TO IR (IF ANY):

Section 5 (page 27) of the Application states:
"The increase in electric energy savings being achieved also increases the impact of interactive effects. For Efficiency Manitoba, interactive effects increase the gross natural gas savings required to achieve the mandated savings target by 20 percent".

QUESTION:

a) Please confirm that increases in natural gas usage due to the interactive effects from electricity DSM programs are treated as a reduction in natural gas saving for purposes of net savings and percent of target achieved. If not confirmed, how are they treated for purposes of determining net electricity and natural gas savings?
b) Please explain why such interactive effects are treated as a reduction in natural gas savings and effectively lower the cost effectiveness of the overall natural gas portfolio when they are due to electricity DSM programs?
c) Why would it not be more appropriate to determine what would be the electric energy equivalent of the increased natural gas used and treat it as a reduction in electric savings due to the DSM programs?
d) What would be the impact on the overall PACT results for the electricity portfolio and the natural gas portfolio if the interactive impacts were treated as outlined in part (c)?
e) How are the increased GHG emissions attributable to the increased natural gas use due to the interactive effects with electricity DSM programs accounted for (e.g., are they used to reduce the GHG emission savings attributable to the natural gas portfolio)?
    I. Please explain why the treatment is appropriate given the increase in emissions is due to electric DSM programs.

RATIONALE FOR QUESTION:

RESPONSE:

a) Confirmed. Increases in natural gas usage due to interactive effects from electricity DSM programs are treated as a reduction in natural gas saving for purposes of net savings and percent of target achieved.

b) The definition of net savings from the Efficiency Manitoba Act (p. 3) states that *"net savings means, in respect of a change in the consumption of electrical energy or natural gas in Manitoba, the savings that occur after taking into account any other adjustments in the consumption that are attributable to, or influenced by, the change."* Given that electricity savings reduce the waste heat that is useful within buildings during the heating season, there is an adjustment (increase) in the heating requirement which will be made up for by the electric or natural gas heating system. In electrically heated buildings, this increase in heating is subtracted from the measure's electricity savings. In gas heated buildings, this increase in gas usage must be counted against the natural gas DSM portfolio.

c) It would not be appropriate to convert the increased natural gas consumption into an equivalent amount of electricity because this would not reflect the actual energy consumption change that is occurring in the province and it would not accurately reflect the actual net savings achieved by the DSM Program portfolio. The approach used by Efficiency Manitoba in the 2020/23 Efficiency Plan ("Plan") is consistent with the approach previously used by Manitoba Hydro.

d) Efficiency Manitoba is not able to calculate the requested scenario within the timelines set out for this public review process. However, the Natural Gas Program Portfolio cost effectiveness metrics have been reported with and without the impacts of interactive effects, enabling strategies or corporate overhead (Plan, Section 5.2, Table 5.4, p. 136 of 591). The following table provides an update to Table 5.4 which now includes calculation of the program administrator cost test (PACT) metrics excluding only interactive effects from the natural gas portfolio.

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¢/m³
NO INTERACTIVE EFFECTS METRICS	1.24	$14.4 million	14.96¢/m³
OVERALL PORTFOLIO METRICS	0.99	($0.8 million)	18.69¢/m³

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

e) The increased natural gas consumption due to interactive effects of electric DSM is netted out of the natural gas energy savings. The GHG emissions impacts are also calculated on the net natural gas energy savings after interactive effects are considered.

   I. This treatment is appropriate given that the increase in natural gas consumption, and therefore GHG emissions, is a direct result of electric DSM programs. This increase in emissions must be accounted for in the overall Efficiency Manitoba program portfolio as this is the impact to the energy use that is actually occurring in Manitoba.

REFERENCE:

19-20 (PDF 64-65)
19-20 (PDF 434-435)

PREAMBLE TO IR (IF ANY):

Section 2 (pages 19-20) of the Application state:
"Section 8 within the Regulation requires that the savings be reasonably attributable:
…
• a code, standard, or regulation to which a material contribution has been made by Efficiency Manitoba or Manitoba Hydro"

Section A9 (page 20) shows forecasted natural gas and electric energy savings from Codes and Standards for each of the years 2020/21, 2021/22 and 2022/23.

Section A9 (page 19) states "energy savings from codes and standards efforts are also adjusted for interactive heating and cooling effects."

QUESTION:

a) With respect to Table A9.1, are the negative natural gas savings values associated with Residential General Service Lighting Standards and Commercial General Service Lighting Standards both attributable to adjustments for "interactive effects"?
b) Are there any other "interactive effects" captured in Table A9.1 and, if so, what are they and where are they incorporated?
c) Are the savings reported in each year the forecasted effect of new codes and standards Efficiency Manitoba is expecting will be implemented in that particular year (e.g., Is the 16.1 GWh of electric savings attributed to Residential Building Code requirements in 2020/21 represents the impact of forecasted changes to the Residential Building Code that will be made in 2020/21 and the 14.8 GWh forecast for 2021/22 is the impact of further changes to the Residential Building Code expected to be made in 2021/22)? If not, what do the savings represent?

RATIONALE FOR QUESTION:

To understand the savings reported for Codes and Standards.

RESPONSE:

a) Yes, the negative natural gas savings values associated with Residential General Service Lighting Standards and Commercial General Service Lighting Standards are both attributable to increased natural gas consumption from electric interactive effects.

b) Table A9.1 only includes interactive effects resulting from the Residential General Service Lighting Standards and Commercial General Service Lighting Standards.

c) The savings reported in each year are the forecasted impact of codes and standards on the Manitoba load due to codes and standards that are in effect in that year. This can be from a code that was enacted in a prior year that is impacting the consumption of a newly constructed building, for example, that is still impacting the load; or a new code coming into force in that year.

REFERENCE:

8 (PDF 18)
23 (PDF 68)
4-6 (PDF 79-81)

PREAMBLE TO IR (IF ANY):

Section 11 of the Regulation states that among the factors the PUB must consider when reviewing an efficiency plan is:
"(c) whether, if it is practical to do so, at least 5% of Efficiency Manitoba's budget for demand-side management initiatives is allocated to initiatives targeting low-income or hard-to-reach customers."

Section 1 (page 8) of the Application states:
"It is imperative that all Manitoba customer segments have representation within Efficiency Manitoba's Plan. These segments have been defined within the Plan to include residential customers; income-qualified residential customers; Indigenous customers; and commercial, industrial, and agricultural customers. These customer segments have been selected to be inclusive of all Manitobans and to capture their unique customer behaviour characteristics and energy consumption patterns."

Section 2 (page 23) of the Application states:
"The term "hard-to-reach" customers includes both income qualified customers and Indigenous customers as both segments face unique barriers to implementing energy efficiency opportunities."

QUESTION:

a) Please describe the "unique barriers to implementing energy efficiency opportunities" that make both income qualified customers and Indigenous customers "hard to reach".
b) Are there any other customer segments (e.g., apartment dwellers, seniors, rural customers, etc.) that face similar or other barriers such that they could be considered "hard to reach"?

I. If yes, why have they not been separated out and treated as a unique customer segment?

RATIONALE FOR QUESTION:

To understand Efficiency Manitoba's definition of "hard to reach".

RESPONSE:

a) Lower income customers may be hard to reach due to a variety of demographic, cultural, social, and economic factors. For a complete description, please see PDF pages 315-316 (lines 56-82) of the Plan. As per Appendix A – Section A6 PDF page 355, First Nations on reserve land may face barriers such as geographic location, lack of home ownership, less disposable income to perform upgrades, and there may be multiple competing resources within the First Nation.

b) Depending on individual circumstances, other customers such as apartment dwellers, seniors and rural customers may be considered hard-to-reach. In addition to Income Qualified Offers and Indigenous Programs, there are strategies within Residential Programs to target other hard-to-reach customers. For further information, please see the response to PUB/EM I-3a.

REFERENCE:

8 and 27 (PDF 18 and 37)
4-12 (PDF 160-166)
4-10 and 14-21 (PDF 251-257 and 261-268)

PREAMBLE TO IR (IF ANY):

Section 11 of the Regulation states that among the factors the PUB must consider when reviewing an efficiency plan is:
"(b) whether the plan adequately considers the interests of residential, commercial and industrial customers;"

Section 1 (page 8) of the Application states:
"It is imperative that all Manitoba customer segments have representation within Efficiency Manitoba's Plan. These segments have been defined within the Plan to include residential customers; income-qualified residential customers; Indigenous customers; and commercial, industrial, and agricultural customers. These customer segments have been selected to be inclusive of all Manitobans and to capture their unique customer behaviour characteristics and energy consumption patterns."

QUESTION:

a) Section 1 suggests that industrial, commercial and agricultural customers are considered a single customer segment for purposes of developing the electricity and natural gas portfolios. However, Sections 6 and A3 separately identify and discuss the results for industrial, commercial and agricultural customers. Please reconcile and clarify for what purposes are the industrial, commercial and agricultural customers considered one customer segment and for what purposes are they considered to be three distinct customer segments.
b) Is Manitoba Hydro considered to be an industrial/commercial customer eligible for DSM programs?

RATIONALE FOR QUESTION:

To understand Efficiency Manitoba's customer segmentation.

RESPONSE:

a) Each of commercial, industrial, and agricultural may be considered sub-segments within the larger customer segment defined in the 2020/23 Efficiency Plan ("Plan") as the Commercial, Industrial, and Agricultural customer segment. This customer segment describes a group of Efficiency Manitoba customers that share a great number of common energy efficiency technology opportunities, including but not limited to lighting, windows, insulation, heating, ventilation, and air conditioning opportunities. This homogeneity allows all customers within the customer segment to be serviced by Efficiency Manitoba through a common group of program bundles as illustrated in the following table (Plan, Section 1, p. 19 of 591).

CUSTOMER SEGMENT	PROGRAM BUNDLES			
RESIDENTIAL	Direct install Offers	Product Rebate Offers	Home Renovation Offers	New Homes & Major Renovation Offers
	Home Energy Efficiency Kits & Education	Emerging Technology Offers		
RESIDENTIAL INCOME QUALIFIED	Income Qualified Offers			
INDIGENOUS	Insulation & Direct install Offers	Metis Income Qualified Offers	Small Business Offers	Community Geothermal Offer
COMMERCIAL, INDUSTRIAL & AGRICULTURAL	Small Business Offers	In-Suite Efficiency	Renovation Offers	HVAC & Controls Offers
	New Construction & High-Performance Buildings	Custom Offers	Load Displacement Offer	Emerging Technology Offers

The program bundle approach to energy savings, groups offerings that share features and comparable delivery models, thus reducing paperwork, streamlining the process and providing targeted customer segments with the information they need to make decisions to improve energy efficiency.

The industrial and agricultural sub-segments present additional energy efficiency opportunities, generally specific to the process or production energy load related to the outputs associated with the specific industrial or agricultural facility. These types of opportunities are supported through the Custom Offers and Load Displacement Offer areas shown above.

Sections 6 and Appendix A – Section A3 in the Plan separately identify and discuss the results for commercial, industrial, and agricultural customers, intentionally, in order to demonstrate that the design of the Plan provides for an inclusive and diverse efficiency portfolio that considers all customer segments. Illustrating the results for commercial, industrial, and agricultural respectively, provides the context and details necessary to determine the planned energy savings while establishing that the associated portfolio budget breakdown is both reasonable and accessible to the diverse customers within Manitoba.

b) Manitoba Hydro would be considered a customer eligible for programs offered through the Commercial, Industrial, and Agricultural customer segment.

REFERENCE:

8 (PDF 18)
6-8 (PDF 81-83)
7 and 13 (PDF 210 and 216)

PREAMBLE TO IR (IF ANY):

Section 1 (page 8) of the Application states:
"Within the Plan, a DSM program or initiative refers to a single specific energy-efficient technology or measure that will be offered to Efficiency Manitoba customers. A "program bundle" is a grouping of individual DSM initiatives while the term "portfolio" refers to either the entire electric or natural gas programming including all customer segment program bundles for each of the respective energy sources."

Section 3 (page 6) of the Application states:
"Within the Plan, a DSM program or initiative refers to a single specific energy-efficient technology or measure that will be offered to Efficiency Manitoba customers. A "program bundle" is a grouping of individual DSM initiatives while the term "portfolio" refers to either the entire electric or natural gas programming which including all customer segment program bundles for each of the respective energy sources."

Section 2 of the Act states:
""demand-side management initiative" means a measure or action taken, or a program, service or rate designed to reduce the consumption of electrical energy or natural gas, including a resulting reduction in the demand for electrical power, in Manitoba, but does not include
(a) a measure, action, program, service or rate that encourages or results in a switch from the use of one kind of fuel source to another if the switch increases greenhouse gas emissions in Manitoba; or
(b) a prescribed measure, action, program, service or rate."
Regarding the Plan development process, the Application states:
1. "The ideas generated throughout the innovation stage were populated into program models" (Section A2, page 13)
2. "Efficiency Manitoba was able to leverage research that had already been contracted by

Manitoba Hydro in 2017 by reviewing and incorporating recommendations contained within the resulting Manitoba Hydro DSM Optimization report related to the various strategies that could be used to achieve greater electric and natural gas energy savings." (Section 3, page 7)

3. "When looking to achieve the mandated savings targets, Efficiency Manitoba started with an analysis of existing individual technologies and program bundles." (Section 3, page 7)

4. "In order to achieve the savings targets, enhancements to existing DSM programs in Manitoba as well as new programs, offers, and initiatives are included in the Plan." (Section 3, page 8)

5. "Recognizing cost effectiveness and continuity for established industry and customer benefits, Efficiency Manitoba made strategic choices on continuation of existing energy efficiency programs, offers, and initiatives. Where programs, offers and initiatives will continue, enhancements will be incorporated to address improvement opportunities to capture additional energy savings where practical. Efficiency Manitoba will also introduce new programs." (Section A2, page 7)

Overall, the focus of this question is on the how Efficiency Manitoba determined the individual measures/technologies/programs that it would subsequently consider for inclusion in what it has termed program bundles.

QUESTION:

a) For each customer segment, please provide a schedule that sets out: i) the existing programs; ii) the individual measures/technologies associated with each program (where applicable) and iii) the specific enhancements that were considered in the development of the Plan. (Note: The request is not for a listing of the potential enhancements actually included in the Plan but rather a listing of the potential enhancements considered for potential inclusion in the Plan).

b) For each of the measures/technologies associated with the existing programs and for each of the enhancements considered please provide the following:
   I. The energy form (natural gas or electricity) targeted
   II. The customer segment and specific end-use(s) that will be impacted
   III. The expected savings per participant
   IV. The percentage of the customer segment's use of the electricity/natural gas accounted for by the targeted end-use(s) (Note: The request is not for the

percentage savings that could be achieved but rather the percentage that the targeted end-use represents of the customer segment's total energy use.)

V. The life expectancy of the measure/technology/program and expected persistence in savings over that period

VI. Any interactive impacts on other energy requirements.

VII. The total incremental capital and operating costs for the measure/technology/program per participant

VIII. The environmental impacts (positive and negative) associated with the measure/technology/program per participant

IX. The fraction of the labour and materials that will be provided from within Manitoba – exclusive of program costs.

X. An indication as to whether the measure/technology is included in the proposed portfolios.

c) Was the sole source for the potential enhancements identified in response to part (c) the DSM Optimization Study? If not, how else were potential enhancements identified?

d) Does Efficiency Manitoba view the list of potential enhancements to existing DSM programs it considered for inclusion in the Plan to be a comprehensive list of available opportunities? If yes, why?

e) Please fully describe how ideas were generated during the "innovation stage" referenced in Section A2 (page 13).

f) As part of the "innovation stage" was an exercise similar to that performed by EnerNOC Utility Solutions Consulting for purposes of completing the Demand Side Management Potential Study filed by Manitoba Hydro in the PUB's NFAT proceeding (Appendix 4.3) undertaken by Efficiency Manitoba in order assist in identifying all potential opportunities? (Note: See Chapter 5 of referenced Study found at http://www.pubmanitoba.ca/v1/nfat/pdf/hydro_application/appendix_04_3_demand_side_management_potential_study.pdf)

I. If not, why not and what sources were relied on to identify potential opportunities?

II. If yes, please provide a copy of the results.

III. Please provide copies of any other sources that were relied on for purposes of identifying programs/measures/technologies for potential inclusion in the proposed portfolio.

g) Please provide, for each customer segment, a schedule listing all new technologies/measures/programs considered for inclusion in the Plan. (Note: Again, the request is not for a listing of the new technologies/measures included in the Plan but rather a listing of the new technologies/measures/programs considered for potential inclusion in the Plan). In each case, please indicate:

   I. The energy form (natural gas or electricity) targeted
   II. The customer segment and specific end-use(s) that will be impacted
   III. The expected savings per participant
   IV. The percentage of the customer segment's use of the electricity/natural gas accounted for by the targeted end-use(s). (Note: The request is not for the percentage savings that could be achieved but rather the percentage that the targeted end-use represents of the customer segment's total energy use.)
   V. The life expectancy of the measure/technology/program and expected persistence in savings over that period
   VI. Any interactive impacts on other energy requirements
   VII. The total incremental capital and operating costs for the measure/technology/program per participant
   VIII. The environmental impacts (positive and negative) associated with the measure/technology/program per participant
   IX. The fraction of the labour and materials that will be provided from within Manitoba – exclusive of program costs.
   X. An indication as to whether the measure/technology is included in the proposed portfolios.

h) Does Efficiency Manitoba view the list of new technologies/measures it considered for inclusion in the Plan to be a comprehensive list of available opportunities? If yes, why?

i) Apart from excluding programs/technologies/measures not considered to be aligned with the Act and its accompanying Regulation was there any other screening done of potential DSM opportunities prior to establishing those that would be "populated into program models" (per Section A2, page 13)? If yes, what were the screening measures used and what potential programs/technologies/measures were excluded as a result?

RATIONALE FOR QUESTION:

To understand how Efficiency Manitoba developed the list of initiatives (e.g. measures/technologies) it considered for inclusion in its proposed Efficiency Plan and the results of the exercise.

RESPONSE:

a) Please see the response to PUB/EM I-1. Programs/measures that Efficiency Manitoba considered but did not put forth in the Plan include: small scale wind, dynamic glazing, real-time energy management, energy storage, residential behavioural, personal comfort systems, advanced rooftop units, solar air pre-heating, HVAC maintenance, and variable refrigerant flow systems. PUB-EM I-1 provides details of the high level screen considerations used to develop a preliminary portfolio.

Supporting documents and workpapers used in the development of the preliminary portfolio for each technology would require an extensive amount of time to gather and coordinate as it is not kept in a centralized repository nor is it available in a consistent format (i.e. background documentation is different for each technology). Efficiency Manitoba has determined there is not adequate time to gather this information; however, two examples of this type of documentation are provided as attachments to PUB/EM I-1.

Further information request/clarification:

COALITION/EM I-10(a) requested a schedule that set out existing programs, individual measures/technologies associated with each program and the potential specific enhancements that were considered in the development of the Plan, for each customer segment. In response, Efficiency Manitoba referred back to PUB/EM I-1, which is limited to identifying measures not included in the Plan. The response does not fully answer the question as it neither addresses existing programs (it only addresses measures not included in the Plan), nor does it address the "enhancements that were considered in the development of the plan." This response is critical to the examination of the appropriateness of the methods to select or reject demand-side initiatives.

Additional response from Efficiency Manitoba (December 5, 2019):

Efficiency Manitoba focused its efforts on enhancements included in the Plan and, as such, did not endeavor to document in detail any enhancements considered but not included in the Plan. The requested detail regarding potential enhancements not included in the Plan does not exist and cannot be reasonably and reliably reproduced with reasonable effort.

Please see additional response to COALITION/EM I-10 (g) for additional detail on measures considered during the development of the Plan but which were ultimately not included. Please see also response to DAYMARK/EM I-92 for a table that shows existing programs with enhancements and new measures added by bundle/customer segment.

Note that an enhancement includes: the addition of a new measure / technology to a program bundle; revised incentive structure; changes to product eligibility; or an anticipated improved customer experience through reduction of administrative program requirements.

A high level step by step description of the process Efficiency Manitoba used to design the proposed portfolio of programs, including the methods used to select or reject measures, has been provided in the revised response to COALITION/EM I-14i.

b) Depending on the results of the high level screen completed and described in PUB/EM I-1, there are a variety of non-quantitative reasons for initiatives to have been rejected including the technology's energy savings claims are not yet proven, unavailability of local supply of the technology, or appropriateness for use in Manitoba's climate. As such, the measure specific data requested is not available. Two examples of the high level screening documentation are provided as attachments to PUB/EM I-1.

Further information request/clarification:

COALITION/EM I-10(b) requested, in relation to part (a), more detailed metrics on the current measures used and the enhancements considered. In response, Efficiency Manitoba referred back to PUB/EM I-1 and indicated that while the measure-specific data requested is not available, two examples of the high level screening documentation are provided as attachments

to PUB/EM I-1. The response is not responsive as Efficiency Manitoba should be in a position to at least provide the basic attributes for each measure considered for inclusion in the Plan. This response is relevant to the examination of the appropriateness of the methods to select or reject demand-side initiatives.

Additional response from Efficiency Manitoba (December 5, 2019):
Please see revised response to COALITION/EM I-10a regarding detail on measures and enhancements considered but not included in the proposed Plan.

With respect to new technologies and measures included within the electric or natural gas portfolio, there are several information request responses which provide measure level details as follows:

- PUB/EM I-33b identifies all the measures and technologies included within the electric and/or natural gas portfolio by customer segment and program bundle. Status as a new or continuing offer or measure within Manitoba is also provided within the response.
- The Attachment to COALITION/EM I-91 provides measure level resolution with respect to the electric energy savings, electric incentive, natural gas energy savings and natural gas incentive for every measure included within the Portfolio.
- The Attachment to DAYMARK/EM I-13 provides measure level information on free ridership and free driver modeling inputs used to determine measure level energy savings.

Savings by measure, bundle and portfolio was requested in DAYMARK/EM I-97 (electric) and DAYMARK/EM I-98 (natural gas) to which Efficiency Manitoba responded by providing electronic workpapers to Daymark based on the Non-Disclosure Agreement executed between Efficiency Manitoba and Daymark.

c) Please refer to PUB/EM I-29 for a summary of the differences and enhancements considered within the 2020/23 Efficiency Plan ("Plan"). Some potential enhancements such as program bundling were considered based on DSM Optimization Study but this was not the sole source for potential enhancements. Other consultant memo's such as

those provided in PUB-EM I-2 were also considered as were alignment with the directions of government (Plan, Section 2.2, beginning on p. 50 of 591), The Efficiency Manitoba Act and Regulation (Plan, Section 2.3, beginning on p. 55 of 591), historical DSM experience in Manitoba, feedback received through the Energy Efficiency Advisory Group and other engagement activities (Plan, Section 3.3, p. 93-94 of 591).

d) Efficiency Manitoba has considered a reasonable list of available opportunities for potential enhancements. Efficiency Manitoba recognizes that depending on the specific interpretation of "comprehensive" the list of enhancements considered may or may not be considered as such. Efficiency Manitoba looks forward to having additional potential enhancements identified through activities such as staff research, collaboration with industry partners and other program administrators and engagement with stakeholders such as through the Public Utilities Board review process and with the Energy Efficiency Advisory Group. Potential future enhancements will be evaluated according to the considerations outlined in PUB/EM I-1.

e) Section A2.1 (Plan, p. 206 of 591) summarizes that program innovation was guided by engagement with stakeholders, customers, and the EEAG. This section provides examples of consistent messages and themes heard by Efficiency Manitoba such as the importance of the diversity of energy efficiency offerings; ability for customers to quickly and easily access program information; and streamlined customer participation. These themes along with the considerations outlined in (c) above resulted in both strategic decisions and program ideas. Strategic decisions are outlined with Section A2.1 and include customer market segmentation, scope of customer relationship management & demand side-management system and the program bundling approach. Program ideas were developed using existing Manitoba Hydro energy efficiency program staff. Design teams based on program bundle were formed and these teams generated ideas by working through the high level program screening outlined in (a) above and the development of the program models required complete the preliminary electric and natural gas portfolio. Two examples of the high level screening documentation are provided as attachments to PUB/EM I-1.

f) A DSM Market Potential Study was not produced as part of Efficiency Manitoba's exercise to review potential opportunities.

i. As discussed in the response to DAY/EM I-78, Efficiency Manitoba has budgeted to have a revised potential study completed in order to inform opportunities to be considered in the next 3-year efficiency plan.
DAY/EM I-77 provides an illustration of the programming considerations and sources of information utilized within the residential customer sector. Examples of the other market sources identified from DAY/EM I-77 include: energy use surveys, past program participation, and consultations with industry, information on programs from other jurisdictions from ESource (https://www.esource.com/, a service provider specializing in DSM/utility market research) and information available online from utilities/DSM agencies. Providing the supporting documents for each technology would require an extensive amount of time to gather and coordinate as it is not kept in a centralized repository nor is it available in a consistent format (i.e. background documentation is different for each technology).

ii. A potential study was not completed.

iii. Providing the supporting documents for each technology would require an extensive amount of time to gather and coordinate as it is not kept in a centralized repository nor is it available in a consistent format (i.e. background documentation is different for each technology). Please see response to f) i) above as well as attachments to PUB/EM I-2a.

g) Depending on the results of the high level screen completed and described in PUB-EM I-1, there are a variety of non-quantitative reasons for initiatives to have been rejected including the technology's energy savings claims are not yet proven, unavailability of local supply of the technology, or appropriateness for use in Manitoba's climate. As such, the measure specific data requested is not uniformly available. Two examples of the high-level screening documentation are provided as attachments to PUB-EM I-1.

Further information request/clarification:

COALITION/EM I-10(g) requested a listing of all new technologies/measures/programs considered for inclusion in the plan, as well as their metrics. In response, Efficiency Manitoba referred back to PUB/EM I-1, which does not address the issue except to imply that all potential measures identified were included in the Plan, apart from those discussed. While the Plan

includes a number of new measures (see PUB/EM I-4), no details are provided regarding metrics. This response is important for the examination of the appropriateness of the methods to select or reject demand-side initiatives.

Additional response from Efficiency Manitoba (December 5, 2019):

Please see table below for all measures considered during the development of the Plan but which were ultimately not included. Note that Efficiency Manitoba focused its efforts on measures included in the Plan and, as such, did not endeavor to document specific metrics on measures considered but not included in the Plan. See also response to PUB/EM I-4 for details on the high-level screening that was used to exclude measures from further consideration.

Energy Efficiency Technologies Rejected During Pre-Screening Process

Technology	Market
Conductive cow cooling pads for dairy industry	Agricultural
Electronically Commutated Motors (ECM) for barns	Agricultural
Energy storage batteries for homes/buildings that have on-site generation (eg. PV panels).	All
Showerheads with on/off switch	Commercial
Hand dryers	Commercial
Electronic Expansion Valves	Commercial
Net Zero buildings	Commercial
Heavily insulated shipping & receiving doors (rolling doors)	Commercial, Industrial, Agricultural
Heavily insulated single & double exterior pedestrian doors (opaque doors)	Commercial, Industrial, Agricultural
Air curtains or air barriers	Commercial, Industrial, Agricultural
Organic light emitting diode (OLED) lighting	Commercial, Industrial, Agricultural
Aerosol air sealing	Commercial, Industrial, Agricultural
Speed doors	Commercial, Industrial, Agricultural

Technology	Market
Smart windows / glass - dynamic glazing (thermochromatic / electrochromatic laminated glazing)	Commercial, Industrial, Agricultural
Solar shading devices	Commercial, Industrial, Agricultural
Horticulture Lighting	Commercial, Industrial, Agricultural
Condensing Rooftop Units	Commercial, Industrial, Agricultural
Ice Machines	Commercial, Industrial, Agricultural
Water saver for commercial buildings	Commercial, Industrial, Agricultural
ECM motors in HVAC equipment	Commercial, Industrial, Agricultural
Economizers	Commercial, Industrial, Agricultural
Stratification countering ceiling fans	Commercial, Industrial, Agricultural
Personal Environmental Control Systems	Commercial, Industrial, Agricultural
Variable Refrigerant Flow systems	Commercial, Industrial, Agricultural
Solar Thermal Walls	Commercial, Industrial, Agricultural
Maintenance Promotion Technology	Commercial, Industrial, Agricultural
Advanced Rooftop Packaged AC-heating upgrades	Commercial, Industrial, Agricultural
Biomass District Heating	All
Outdoor reset controls	All
Pulse-Wave-Modulating Thermostats	All
Outdoor wood boilers	First Nations
Wood Stoves	First Nations
Kit Homes	First Nations
Small Scale Wind	All

Technology	Market
Condensing Economizer	Industrial
Roving Energy Managers	Industrial
Support for ISO50001	Industrial
Residential Energy Star Water Heaters	Residential
Home Automation	Residential
Residential Behavioral	Residential
Furnace Filters	Residential
Solar pool heaters	Residential
Window air conditioners	Residential
Dehumidifiers	Residential
Wood pellet heating- purchased	Residential
Tube lighting	Residential
Water heater blankets	Residential
Ceiling fans	Residential
Bathroom exhaust fans	Residential
Passive Plumbing Stack Vent de-icer	Residential
ECM motors (variable speed)	All
Ductless/Ventless dryers	All
Energy Disclosure (Labeling)	All
Block Heater controller	Residential

h) Efficiency Manitoba has considered a reasonable list of available opportunities for new technologies / measures. Efficiency Manitoba recognizes that depending on the specific interpretation of "comprehensive" the list of new measures considered may or may not be considered as such. Efficiency Manitoba looks forward to having additional new measures identified through activities such as staff research, collaboration with industry partners and other program administrators and engagement with stakeholders such as through the Public Utilities Board review process and with the Energy Efficiency Advisory Group. Potential future enhancements will be evaluated according to the considerations outlined in PUB/EM I-1.

i) Please see the response to PUB/EM I-1.

REFERENCE:

19 and 21-22 (PDF 64 and 66-67)
4 (PDF 408)

PREAMBLE TO IR (IF ANY):

Based on Section 2 of the Act - "demand-side management initiative" means a measure or action taken, or a program, service or rate designed to reduce the consumption of electrical energy or natural gas, including a resulting reduction in the demand for electrical power, in Manitoba, but does not include
(a) a measure, action, program, service or rate that encourages or results in a switch from the use of one kind of fuel source to another if the switch increases greenhouse gas emissions in Manitoba; or
(b) a prescribed measure, action, program, service or rate.

Based on Section 1 of the Regulation - "fossil fuel" means a hydrocarbon derived from living matter of a previous geologic time.
Based on Section 4 of the Regulation - A switch from one type of fossil fuel to a different type of fossil fuel used for the same purpose is excluded from the definition "demand-side management initiative" in Section 2 of the Act.
Section 2 (pages 21-22) of the Application state:
“With respect to fuel switching, the following are aligned with both the Act and accompanying Regulation and are therefore included in the Plan:
• conversion of a heating source from natural gas to electric as this would lead to a decrease in GHG emissions;
• conversion of a heating source from natural gas or electric to a biomass source as there would be either a decrease in GHG emissions (natural gas) or a negligible change in GHG emissions (electric); and
• conversion of an electric supply from grid electricity to another renewable energy source of distributed generation such as solar, bioenergy, or waste products as there would be a negligible change in GHG emissions.”

Section 2 (page 22) of the Application states:

"With respect to fuel switching, the following are not aligned with both the Act and 344 accompanying Regulation and therefore, not included in the Plan:

• conversion of a fuel oil heating system to natural gas or propane as this would result in a conversion from one fossil fuel to another;

• conversion of an electric heating system to natural gas as there would be a resulting increase in GHG emissions; and

• conversion of an electric supply from grid electricity to a distributed fossil-fuel based energy generation, such as a natural gas fired combined heat and power system, as there would be a resulting increase in GHG emissions."

Overall, the focus of this question is on the individual measures/technologies/programs (as opposed to program bundles) that Efficiency Manitoba determined not to be aligned with the Act and the accompanying Regulation.

QUESTION:

a) Are there currently any measures, actions, programs, services or rates that have been "prescribed" as not being included in the definition of DSM? If yes, what are they?
b) For purposes of the Application and its proposed DSM programs what does Efficiency Manitoba consider to be "a biomass source"?
c) What are the GHG emissions associated with these biomass sources?
d) What does Efficiency Manitoba consider to be a "negligible change" in GHG emissions?
e) Why are actions that lead to any increase (even negligible) in GHG emissions considered to be aligned with the Act?
f) For purposes of the Application and its proposed DSM programs please confirm that Efficiency Manitoba defines bioenergy as wood pellets and wood chips (per Section A8, page 4)?
g) For purposes of the Application and its proposed DSM programs what does Efficiency Manitoba consider to be waste products (per Section 2, pages 21-22)?
h) What are the GHG emissions associated with bioenergy and waste sources?
i) Why are bioenergy and waste sources considered to be aligned with the Act and accompanying Regulations?
j) The Application discusses (Section 2, pages 21-22) what alternatives to grid electric supply are considered to be and not to be aligned with the Act and the accompanying

Regulation. Please address the same issue but with respect to alternatives for electricity supply in non-grid connected communities (i.e., remote diesel communities).

k) For purposes of identifying potential measures for inclusion in the proposed portfolio were electric load management or demand response programs (i.e., programs that shift load from peak to off-peak or reduce peak load) considered to be aligned with the Act and accompanying Regulation? If not, why not?

RATIONALE FOR QUESTION:

To better understand what DSM opportunities are considered/not considered to be aligned with the Act and the accompanying Regulation.

RESPONSE:

a) There are no measures, actions, programs, services or rates that have been "prescribed" as not being included in the definition of DSM.

b) For the purposes of the Application, the sources of biomass are considered as being either forestry or agriculturally derived.

c) With regards to GHG emissions, biomass derived fuel is part of the contemporary natural carbon cycle and therefore does not produce emissions that would not already be occurring naturally, while fossil fuel combustion brings new carbon into the atmosphere.

d) Efficiency Manitoba considers the GHG emissions from combusting biomass or another waste fuel source to be negligible, as compared with a fossil fuel. See also COALITION/EM I-11c above.

e) Measures that increase GHG are not eligible or aligned with the Act, as per the definition above for Section 2 of the Act item (a) "demand-side management initiative". See also COALITION/EM I-11c above.

f) For the purposes of the Application, the source of biomass is considered as either forestry or agriculturally derived. Wood pellets and wood chips are derived from forestry and so qualify as biomass and defined as bioenergy.

g) Waste products are considered products that would otherwise be wasted or require destruction or long term perpetual storage (landfilling). Some examples of waste products are forestry waste, lumber offcuts, landfill gas, flare gas, and wastewater digester gas.

h) Actions that lead to the reduction in consumption of electricity and natural gas are in alignment with the Act. GHG reductions are measured in the context of natural gas reductions in the Plan. The conversion from natural gas to biomass in the Plan is shown in Table A8.2 and identifies a 300 tonnes of CO2e reduction per year in Years 2 and 3 of the three-year plan. Waste fuels were not assessed in terms of natural gas reduction as none of the target projects consume natural gas.

i) Actions that lead to the reduction in consumption of electricity and natural gas are in alignment with the Act. Utilizing bioenergy for space heating will result in the reduction in consumption of electricity or natural gas.

j) See response to MKO/EM I-6a.

k) Electric load shifting or demand response programs were not considered to be part of the Plan, as the Regulation explicitly focuses on energy savings, and load shifting alone would not necessarily provide energy savings as required by the Act. Section 5 of the Regulation does allow for Efficiency Manitoba to undertake initiatives to reduce the demand for electrical power at the request, and expense, of Manitoba Hydro.

REFERENCE:

Page 13 (PDF 216)

PREAMBLE TO IR (IF ANY):

Based on Section 2 of the Act - "demand-side management initiative" means a measure or action taken, or a program, service or rate designed to reduce the consumption of electrical energy or natural gas, including a resulting reduction in the demand for electrical power, in Manitoba, but does not include
(a) a measure, action, program, service or rate that encourages or results in a switch from the use of one kind of fuel source to another if the switch increases greenhouse gas emissions in Manitoba; or
(b) a prescribed measure, action, program, service or rate.

Based on Section 9 of the Regulation, Efficiency Manitoba must prepare an efficiency plan that includes the following information:
"(f) an analysis of the amount and cost-effectiveness of the net savings to be achieved by
(i) each of the initiatives proposed under clauses (a) to (d), and
(ii) the plan as a whole;"

Section A2 (page 13) of the Application states:
"The ideas generated throughout the innovation stage were populated into program models. … Program, measure, and/or technology specific cost-benefit analyses were completed and then amalgamated to produce bundled savings, costs, and cost-effectiveness analyses, by customer segment, and at the overall portfolio level."
Section A2 (pages 28-31) discuss the cost-effectiveness tests used by Efficiency Manitoba. Overall, the focus of this question is on the cost-benefit analyses that were performed on the individual measures/technologies/programs that it would subsequently considered by Efficiency Manitoba for inclusion in what it has termed program bundles.

QUESTION:

a) Please explain the difference (if any) between the "cost-benefit analysis" referred to on page 13 and the "cost-effectiveness tests" discussed on pages 28-31.

b) Was a cost-benefit analysis performed for each program, measure and/or technology opportunity considered for inclusion in Efficiency Manitoba's proposed portfolio.

   I. If not, please reconcile with the referenced statement from Section A2, page 13.

c) Please provide the results of the cost-benefit analysis performed for each program, measure and/or technology opportunity considered for inclusion in the portfolio. In each case please provide the supporting details in terms of the PV of the various components of the analysis (e.g., the marginal benefits, the program costs and the incentives).

d) It is noted that the PACT includes the present value of program costs and incentives. If the cost-benefit analyses performed included the PACT (per pages 28-31), did the PACT performed for each program, measures and/or technology performed assume different levels of program costs and incentives accompanied by different levels of assumed adoption/savings?

   I. If not, what level of program costs/incentives was assumed for each program, measure and/or technology assessed and what was the basis for the level assumed?

   II. If yes, please describe the approach used to establish the different levels of program costs/incentives used in the analyses and ensure that the response to part (c) includes each of the program cost/incentive levels assumed.

e) Was there any cost-benefit analysis performed for each program/measure/technology from the participating customer's perspective?

   I. If not, why not?

   II. If yes, please describe what the analysis considered and whether it included the incremental costs the participating customer would incur (net of incentives) in order to adopt the program/measure/technology. If no consideration was given to the incremental cost the participating customer would incur, please explain why.

   III. If yes, please provide the results as part of the response to part (c) showing the PV results for each component of the analysis (e.g., bill reduction and measure/technology costs).

RATIONALE FOR QUESTION:

To understand the basis for determining those programs/measures/technologies that would be considered for inclusion in the Efficiency Plan.

RESPONSE:

a) The "cost-benefit analysis" referred to within the 2020/23 Efficiency Plan ("Plan"), Section A2.2, p. 216 of 591 is specifically pointing to the program, measure or technology level costs and benefits that were determined. The "cost-effectiveness tests" referred to within the Plan, Section A2.3.1, p. 231 of 591 is discussing the program administrator cost test ("PACT") that was completed at the program bundle and portfolio level. Therefore, the cost-benefit analysis at the program, measure or technology level is used as an input into the PACT.

b) The cost-benefit analysis performed for each program, measure and/or technology and used as an input in order to calculate the program bundle and portfolio level PACT results is provided within the Plan (Attachment 3, p. 511 and p. p.516 of 591).

c) Refusal. This question is out of scope based on the *Efficiency Manitoba Regulation*. Analysis should be limited to the portfolio level only. The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time available. Efficiency Manitoba has provided the corresponding electronic workpapers to Daymark based on the Non-Disclosure Agreement executed between Efficiency Manitoba and Daymark.

Further information request/clarification:

COALITION/EM I-12(c) requested the results of the cost-benefit analysis performed for each program, measure and/or technology opportunity considered for inclusion in the portfolio. Efficiency Manitoba refused to answer, stating that the question is out of scope as the analysis should be limited to the portfolio level only. This response is inadequate as section 9 of the *Efficiency Manitoba Act* states that the Plan must include an analysis of the amount and cost-effectiveness of the net savings to be achieved by <u>each of the initiatives</u>, as well as the plan as a whole. This response is critical to meeting legislative requirements and to the examination of

the cost-effectiveness of electric and natural gas demand-side management bundles and programs

Additional response from Efficiency Manitoba (December 5, 2019):

Efficiency Manitoba continues to question the scope of this Information Request. Coalition's question requests the results of the cost-benefit analysis performed for each program, measure and/or technology opportunity considered for inclusion in the portfolio. This request goes beyond the requirements for the efficiency plan under the Efficiency Manitoba Act. Efficiency Manitoba understands its obligations pursuant to the Act as limited to initiatives a) through d) which can be summarized as: a) the DSM Initiatives b) Educational Initiatives/support for innovation c) additional initiatives above target; and d) initiatives to address shortfall.

In terms of cost-effectiveness of the initiatives proposed in the plan, this analysis is to take place at the portfolio level only and is detailed in the Plan and as contemplated in the regulation. Efficiency Manitoba has also provided the cost-effectiveness at each program bundle level. Please note that the Independent Expert Consultant has been provided with all electronic working papers containing Commercially Sensitive Information including at the measure level based on the Non-Disclosure Agreement executed between Efficiency Manitoba and Daymark.

Please see revised response to COALITION/EM I-10b for responses to information requests that have resulted in the provision of various measure level details.

d) Please see response to (a) and (b) above. Specifically, the cost-benefit analysis results at the program, measure and technology level were used as inputs to determine the PACT at the program bundle and portfolio level. To illustrate please consider the following example:

> Air-cooled chillers are a single cooling technology offered within the HVAC & Controls offer bundle within the Commercial, Industrial and Agricultural customer segment. A measure level analysis was completed for this technology that included analysis of program costs, incentives and savings. The cost-benefit

analysis results of this measure include annual benefits and costs associated with this specific technology. These air-cooled chiller measure results were then used as inputs and combined will all other technologies included within the HVAC & Controls Offer and listed in Table A7.1 (Plan, Appendix A7, p. 362 of 591). The PACT results for the HVAC & Controls offer program bundle (including the cost-benefit analysis results for air-cooled chillers and other technologies / measures within this bundle) are provided in Table A7.8 and Table A7.9 (Plan, Appendix A7, p. 383 of 591).

I. Efficiency Manitoba provided the corresponding measure and/or technology level electronic workpapers to Daymark based on the Non-Disclosure Agreement executed between Efficiency Manitoba and Daymark. Providing the supporting documents for each technology would require an extensive amount of time to gather and coordinate as it is not kept in a centralized repository nor is it available in a consistent format (i.e. background documentation is different for each technology). Two examples of the high level screening documentation are provided as attachments to PUB-EM I-1.

II. Not applicable.

Further information request/clarification:

COALITION/EM I-12(d) asked whether the cost-benefit analysis was performed assuming different levels of incentives. The response is not responsive as it does not address whether <u>different levels of incentives were assessed</u>. This question is critical to determining the "range" of options considered by Efficiency Manitoba in the development of its Plan, which is necessary for the assessment of the appropriateness of the methodology to select or reject demand-side management initiatives.

Additional response from Efficiency Manitoba (December 5, 2019):

Different levels of incentives and corresponding resulting levels of participation was not a scenario analysis that was performed for the plan although some programs made adjustments for budgetary or cost-effectiveness reasons (see response to PUB/EM I-4). Incentives selected for each program can be found in response to DAYMARK/EM I-13d.

The basis for the selection of incentives levels was determined by factors such as historic program offerings, comparable programs in other jurisdictions, predicted market conditions including but not limited to the cost of the energy efficient alternative. Programs/measures were not selected or rejected based on a scenario analysis involving differing levels of incentives.

A step by step description at a high-level has been provided in the revised response to COALITION/EM I-14i to demonstrate the methods used to select or reject measures.

e) PUB/EM I-11(a) provides additional electric and natural gas portfolio cost effectiveness results tables for each program bundle within the Plan. Included within these tables are the cost effectiveness results for the participating customer cost test (PC) and simple customer payback.
As outlined in (d) the cost-benefit analysis performed for each measure/technology provided the necessary inputs required to determine the program bundle and portfolio level cost-effectiveness tests. Efficiency Manitoba did not consider other cost-effectiveness test results other than the PACT when evaluating the electric or natural gas portfolio.

I. 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.

II. Not applicable.

III. Not applicable.

REFERENCE:

7-8, 13, 27 & 34
(PDF 210-211, 216, 230 & 237)

PREAMBLE TO IR (IF ANY):

Section A2 of the Application states (pages 7-8):
"In addition, a new "bundled approach" to programming is being introduced. Energy efficiency initiatives in the province previously operated largely as individual programs, most of which were run in a mutually exclusive manner. Efficiency Manitoba has bundled programs that share similar features or comparable delivery models together."

Section A2 of the Application states (page 13):
"The ideas generated throughout the innovation stage were populated into program models. These models include the program bundle description as well as the program cost-benefit analysis (as outlined below). Program, measure, and/or technology specific cost-benefit analyses were completed and then amalgamated to produce bundled savings, costs, and cost-effectiveness analyses, by customer segment, and at the overall portfolio level".

Section A2 of the Application states (page 27):
"Efficiency Manitoba analyzed the portfolio, program bundles, and customer segments to quantitatively demonstrate the merits of the Plan. Developing a transparent budget while ensuring stakeholders benefit from the Plan required a detailed and systematic quantitative analysis of costs and benefits associated with proposed programs, offers, and initiatives; this is included within this Section. The quantitative analysis completed included program costs, savings per year, and cost-effectiveness tests. For each of these analyses, multiple perspectives were reviewed through evaluation layers including overall portfolio, customer segment, and program bundle."

Section A2 of the Application states (page 34):
"Figure A2.2 illustrates the multi-criteria decision framework that allowed Efficiency Manitoba to make program-specific adjustments and selections required to develop the proposed electric and natural gas portfolios. From the quantitative analysis perspective, program costs, savings,

and cost-effectiveness were primarily relied upon at program bundle, customer segment, and overall portfolio evaluation levels. Cost analysis provided annual electric and natural gas budgets for programs by customer segment, enabling strategies, and corporate overhead. This allowed Efficiency Manitoba to compare customer segments year over year and compare individual bundles within and across customer segments."

Having identified (through the innovation stage) the individual programs/measures/technologies, the focus of these questions is on the role of "program bundles" in developing the proposed electricity and natural gas portfolios.

QUESTION:

a) Please clarify whether the electricity and natural gas portfolios were developed by:
   I. Determining the specific programs/measures/technologies that would be included in each portfolio and then, for purposes of delivery, organizing them into "program bundles", or
   II. Using the specific programs/measure/technologies to develop various candidate program bundles and then assessing which candidate program bundles would be included in each portfolio.

b) If the second of the two approaches outlined in part (a) was used (i.e., candidate program bundles were developed) then please fully describe how Efficiency Manitoba determined which specific programs, measures and technologies should be included in a single "program bundle".

c) If the second of the two approaches outlined in part (a) was used (i.e., candidate program bundles were developed) then please provide a schedule that, for each customer segment, sets out all of the individual candidate program bundles that Efficiency Manitoba considered and assessed for purposes of determining its proposed electricity and natural gas portfolios. For each program bundle please indicate:
   I. The specific programs, measures and/or technologies included
   II. The targeted end-uses
   III. The expected savings per participant
   IV. The percentage of the customer segment's use of the electricity/natural gas accounted for by the targeted end-use(s)
   V. Any interactive impacts on other energy requirements
   VI. The total incremental capital and operating costs for the bundle per participant

VII. The environmental impacts (positive and negative) associated with the bundle per participant

VIII. The fraction of the labour and materials that will be provided from within Manitoba – exclusive of program costs.

d) It is noted that the PACT includes the present value of program costs and incentives. If the second of the two approaches outlined in part (a) was used (i.e., candidate program bundles were developed) then did the range of program bundles considered include bundles with the same programs/measures and technologies but different levels of program advertising and incentives (with different associated levels of participation and savings)?

I. If no, how was the level of program costs (in terms of incentive and advertising) associated with each program bundle determined?

II. If yes, how were the different levels of program costs determined?

III. If yes, please ensure the response to part (b) treats each case as a separate "program bundle".

e) If the second of the two approaches outlined in part (a) was used (i.e., candidate program bundles were developed) then were there programs, measures and/or technologies that were identified during the innovative stage and determined to be aligned with the Act and accompanying Regulation but were not included in any of the program bundles considered as candidates for the proposed portfolios?

I. If yes, what were they and why were they excluded?

RATIONALE FOR QUESTION:

To understand the role of program bundles and how the program bundles considered for inclusion in the proposed portfolios were developed.

RESPONSE:

a) Electricity and natural gas portfolios were developed in a manner most closely described by (I). Given the mandated energy savings targets, Efficiency Manitoba approached program design by identifying new measures that could contribute savings and considering how to get more savings from measures already part of Manitoba Hydro's DSM portfolio. These measures were then grouped to create improved accessibility

from a customer's perspective ensuring that Efficiency Manitoba had opportunities for all customer types within all customer segments. The program bundle approach to energy savings groups offerings that share features and comparable delivery models, thus reducing paperwork, streamlining the process and providing targeted customer segments with the information they need to make decisions to improve energy efficiency. To illustrate, for customers wanting to pursue a home renovation project, Efficiency Manitoba could present multiple opportunities within the Home Renovations Offer that could be considered within scope of the customers' project including measures such as energy efficient lighting, windows, or insulation upgrades. For customer segments such as income qualified, Indigenous, and Small Business, Efficiency Manitoba assembles the opportunities for those customers into bundles based on customer type.

b) Not applicable as per response to COALITION/EM I-13a.

c) Not applicable as per response to COALITION/EM I-13a.

d) Not applicable as per response to COALITION/EM I-13a.

e) Not applicable as per response to COALITION/EM I-13a.

REFERENCE:

2, 26-28 and 34-35 (PDF 205, 229-231 and 237-238)
6-7 (PDF 110-111)

PREAMBLE TO IR (IF ANY):

Section A2 (page 27-28) of the Application states:
"Efficiency Manitoba analyzed the portfolio, program bundles, and customer segments to quantitatively demonstrate the merits of the Plan. Developing a transparent budget while ensuring stakeholders benefit from the Plan required a detailed and systematic quantitative analysis of costs and benefits associated with proposed programs, offers, and initiatives; this is included within this Section. The quantitative analysis completed included program costs, savings per year, and cost-effectiveness tests. For each of these analyses, multiple perspectives were reviewed through evaluation layers including overall portfolio, customer segment, and program bundle. These layers afforded the opportunity to maintain overall portfolio performance while acquiring insights with respect to individual customer segment or bundle contributions. Using this multi-criteria decision framework allowed Efficiency Manitoba to select or reject individual DSM initiatives or make program-specific adjustments in order to develop the proposed electric and natural gas portfolios."

Section A2 (page 34) states:
"Figure A2.2 illustrates the multi-criteria decision framework that allowed Efficiency Manitoba to make program-specific adjustments and selections required to develop the proposed electric and natural gas portfolios. From the quantitative analysis perspective, program costs, savings, and cost-effectiveness were primarily relied upon at program bundle, customer segment, and overall portfolio evaluation levels."

Section A2 (page 26) states:
"The Plan considers factors beyond the quantified electric and natural gas savings. The programs, offers, and initiatives included within the Plan will result in numerous non energy benefits that will positively impact Manitobans".

Section A2 (page 2) states:
"The Plan development process considered the following … designing a Plan that maximized value for money and benefits for Manitoban and the Manitoba economy".

Section 4 (pages 6-7) describe the benefits of the proposed portfolio to Manitobans through incentives and private sector services.

QUESTION:

a) Is the Quantitative Analysis described on pages 27-28 the same as the Multi-Criteria Decision Analysis described on pages 34-35?
    I. If not, what is the difference and what are the roles of each in developing the proposed portfolios?
b) It is noted that not all the factors described as being "considered" were quantifiable and therefore amenable to Quantitative Analysis. Similarly, not all of the factors described as being considered are referenced in the description of the Multi-Criteria Decision Analysis. What factors were used in determining the individual programs/measures/technologies and the resulting program bundles that were included in the proposed portfolios and what factors were assessed after the portfolios were established?
c) Were the non-energy program benefits described on pages 26-27 used in the determination of the proposed portfolios or determined after the fact?
    I. If used in the determination of the proposed portfolios why aren't these factors included in the Multi-Criteria Decision Analysis framework illustrated on page 35?
    II. If used in the determination of the proposed portfolios, please indicate how each non-energy benefit was evaluated (e.g., measured).
d) Were the benefits to Manitobans (per Section 4, pages 6-7) used in the determination of the proposed portfolios or determined after the fact?
    I. If used in the determination of the proposed portfolios why aren't these factors included in the Multi-Criteria Decision Analysis framework illustrated on page 35?

e) Were the GHG savings associated with each program/measure/technology and the resulting program bundles used in the determination of the proposed portfolios or determined after the fact?

f) How was the requirement for customer segment diversity factored into the determination of proposed portfolios?

   I. What did Efficiency Manitoba consider would be a satisfactory degree of customer segment diversity?

   II. Were candidate portfolios first established on the basis of other factors and then rebalanced to achieve a satisfactory degree of customer segment diversity? If so, what were the factors used to determine the initial candidate portfolios? If not, what was the approach used?

g) The illustration of the Multi-Criteria Decision Analysis (Section A2, page 35) suggests that the impact of the efficiency plan on rates and average customer bill amounts was one of the explicit factors in selecting the proposed program bundles and the overall portfolio. Please confirm if this was the case.

   I. If so, how was the impact on rates and average customer bill amounts explicitly taken into account in the determination of the proposed portfolios (e.g., were maximum allowable limits set for rate and bill impacts?).

   II. If so, were there specific programs/measure/technologies and associated program bundles that were excluded due to their impact on rates and average customer bill amounts?

h) How was the objective of – "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" factored into the determination of the proposed portfolios?

i) Overall, please provide a step by step description as to how, starting with the existing programs and the inventory of programs/measures and technologies identified through the innovative stage the proposed portfolios were developed. For each step please describe the options/alternatives that were considered and the specific factors used in their assessment. In describing the steps please indicate where in the process each of the issues noted in parts (d) through (i) were addressed.

j) Please indicate how the steps outlined in the response to part (j) ensured that all of the programs/measures/technologies identified during the innovation stage as well as those measures/technologies in existing programs were given equal consideration.

RATIONALE FOR QUESTION:

To better understand the portfolio development process and the consideration of multiple decision criteria.

RESPONSE:

a) The quantitative analysis described in Section A2.3 of the 2020/23 Efficiency Plan ("Plan") beginning on p. 230 of 591 includes the following subsections:
   I. Section A2.3.1 – Cost Effectiveness Tests (Plan, p. 231 of 591)
   II. Section A2.3.2 – Rate & Customer Bill Impact Modeling (Plan, p. 234 of 591)
   III. Section A2.3.3 - Program Diversity Evaluation (Plan, p. 236 of 591)
   IV. Section A2.3.4 – Multi-Criteria Portfolio Decision (Plan, p. 237 of 591)

   The quantitative analysis is therefore different than the multi-criteria portfolio analysis.

   I. The quantitative analysis referred to in the introduction of Section A2.3 speaks more generally to the cost and benefit analyses that were completed and reflected within the cost effectiveness tests as well as the lifecycle rate impact analysis. The multi-criteria portfolio analysis leveraged the results from the quantitative analysis (specifically the savings, costs and PACT results) and further evaluated these results through program bundle, customer segment and overall portfolio lenses.

b) PUB/EM I-4 provides a description of the 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. PUB/EM I-4 also identifies additional changes between the preliminary portfolio and the portfolio included within the Plan resulting from methodology changes and general quality control corrections. Resulting changes are listed by program bundle.

Further information request/clarification:

COALITION/EM I-14(b), (e) and (f)(ii) requested information regarding the factors that were used in determining the individual programs/measures/technologies and the resulting program bundles that were included in the proposed portfolios, versus the factors that were assessed after the portfolios were established. Efficiency Manitoba's responses are not responsive to the questions posed, as they fail to answer the crux of the issue, which is to establish which factors were used to determine the measures to be included in the Plan and which factors were calculated after the Plan was developed. This response is critical to understanding the methodology employed to select or reject demand-side initiatives and its appropriateness.

Additional response from Efficiency Manitoba (December 5, 2019):

As per the submission pages 230-231 a quantitative analysis was used to create program bundles. This analysis included determination of the technical data as provided for the electric and natural gas portfolios included in Attachment 3 of the Plan (p. 507 to 518 of 591). Specifically, the quantitative analysis determined program bundle annual incremental energy savings resulting from new participation; annual incremental program costs; and the results of the program administrator cost-effectiveness tests (PACT) including the PACT Ratio, PACT net present value and levelized cost. All other factors and non-energy benefits were calculated after the portfolio was developed as per response to COALITION/EM I-14 c, d and e.

A high level step by step description of the process Efficiency Manitoba used to design the proposed portfolio of programs, including the methods used to select or reject measures, has been provided in the revised response to COALITION/EM I-14i.

With respect to COALITION/EM I-14 (e), as per the mandate for efficiency Manitoba and per the response to DAYMARK/EM I-80, Efficiency Manitoba does not have a GHG mandate. GHG savings were assessed after the portfolio was developed.

With respect to COALITION/EM I-14 (f)(ii), Efficiency Manitoba was able to leverage an existing portfolio of energy efficiency programs that was already balanced with respect to customer segment diversity. The enhancements and new program offers were added

across all customers segments and therefore there was no requirement for a re-balancing effort.

c) Non-energy program benefits were determined after the fact as a factor to be considered during the Public Utilities Board review and were not specifically quantified.
   I. Not applicable as per response to COALITION/EM I-14c
   II. Not applicable as per response to COALITION/EM I-14c

d) The benefits to Manitobans were determined after the fact as a factor to be considered in the Public Utilities Board review.
   I. Not applicable as per response to COALITION/EM I-14c

e) As shown, in Figure A2.2 (Plan, Section A2.3.4, p. 238 of 591) the resulting GHG savings associated with the program bundles were determined as the natural gas bundles were established.

f) As shown in Figure A2.1 (Plan, Section A2, p. 205 of 591), engagement formed part of the portfolio design process. As stated in Section A2.4 (p. 239 of 591), engagement with key stakeholders representing diverse customer segments was completed to ensure the Plan considers the interests of, and provides value to, Manitobans. Section 3.3 (beginning on 89 of 591) describes the methods of engagement undertaken by Efficiency Manitoba including the formation of the Energy Efficiency Advisory Group (p. 94 of 591) and further provides a summary of the key outcomes of the engagement activities associated with the Plan (p. 92 – 94 of 591).

   I. Beyond what is prescribed in the Efficiency Manitoba Regulation Section 11 (b) and 11(c), Efficiency Manitoba would prefer not to establish a satisfactory degree of customer segment diversity in a quantitative metric. As outlined in Section 3.3 (p. 89 of 591), Efficiency Manitoba views the engagement that was completed for the Plan a good start that will extend beyond the Plan development process and help support continuous improvement at Efficiency Manitoba. To that end, Efficiency Manitoba looks forward to receiving feedback through the Public Utilities Board process and future Energy Efficiency Advisory

Group meetings to receive feedback and perspectives on customer segment diversity within current and future Efficiency Manitoba offerings.

II. An example of engagement leading to portfolio changes is provided in Section 3.3 (Plan, p. 94 of 591, lines 321-326). As illustrated in PUB/EM I-4, the preliminary portfolio did not contain a Metis Income Qualified Program. Through ongoing engagement with the Manitoba Metis Federation through the Energy Efficiency Advisory Group, Efficiency Manitoba developed Metis targeted offerings included within the Plan.

g) Although the Lifecycle Rate Impact (LRI) and Customer Bill Impacts were part of the quantitative analysis and intended to be considered within the multi-criteria decision analysis these factors did not ultimately lead to any changes to the proposed program bundles or overall portfolio. As shown in Table 5.6 (Plan, Section 5.4.1, p. 139 of 591) for the electric portfolio and Table 5.7 (Plan, Section 5.4.2, p. 141 of 591) for the natural gas portfolio the rate impacts based on the LRI analysis were found to be minimal. Similarly, customer bill impacts for participating customers shown in Table 5.8 (Plan, Section 5.5.1, p. 142 of 591) for the electric portfolio and Table 5.9 (Plan, Section 5.5.2, p. 144 of 591) for the natural gas portfolio corresponded reasonably to the other cost and benefit factors considered within this analysis.

I. Not applicable as per response to COALITION/EM I-14g

II. Not applicable as per response to COALITION/EM I-14g

h) Please see Daymark/EM I-94 for specific factors considered for hard-to-reach customers along with offers developed to best target these customers. COALITION/EM I-14f discusses the engagement activities that were undertaken to consider customer segment diversity including hard-to-reach customers and how those factors influenced the Plan. The Plan satisfies Section 11(c) of the Efficiency Manitoba Regulation as discussed in Section 6.2 (p. 168 – 169 of 591).

i) PUB/EM I-1 provides details and considerations of the initial high level screenings of measures / technologies that was completed. PUB/EM I-4 provides a description of the 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. PUB/EM I-4 also identifies additional changes between the

preliminary portfolio and the portfolio included within the Plan resulting from methodology changes and general quality control corrections. Resulting changes are listed by program bundle. Producing a step by step description of the high level screening and portfolio development process inclusive of each option/alternative considered and specific factor used while indicate where each of the issue noted in parts (d) through (h) were addressed would require an extensive amount of time to gather and coordinate and as such Efficiency Manitoba has determined there is not adequate time to gather this information.

Further information request/clarification:

COALITION/EM I-14(is) requested a step by step description, starting with the existing programs and the inventory of programs/measures and technologies identified through the innovative stage, of how the proposed portfolios developed, including a description of options and alternatives considered, as well as the specific factors used in their assessment. In response, Efficiency Manitoba referred back to PUB/EM I-1 and I-4 but did not provide a step by step description of the process, stating this would require an extensive amount of time. This response is critical to understanding the options and alternatives considered by Efficiency Manitoba and the subsequent development of both the preliminary portfolios as well as the final proposed portfolios, which is directly relevant to the assessment of the methodology used to select or reject demand-side management initiatives.

Additional response from Efficiency Manitoba (December 5, 2019):

The following provides a generic step-by-step description of how the proposed portfolio was developed. Each individual technology within a customer segment is unique and may have required adaptation or changes to this generic process description. Compiling this information and describing technology specific steps across the entire portfolio could not be completed in a reasonable amount of time and the results from smaller refinements, such as adjusting an incentive level, were not tracked and do not exist.

Efficiency Manitoba developed the portfolio of electric and natural gas energy efficiency offers through completion of (i) a pre-screening process; (ii) development of a

preliminary portfolio; and (iii) analysis and refinement of the portfolio to develop the final portfolio of electric and natural gas program bundles included within the Plan.

(I) Pre-Screening Process

In addition to the examples provided in PUB/EM I-1, a larger list of measures / technologies identified during the development of the Plan has been provided in COALITION/EM I-10(g). Due to pre-screening factors identified in PUB/EM I-1, the listed measures / technologies failed to move forward to the preliminary portfolio and as such did not warrant any quantitative cost benefit analysis based on this initial high level qualitative screenings as described in COALITION/EM I-10b. These measures will continue to be monitored and reevaluated against the pre-screening criteria for potential inclusion in subsequent Plans.

The pre-screening process also identified initiatives that are currently offered by Manitoba Hydro and are not moving forward to Efficiency Manitoba. These are identified in DAYMARK/EM I-4 and include the Residential Pay-As-You-Save (PAYS) financing program, the Network Energy Manager program, Curtailable Rates and the LED Roadway Lighting Program.

(ii) Preliminary Portfolio Development

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. Steps completed in the preliminary design of the portfolio of programs typically include the following components for each energy efficiency technology:

- Background energy efficient technology research including review with engineers / technical specialists; contacting other utilities with similar offers; and reviewing research completed by organizations such as Natural Resources Canada / Office of Energy Efficiency, Energy Star, Resource, or the U.S. Department of Energy.
- Complete product and market channel research including identifying the following as applicable:
    - Energy efficient technology manufacturers / brands;

  - Distributors, dealers, wholesalers, or service companies of the energy efficient technology;
  - Design professionals, architects, or consulting engineers responsible for specifying the energy efficient technology; and
  - Customer and industry associations.
- Based on background and market channel research identify and/or quantify the following as applicable in order to inform program design parameters:
  - New versus used equipment in the replacement market for the non-energy efficient alternatives;
  - Breakdown between the competing manufacturers in the market;
  - Sales per year, life expectancy and costs for both energy efficient technology and non-energy efficient alternatives;
  - Purchasing process, decision criteria, or barriers for a customer to purchase and install the energy efficient technology;
  - Energy usage / savings of energy efficient technology, interactive effects, persistence, hours of operations and non-energy benefits; and
  - Possible rebate or incentive levels as well as promotional strategy required to encourage transition to the energy efficient technology. Note this last step is often the most iterated given it can be a large component of program costs and therefore have the greatest impact on cost-effectiveness.

PUB/EM I-4 provides the program bundle energy savings, costs and program administrator cost test results associated with the preliminary portfolio. During this stage, Efficiency Manitoba removed Solar Pool Heaters & Solar Hot Water from program consideration. Projected participation in these respective programs was less than ten customers per year due to factors such as the improved efficiency and declining price of solar PV panels reducing the solar domestic water heating market and the market trend of electric pool water heating through air source heat pumps which significantly increases the efficiency of pool heating compared to the previous electric heating options and limit the energy savings opportunity through a solar pool water heater. Please see PUB/EM I-1a for program administrator cost test (PACT) metrics for these specific measures. As these are the only rejected measures from the preliminary

portfolio, these are the only rejected technologies that have specific program administrator cost test results available.

(iii) Analysis and Refinement of 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. Additional changes between the preliminary portfolio and the portfolio included within the Plan are the result of methodology changes and general quality control corrections. Resulting changes by program bundle are summarized in PUB/EM I-4.

With respect to new technologies and measures included within the electric or natural gas portfolio, there are several information request responses which provide measure level details as follows:

- PUB/EM I-33b identifies all the measures and technologies included within the electric and/or natural gas portfolio by customer segment and program bundle. Status as a new or continuing offer or measure within Manitoba is also provided within the response.
- The Attachment to COALITION/EM I-91 provides measure level resolution with respect to the electric energy savings, electric incentive, natural gas energy savings and natural gas incentive for every measure included within the Portfolio.
- The Attachment to DAYMARK/EM I-13 provides measure level information on free ridership and free driver modeling inputs used to determine measure level energy savings.

j) Please see response to COALITION/EM I-14i.

REFERENCE:

2 (PDF 205)
6-7 (PDF 110-111)

PREAMBLE TO IR (IF ANY):

Section A2 (page 2) of the Application states:
"The Plan development process considered the following …. designing a Plan that maximizes value for money and benefits for Manitobans and the Manitoba economy."

QUESTION:

a) Please confirm Efficiency Manitoba measures the "benefits for Manitobans and the Manitoba economy" based on the percentage of Efficiency Manitoba's budget that is spent on incentives and private sector services (per Section 4, pages 6-7). If not confirmed, what is the measure used?
b) It appears that the measure used for ""benefits for Manitobans and the Manitoba economy" does not take into account whether the products being incented are actually manufactured in Manitoba or elsewhere. Doesn't the source of the products used to implement a DSM program/measure/technology affect "benefits for Manitobans and the Manitoba economy"?
c) Overall why does Efficiency Manitoba consider the measure it uses to assess the "benefits for Manitobans and the Manitoba economy" to be appropriate?

RATIONALE FOR QUESTION:

To better understand the determination of benefits to Manitobans and the Manitoba economy.

RESPONSE:

a) Efficiency Manitoba has budgeted its expenditures that include incentives that will be provided to Manitobans, as well as expenditures that will be made in the private sector.

While there is certainty that there will be a positive impact to Manitoba's economy as a result of Efficiency Manitoba, to measure the specificity and degree of that impact, an independent economic impact study would be required which has not been conducted to date. Please also refer to COALITION/EM I-15 b) below with specific reference to the final sentence "In the absence of an independent economic study, Efficiency Manitoba considers the percentage of Efficiency Manitoba's budget that is spent on incentives and private sector services to be a reasonable measure".

b) Most products that are being supported by Efficiency Manitoba are being installed by a local contractor or delivery partner despite the product being manufactured out of Province. Incentives are supporting the installed cost of energy efficient products. Some products will be installed by the customer and therefore yes, could be argued are not a benefit to the Manitoba economy relative to contractor installation. However, it could also be stated that the incentive or discount on the product received, and hence saved by the customer, is spent elsewhere in the Manitoba economy. In the absence of an independent economic study, Efficiency Manitoba considers the percentage of Efficiency Manitoba's budget that is spent on incentives and private sector services to be a reasonable proxy.

c) Please see response to COALITION/EM I-15b above.

For further information, please see DAYMARK/EM I-6.

REFERENCE:

2 (PDF 205)

PREAMBLE TO IR (IF ANY):

Section A2 (page 2) of the Application states:
"The Plan development process considered the following …. designing a Plan that maximizes value for money and benefits for Manitobans and the Manitoba economy."

QUESTION:

Please explain what Efficiency Manitoba means by the phrase "a Plan that maximizes value for money". In particular what is the "value" that is to be maximized?

RATIONALE FOR QUESTION:

To understand the reference to "value for money".

RESPONSE:

Efficiency Manitoba appreciates that every dollar spent via its budget is funded through Manitoba Hydro in accordance with The Efficiency Manitoba Act (Section 18 (2)). Further, Efficiency Manitoba recognizes that Manitoba Hydro recovers its costs through customer rates. Efficiency Manitoba is fully committed to achieve its mandated savings targets in a fiscally responsible manner.

In stating that Plan development considered maximizing value for money and benefits for Manitobans and the Manitoba economy, Efficiency Manitoba is communicating its commitment to deliver on a plan that sees dollars spent by the organization providing maximum benefits to the diverse needs of people and businesses with the province – residential, income-qualified, Indigenous, commercial, agricultural and industrial. Returning value to Manitobans through delivery of the Plan comes through incentives, customer bill savings, and a variety of non-energy benefits.

Efficiency Manitoba will deliver important annual bill savings of $18 million per year to participating customers, in addition achieving the mandated expectation of delaying the point at which capital investments in major new generation and transmission projects will be required by Manitoba Hydro to service the needs of Manitobans. Every $1 spent on energy efficiency will return over three times its value ($3.27) to Manitoba electric rate payers.

Beyond these benefits, through Efficiency Manitoba's work with commercial, agricultural and industrial customers to implement energy efficient opportunities, their costs will be reduced providing opportunities for increased competitiveness. When businesses are more competitive, they have opportunities to consider growing their businesses, expanding their operations, increasing their workforces and providing further contributions to the province.

Value also includes the non-energy supplemental benefits which Efficiency Manitoba will achieve through delivery of the plan. Efficiency Manitoba will contribute to the growth of the green economy through its collaboration with external installers, contractors, service providers and communities supporting the work of Efficiency Manitoba. Implementation of the plan will also reduce greenhouse gas emissions and provide social benefits including improved occupant comfort, increased property value, and reduced maintenance costs. Finally, value will be achieved in areas such as waste reduction through appliance recycling of refrigerators and freezers.

REFERENCE:

14-21 (PDF 261-268)

PREAMBLE TO IR (IF ANY):

It is noted that for both the Electric Portfolio and the Natural Gas Portfolio, there is a wide variation in the levelized cost of the individual program bundles within each customer segment.

QUESTION:

a) For each of the customer segments in the Electric and Natural Gas Portfolios, please indicate if there were specific programs/measures/technologies that are aligned with the Act (and accompanying Regulation) but were not included in the proposed portfolio even though substituting them for one of the planned programs/measures/technologies in the customer segment could have achieved the same level of overall savings but at a lower cost (i.e., the overall levelized cost for the customer segment).

b) If there are, please identify what they are, to which customer segment they would be applicable and explain (with reference to the various factors considered) why Efficiency Manitoba chose not to include them in the proposed portfolios.

c) For each of the customer segments in the Electric and Natural Gas Portfolios, please indicate if would it be possible for Efficiency Manitoba to achieve the same level overall savings at a lower overall levelized cost by adopting a more aggressive (e.g. increased advertising/incentive levels) approach for one of the program bundles with a low levelized cost in combination with a less aggressive approach for one of the program bundles with a higher levelized cost?

   I. If not, why not?

   II. If yes, please identity where such substitutions could be made.

   III. If yes, please explain (with reference to the various factors considered) why each such a substitution was not proposed.

d) For each of the program bundles that involve more than one measure/technology, please indicate if would it be possible for Efficiency Manitoba to achieve the same level overall savings at a lower overall levelized cost by adopting a more aggressive (e.g. increased advertising/incentive levels) approach for one measures/technologies with a

low levelized cost in combination with a less aggressive approach for one of the measures/technologies with a higher levelized cost?

I. If not, why not?
II. If yes, please identity where such substitutions could be made.
III. If yes, please explain (with reference to the various factors considered) why each such a substitution was not proposed.

RATIONALE FOR QUESTION:

To understand the role of "cost-effectiveness" in the development of the proposed program bundles and overall portfolios.

RESPONSE:

a) Please see response to PUB/EM I-1a for measures that were not included in the Plan. All of these measures would have resulted in a higher cost portfolio if they were substituted for measures that are currently included.

b) Please see response to COALITION/EM I-17a and PUB/EM I-1a.

c) Please see response to COALITION/EM I-19a.

d) See response to COALITION/EM I-19a.

REFERENCE:

4-12 (PDF 160-168)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) With respect to Tables 6.1 and 6.2, please break the 2017/18 energy consumption down as between Industrial, Agricultural and Commercial.
b) For each of the Industrial, Agricultural and Commercial segments, what portion of the segment's total energy use are the proposed program bundles applicable to?
c) With respect to Tables 6.1 and 6.2, how much of total Residential use was accounted for by Income Qualified and Indigenous residential customers?
d) With respect to Tables 6.1 and 6.2, are the programs offered to the Indigenous segment only applicable to Indigenous residential customers or also to Indigenous businesses customers?
e) For each of the Electric and Natural Gas Residential segments, what portion of the segment's total energy use are the proposed program bundles applicable to?

RATIONALE FOR QUESTION:

To understand the current energy usage of the Customer Segments is "addressed" by the proposed Plan.

RESPONSE:

a) Please see the table provided below. Please note that the Indigenous data referenced in Tables 6.1 and 6.2 of the 2020/23 Efficiency Plan (Section 6, p.164 & 167 of 591) is denoted in the below table as First Nations, as this data consists of only First Nation on-reserve consumption. Also note that the income qualified customers who may qualify for Income Qualified Offers, are included within the Residential customer segment consumption as it is not possible to extract actual energy consumption data for this

customer segment. As per the 2020/23 Efficiency Plan (Appendix A, Section A5, p. 315 of 591), it is estimated there are approximately 159,000 homes in Manitoba that fall below the LICO 125 threshold.

Customer Segment	Annual Electric Energy Consumed (GWh)	% of Total	# of Electric Customers	% of Total	Annual Natural Gas Consumed (million m^3)	% of Total	# of Natural Gas Customers	% of Total
Agricultural	811	4%	4,040	1%				
Commercial	6,122	27%	57,863	10%				
Industrial	7,502	33%	6,656	1%				
Residential	7,454	33%	494,237	85%				
First Nations	845	4%	20,451	4%				
Total	**22,734**	**100%**	**583,246**	**100%**		**100%**		**100%**

2b

b) The proposed program bundles presented in the 2020/23 Efficiency Plan are designed to address all consumption across the Industrial, Agricultural and Commercial customer segments, after adjustments to consumption are made to remove special contracts and natural gas generating stations (the above table excludes special contracts and natural gas generating station consumption).

c) Please see response to a).

d) Programs offered to the Indigenous segment are applicable where appropriate for both Indigenous home and business customers.

e) The proposed program bundles presented in the 2020/23 Efficiency Plan are designed to address all consumption across the electric and natural gas residential segments.

REFERENCE:

12-21 (PDF 259-268)

PREAMBLE TO IR (IF ANY):

It is noted that for both the Electric Portfolio and the Natural Gas Portfolio, there is a wide variation in the levelized cost of the individual program bundles across the customer segments.

QUESTION:

a) With respect to the Electric Portfolio, it is noted that the levelized costs of some of the program bundles in the Indigenous and Income Qualified Segments are less than the levelized cost for some of the program bundles proposed for the other segments. Would it be possible for Efficiency Manitoba to achieve the same level overall portfolio savings at a lower overall levelized cost by adopting a more aggressive (e.g. increased advertising/incentive levels) approach for one of the lower levelized cost program bundles in the Indigenous and Income Qualified Segments in combination with a less aggressive approach for one of the program bundles with a higher levelized cost in the one of the other segments?
   I. If not, why not?
   II. If yes, please identity where such substitutions could be made.
   III. If yes, please explain (with reference to the various factors considered) why each such a substitution was not proposed.

b) In general, for each of the Electric and Natural Gas Portfolios, are there customer segments where it be possible for Efficiency Manitoba to achieve the same level overall portfolio savings at a lower overall levelized cost by adopting a more aggressive (e.g. increased advertising/incentive levels) approach for one of the lower levelized cost program bundles in the segment in combination with a less aggressive approach for one of the program bundles with a higher levelized cost in one of the other segments?
   I. If not, why not?
   II. If yes, please identity where such substitutions could be made.
   III. If yes, please explain (with reference to the various factors considered) why each such a substitution was not proposed.

RATIONALE FOR QUESTION:

To understand the role of "cost-effectiveness" in the development of the proposed program bundles and overall portfolios.

RESPONSE:

a) The design of the Plan provides for an inclusive and diverse efficiency portfolio that considers all customer segments with a variety of energy efficient offers and programs within customer segments. The Plan achieves savings targets and is cost-effective with low rate impacts and meets requirements set in legislation, regulation and direction issued by Government. In the course of developing its Plan, Efficiency Manitoba did not undertake a sensitivity analysis changing detailed level components such as advertising frequency and incentive levels and re-modelling the overall Plan metrics. The types of scenarios requested are not readily available and cannot be completed in the timelines set out for the public review of the Plan.

   If during implementation of the Plan, more aggressive approaches are required for specific segments than originally planned and/or if actual take-up varies from Efficiency Manitoba's prudent projections, a counterbalance would need to occur in another area of the Plan in order for Efficiency Manitoba to remain within the overall budget approved for the Plan. This level of flexibility will be essential to successfully implementing a plan that needs to be responsive to customer and market changes and expectations that are likely to occur over the course of the Plan.

b) See response above to COALITION/EM I – 19a.

REFERENCE:

11 (PDF 167)
17-21 (PDF 264-268)

PREAMBLE TO IR (IF ANY):

It is noted that, with respect to the Natural Gas Portfolio, the program bundles proposed for the Income Qualified and Indigenous segments have the highest levelized cost. It is also noted that the budget for these two segments is 32% of the Natural Gas Portfolio's total budget.

QUESTION:

a) Would it be possible for Efficiency Manitoba to achieve the same level overall Natural Gas portfolio savings at a lower overall levelized cost by adopting a less aggressive (e.g. lower advertising/incentive levels) approach for one or more of the program bundles in the Income Qualified and Indigenous Segments in combination with a more aggressive approach for one of the program bundles with a lower levelized cost in one of the other segments, while still meeting the 5% budget criterion for such programs?
   I. If not, why not?
   II. If yes, please identity where such substitutions could be made.
   III. If yes, please explain (with reference to the various factors considered) why each such a substitution was not proposed.

RATIONALE FOR QUESTION:

To understand the proposed budget Natural Gas portfolio hard to reach segments.

RESPONSE:

The design of the Plan provides for an inclusive and diverse efficiency portfolio that considers all customer segments. The Plan achieves savings targets and is cost-effective with low rate impacts.

In the course of developing its Plan, Efficiency Manitoba did not undertake a sensitivity analysis changing detailed level components such as advertising frequency and incentive levels. Such scenarios are not readily available and cannot be completed in the timelines set out for the public review of this Plan.

REFERENCE:

16-17 (PDF 26-27)
10 (PDF 55)

PREAMBLE TO IR (IF ANY):

Section 1 (pages 16-17) states:
"Efficiency Manitoba's overall electric DSM portfolio is expected to result in customers having lower costs for meeting their electricity needs through this portfolio, on an aggregate basis, with a ratio of 3.27, a positive NPV of $345 million and a levelized cost of 2.24 cents/kWh".

Section 2 (page 10) states:
"The Act was proclaimed in January 2018 and established Efficiency Manitoba as a corporation with its mandate to:
…
• reduce consumption of electrical energy and natural gas beyond the savings targets if reductions can be achieved in a cost-effective manner;
• mitigate the impact of rate increases on Manitoba ratepayers through the delay of Manitoba Hydro's need for major capital investments in new generation and transmission projects"

QUESTION:

a) Does the positive PACT NPV for the electric DSM portfolio suggest that there are additional electric DSM opportunities that could be pursued which would be cost-effective and serve to further lower customers costs for meeting their electricity needs? If not, please explain why.
b) Is there anything in the Efficiency Manitoba Act or the accompanying Regulation that would prevent Efficiency Manitoba from proposing an electric DSM portfolio with additional measures/technologies and higher electricity savings assuming those additional measures/technologies were cost-effective? If yes, please provide the relevant references and explain the restrictions.
c) Did Efficiency Manitoba assess whether it was possible to achieve savings in excess of the prescribed electricity savings target through either i) additional cost effective

measures/technologies and/or ii) the achievement of incremental cost-effective savings from the program bundles in its proposed 2020-2023 efficiency plan?

I. If yes and the results were favourable, why weren't they included in the proposed electricity portfolio?

II. If not, why not given its mandate as set out in the Act to reduce consumption of electrical energy beyond the savings targets if reductions can be achieved in a cost-effective manner?

d) If the reductions can be achieved in a cost-effective manner would reducing the consumption of electrical energy beyond the savings targets serve to achieve the part of Efficiency Manitoba's statutory mandate that directs it to "mitigate the impact of rate increases on Manitoba ratepayers through the delay of Manitoba Hydro's need for major capital investments in new generation and transmission projects"? If not, why not?

RATIONALE FOR QUESTION:

To understand the scope of the alternatives considered for the Electric Portfolio.

RESPONSE:

a) The positive PACT NPV for the electric DSM portfolio does suggest that there are additional electric DSM opportunities that could be pursued which would be cost-effective. When determining the electric DSM portfolio, PACT was one of several considerations.

As shown in the program administrator cost ratio (PACT) calculation shown in Section A2.3.1 of the 2020/23 Efficiency Plan ("Plan") (Appendix A2, p. 232 of 591), the PACT considers the present value of the marginal benefits against the present value of the program costs and incentives. As the overall electric DSM portfolio has PACT benefits exceeding the costs, means that based on this metric the electric portfolio over the 30-year time horizon considered will lower costs for the electric utility as compared to not pursuing any DSM. As summarized in Table 5.3 (Plan, Section 5.2, p. 135 of 591), the overall electric portfolio PACT is 3.27. Simply stated this means that based on the PACT, every $1 spent realizes $3.27 in benefits for electric ratepayers. The PACT does not

consider utility lost revenue impacts which are considered within the Lifecycle Revenue Impact (LRI) analysis discussed in the Plan (Appendix A2, p. 234 of 591). The PACT does not consider participating customer bill savings discussed in Section 5.5 of the Plan (beginning on p. 141 of 591). Therefore, pursuing additional electric DSM opportunities that are cost-effective based on a positive PACT ration would also have to be examined from an overall LRI portfolio impact perspective.

Besides, a positive PACT ratio, PUB/EM I-1a provides an overview of additional qualitative reasons for DSM opportunities may be rejected from the electric DSM portfolio including: the technology's energy savings claims are not yet proven, unavailability of local supply of the technology, or appropriateness for use in Manitoba's climate.

b) As per the Efficiency Manitoba Regulation section 11 (d), any demand side management initiatives in excess of those required to achieve the savings targets are not restricted from becoming part of an efficiency Plan they would simply be subject to an initiative or measure level cost effectiveness screen.

c) As outlined in PUB/EM I-4 there were a number of changes to the natural gas and electric portfolio bundles that were driven by the results of the multi-criteria decision analysis considering both quantitative and qualitative perspectives. As shown within PUB/EM I-4 the preliminary portfolio considered consisted of electric energy savings in excess of the electric savings target.

   i. There are multiple considerations in addition to incremental electric programming cost-effectiveness that influenced Efficiency Manitoba's approach to achieve and not exceed the electric energy savings target.

      With respect to the preliminary portfolio considered in PUB/EM I-4, there were changes made to the commercial, industrial and agricultural lighting program to reduce electric energy savings achieved. The intent of this was to reduce electric portfolio costs and reduce the interactive impact on natural gas energy savings. The latter consideration is of importance. Although achieving savings in excess of the prescribed electricity savings target may be possible with incremental cost-

effective changes to the electric portfolio, the interactive effects may then reduce natural gas savings and result in additional or incremental natural gas programming which may not be cost-effective or which may increase overall natural gas programming costs or effect the natural gas LRI negatively.

Incremental cost-effectiveness electric programming was not the only consideration that influenced Efficiency Manitoba. As described in Section 3.3 of the 2020/23 Efficiency Plan ("Plan"), key outcomes of engagement completed during the Plan development process included: ensuring continuity of programs for customers; developing strategies and tools to streamline the application process; adopting new programs within the Plan; and adopting additional customer customization for program design, delivery, implementation and program supporting activities to successfully reach the targeted program participants within each customer segment. See Section 3.3 (Plan, p. 92 – 94 of 591) for further details of these outcomes. Therefore, besides cost-effectiveness considerations Efficiency Manitoba also considered the practicality of developing a new Crown Corporation, incorporate additional technology such as through the CRM/DSM System while also reaching Manitoba's diverse customer base with program enhancements. Based on the priority and desire to achieve balance of these additional important considerations, pursuing additional programming to exceed the mandated energy savings target was deferred to future efficiency plans.

II. Not applicable.

d) If neither the LRI impact on the electric portfolio nor interactive effects on the natural gas portfolio were considered, pursuing electrical energy savings from DSM initiatives that exceed the savings target and are cost-effective as measured by the prescribed cost-effectiveness test in The Efficiency Manitoba Regulation would achieve the quoted section of Efficiency Manitoba's statutory mandate.

REFERENCE:

28-29 (PDF 231-232)

PREAMBLE TO IR (IF ANY):

[Preamble to IR (if any)]

QUESTION:

a) Did Manitoba Hydro provide Efficiency Manitoba with any documentation supporting the 6% nominal weighted average cost of capital (Table A2.3)? If yes, please provide.
b) The Application states that "a 30-year time horizon was used for all net present value PACT calculations" (page 28). Does this mean that all proposed programs for the 2020/21 to 2021/23 period were evaluated over the same 30 year period (i.e., 2020/21 through 2029/30)?
c) For each Customer Segment/Program Bundle please provide the expected life for the measures/technologies being employed. In those instances where the Program Bundle includes more than one measure/technology please provide the expected life for each measure/technology and an "average life" based on the relative savings provided by each.

RATIONALE FOR QUESTION:

To understand the basis for the PACT calculations.

RESPONSE:

a) Discount rates were provided by Manitoba Hydro and accepted by Efficiency Manitoba. The discount rate is consistent with Manitoba Hydro's weighted average cost of capital at the time of preparation of the plan.

b) Yes, all proposed program activity for the 2020/21 to 2022/23 period was evaluated over the same 30 year present value period.

c) Details on expected measure life are not kept in a centralized repository and would require an extensive amount of time to gather. Efficiency Manitoba has provided the corresponding electronic workpapers to Daymark to enable a detailed level review of the Plan, including measure life and corresponding savings assumptions, based on the Non-Disclosure Agreement executed between Efficiency Manitoba and Daymark.

REFERENCE:

17 (PDF 92)
5 (PDF 161)
3-4 (PDF 128-129)

PREAMBLE TO IR (IF ANY):

Section 3 (page 17) states:
"The CRM/DSM system intends to streamline customer and contractor interactions while the program bundling approach will result in fewer customer applications for similar energy-efficient technologies".
However, Section A2 (page 5) states:
"A CRM/DSM system will improve customer experience, encouraging participation efficiencies and transparency. For example, a customer applying for programs directly through the CRM/DSM system would not require paper application forms and would be able to track the status of all active applications, and view past participation history. suggests that evaluation costs are included in the program costs for each program bundle."
Table 5.1 in Section 5 (page 4) indicates that the costs of Enabling Strategies (which according to Attachment 3 includes evaluation costs) are not included in the costs used for the PACT program bundle level calculations.

QUESTION:

The Section 3 and A2 references noted above both indicate that the CRM/DSM system will be used to facilitate program applications by customers and contractors. Please confirm that this is the case and, if confirmed, explain why costs associated with the CRM/DSM system are not included in the PACT program bundle level calculations.

RATIONALE FOR QUESTION:

To understand the costs included in the PACT

RESPONSE:

One, of the many functions of the CRM/DSM system, will be facilitating program applications by customers and contractors and therefore streamlining the application process and reducing overall costs of delivery. As this particular feature is only a portion of the overall benefit of the CRM/DSM system, costs associated with the CRM/DSM system are not included in the PACT program bundle level calculations.

At the program bundle level, PACT costs include program planning and design, delivery, marketing, implementation, incentives, administrative, and evaluation costs.

At the overall portfolio level, PACT costs include all costs at the program bundle level plus enabling strategies and corporate overhead costs.

The CRM/DSM system is considered an enabling strategy as it is needed to support overall operations at Efficiency Manitoba, with features including but not limited to:

- Manages all aspects of customer and contractor relationships, including but not limited to, tracking customer data, project status, and issues.
- Simplifies transfer of customer utility information from Manitoba Hydro to Efficiency Manitoba.
- Stores, tracks, and manages Demand Side Management data and workflows, and has the ability to:
    - Track customer participation, savings (including incorporating calculation methodologies), costs;
    - Offer online customer and vendor application forms;
    - Provide vendor specific portals for direct entry of program data by outside parties; and
    - Show dashboards and generate reporting.

REFERENCE:

3-4 (128-129)
10 (PDF 187)
29 (PDF 232)
Technical Tables re Annual Natural Gas and Electric Costs

PREAMBLE TO IR (IF ANY):

Section 5 (page 3) states:
"at the program bundle level, PACT costs include the program planning and design, delivery, marketing, implementation, incentives, administrative, and evaluation costs".

Section A2 (page 29) states suggests that evaluation costs are included in the program costs for each program bundle.
However, Table 5.1 in Section 5 (page 4) indicates that the costs of Enabling Strategies (which according to Attachment 3 includes evaluation costs) are not included in the costs used for the PACT program bundle level calculations.
Also, Attachment 3 indicates that the costs of Enabling Strategies (including evaluation costs) are not included in the program bundle costs.

Section 7 (page 10) sets out the total annual evaluation costs.

QUESTION:

a) In principle should the evaluation cost for a program bundle be included in the costs used for the PACT calculations at the program bundle level?
b) Is the cost of evaluation currently included in Efficiency Manitoba's PACT calculations at the program bundle level?
c) If the cost of evaluations is not currently included in the PACT and can be attributed to the different program bundles, please provide a schedule that includes the following for each program bundle for each year of the plan:
    I. The evaluation costs
    II. The revised total program bundle cost (including evaluation costs)

III. The updated values for the PACT ratio, the PACT net present value and the PACT levelized cost.

RATIONALE FOR QUESTION:

To clarify the cost to be included in the PACT.

RESPONSE:

a) In principle the evaluation cost for a program bundle would be included in the costs used for the PACT calculations at the program bundle level.

b) Evaluation costs are not included in the PACT costs at the program bundle level, they are only included at the portfolio level since these costs were only forecast at the portfolio level. This meets the requirements of the Efficiency Manitoba Act which requires cost-effectiveness assessment by the PACT at the portfolio level only. Efficiency Manitoba may consider allocating evaluation costs at the program bundle level in program evaluations.

c) The evaluation budget included in the 2020/23 Plan was not broken out by program bundle, so the costs cannot be attributed to the different program bundles for this analysis.

REFERENCE:

23 & 25 (PDF 226 & 228)

PREAMBLE TO IR (IF ANY):

Section A2 (page 23) states:
"For electricity, the savings load shape refers to the distribution of energy savings into on-peak or off-peak, and winter and summer."

Section A2 (page 23) also states:
"This value is determined based on estimates and assumptions which consider the coincidence of demand (capacity) and electric energy savings as they relate to the operational characteristics of each measure in relation to the timing of the hydroelectric system peak on an hourly and monthly basis for both seasonal periods."

Section A2 (page 25) further states:
"Manitoba Hydro provides the energy and capacity marginal values to Efficiency Manitoba for annual and seasonal time frames. Efficiency Manitoba understands that the marginal values include projected capital deferral value due to winter capacity savings and value projected in the export market."

QUESTION:

a) Does Manitoba Hydro provide distinct marginal energy values for each of the 30 years included in the PACT calculations? If not, at what level of aggregation are the values provided?
b) Please clarify whether Manitoba Hydro provides marginal energy values to Efficiency Manitoba for the peak and off peak periods in the winter and the summer or just seasonal values for the winter and the summer.
c) Does Manitoba Hydro provide:
    I. Different marginal energy values for electricity delivered at transmission as opposed to distribution voltages or

II. Marginal energy values at point of generation and loss factors to use to adjust for energy savings measured at the transmission and distribution level? If neither, how does the PACT calculation account for some customers take delivery at transmission voltages while others take delivery at distribution voltages?

d) Does Manitoba Hydro provide distinct marginal capacity values for each of the 30 years included in the PACT calculations? If not, at what level of aggregation are the values provided?

e) Do the marginal capacity values that Manitoba Hydro provided include separate marginal values for transmission facilities and distribution facilities to account for deferred transmission and distribution investment due to DSM activities?

RATIONALE FOR QUESTION:

To understand the marginal values provided by Manitoba Hydro

RESPONSE:

Response to parts a, b, c, d and e):

Please see the response to DAYMARK/EM I-20a.

REFERENCE:

Annual Natural Gas and Electric Program-Cost Effectiveness Metrics Tables

PREAMBLE TO IR (IF ANY):

QUESTION:

In what year's dollar are the levelized cost for natural gas and electric programs reported in Attachment 3 expressed in and are they "real" or "nominal" dollars (e.g., are they expressed in 2020/21 real dollars)?

RATIONALE FOR QUESTION:

To understand the basis for the levelized cost values

RESPONSE:

The levelized cost for natural gas and electric programs reported in the 2020/23 Efficiency Plan, Attachment 3, p 511 and 516 are expressed in 2020/21 real dollars.

REFERENCE:

23 & 25 (PDF 226 & 228)

PREAMBLE TO IR (IF ANY):

Section A2, page 25 states:
"Therefore, the representative portfolio weighted marginal value is not directly comparable to prior representative marginal values provided by Manitoba Hydro as the derivation of this value depends on the individual savings magnitudes and profiles of programs found within the electric profile."

During the 2017/18 & 2018/19 GRA Manitoba Hydro provided representative levelized marginal costs expressed in 2016 real dollars for both transmission and distribution level deliveries (see referenced GAC interrogatory response) assuming a 100% load factor as follows: [INSERT CHART]

During the same proceeding Manitoba Hydro also provided levelized marginal costs using 5, 10 and 20 year time horizons (see referenced CAC interrogatory).

QUESTION:

Based on Manitoba Hydro's current energy and capacity marginal values for electricity please provide the equivalent information to that provided in GAC/MH II 24 b) and CAC/MH I 24 e) expressed in real 2020/21 dollars.

RATIONALE FOR QUESTION:

To understand the change in Manitoba Hydro's marginal values for electricity.

RESPONSE:

The question requests information that is derived by Manitoba Hydro. Efficiency Manitoba is not in possession of this information and cannot provide a response.

Further information request/clarification:

COALITION/EM I-27 requested levelized marginal values for different customer classes and for different periods of time as provided in previous Manitoba Hydro General Rate Applications. Efficiency Manitoba responded that this information is derived by Manitoba Hydro and as such, Efficiency Manitoba is not in possession of this information and cannot provide an answer. This information could be readily calculated from the marginal values provided by Manitoba Hydro to Efficiency Manitoba and the documented assumptions (i.e. 100% load factor) underlying the calculations. This information is directly relevant to the cost-effectiveness analysis, as well as the methodology to project participant benefits.

Additional response from Efficiency Manitoba (December 5, 2019):

This information request would require the disclosure of Commercially Sensitive Information and cannot be provided. The requested information has been made available to the Independent Expert Consultant under the terms of a Non-Disclosure Agreement. Please see response to PUB/EM I -11 for Program Administrator Cost Test (PACT); total resource cost test (TRC); participating customer cost test (PC); simple customer payback; and rate impact measure (RIM) detail for each program bundle in the Plan. Please also see response to DAYMARK/EM I-20 and DAYMARK/EM I-21 for further details on how marginal values are applied to measures within the portfolio.

REFERENCE:

15 (PDF 140)
18 (PDF 221)

PREAMBLE TO IR (IF ANY):

Section 5 (page 15) states:
"For the purposes of determining the LRI for the natural gas portfolio, the costs associated with the Furnace Replacement Program (FRP) were excluded from the overall levelized PACT cost. This separate component was removed as those budgeted costs have already been collected from natural gas customers". (emphasis added)

QUESTION:

a) While the referenced portion of Section 5 is discussing the calculation of rate impacts the quote states that the costs associated with the Furnace Replacement Program (FRP) were excluded from the overall levelized PACT cost. Please clarify whether the costs associated with the FRP excluded from the calculation of the PACT.
   I. If yes, why?
   II. If not, for which natural gas program bundles (if any) were the FRP costs included?

b) Were the programming costs associated with the use of the Affordable Energy Fund excluded from the calculation of the PACT for natural gas?
   I. If yes, why?
   II. If not, for which natural gas program bundles (if any) were they included.

RATIONALE FOR QUESTION:

To understand the costs included in the Natural Gas PACT calculations.

RESPONSE:

a) The Furnace Replacement Program (FRP) costs were included as costs in the PACT cost-effectiveness assessment in the Plan. The FRP costs were only excluded from the PACT costs for the lifecycle revenue impact (LRI) assessment to reflect that these costs have already been collected from natural gas customers. To include these costs in the LRI analysis would result in an overstatement of the natural gas revenue required and the resulting one-time change in rates.

   i. See part a) above.

   ii. The FRP costs have been included in the Income Qualified Offers and Metis Income Qualified Offers natural gas program bundles.

b) As prescribed in Section 14 of the Efficiency Manitoba Regulation, Efficiency Manitoba must only use the Affordable Energy Fund (AEF) to encourage conservation in the use of home heating fuels other than electrical energy or natural gas. The Plan does not specifically include any AEF funding or forecasts for conservation in the use of these other home heating fuels given the limited market information regarding homes with fuel oil and propane heat combined with the historically low activity for retrofits to these homes as experienced with previous conservation programs. Heating and insulation contractors are aware of the eligibility of these homes and Efficiency Manitoba will fund any initiatives that reduce the consumption of these other fuels as the opportunities arise and track the costs to the Affordable Energy Fund and the savings on an equivalent gigajoule basis to natural gas savings. The only exception to the lack of market data regarding home heating sources other than natural gas and electricity is in diesel communities where Efficiency Manitoba is aware that nearly 100 percent of the homes are heated with fuel oil. As per the response to PUB/EM I-48, Efficiency Manitoba will confirm opportunities remaining with the communities as historic participation data from Manitoba Hydro has indicated that most homes have been retrofitted with insulation upgrades. Efficiency Manitoba also anticipates other opportunities with respect to fuel oil furnaces and will work with the diesel communities to identify what they are how they can best be supported within the constructs of the Efficiency Manitoba Act and Regulation including the use of the Affordable Energy Fund.

   i. Not applicable.

   ii. Not applicable.

REFERENCE:

23, 26 & 30 (PDF 226, 229 & 233)
Annual Natural Gas Program-Cost Effectiveness Metrics Table

PREAMBLE TO IR (IF ANY):

QUESTION:

a. Does Manitoba Hydro provide distinct marginal natural gas values for each of the 30 years included in the PACT calculations? If not, at what level of aggregation are the values provided?
b. The discussion on page 26 does not make any reference to the marginal values for natural gas including projected capital deferral values for Centra Gas. Do the marginal values provided by Manitoba Hydro attribute any value to deferred capital spending on Centra's distribution system?
    I. If not, does Efficiency Manitoba know why no value is attributed to deferred capital?
c. No reference is made to natural gas on-peak capacity savings (page 23) or marginal capacity values for natural gas (page 26). Did Manitoba Hydro provide marginal capacity values for natural gas with respect to with the commodity or transportation?
    I. If yes, please confirm what benefits due to natural gas capacity savings were included in the PACT calculations.
    II. If not, can Efficiency Manitoba confirm that there are no capacity-related costs associated with the purchase of natural gas (i.e., the commodity) or its transportation to Centra's distribution system?

RATIONALE FOR QUESTION:

To understand the basis for the Natural Gas PACT calculations

RESPONSE:

Response to parts a, b and c.

Please see the response to DAYMARK/EM I–20a.

REFERENCE:

5 (PDF 130)
7 (PDF 335)
29 (PDF 232)

PREAMBLE TO IR (IF ANY):

Section 5 (page 5) states:
"Manitoba Hydro marginal values are required in order to determine the electric benefits to Manitoba Hydro used in cost-effectiveness tests prescribed in the Regulation. The determination of marginal values is done independently by Manitoba Hydro, and Efficiency Manitoba accepts and applies the values as received."

"It is Efficiency Manitoba's understanding that the marginal values include projected capital deferral value due to winter capacity savings and value projected in the export market."

QUESTION:

a) Did Manitoba Hydro provide separate marginal values that would be applicable solely to diesel communities (i.e. recognizing that they are not grid-connected but rather served primarily by diesel generation)?
b) If yes, were these values applied to forecast savings associated with Indigenous segment programs in the diesel communities?
c) If not, what portion of the annual savings (kWh) from Indigenous segment programs is attributable to the diesel communities?

RATIONALE FOR QUESTION:

To understand the treatment of diesel communities in the calculation of the PACT.

RESPONSE:

a) Separate marginal values specific to diesel communities were not provided by Manitoba Hydro.

b) Not applicable as per response to COALITION/EM I-30a.

c) None of the annual savings (kWh) from the Indigenous segment is attributable to the diesel communities. As per response to PUB/EM I-48 and Coalition/EMI-28b, Efficiency Manitoba will confirm opportunities remaining with the communities as historic participation data from Manitoba Hydro has indicated that most homes have been retrofitted with insulation upgrades. Efficiency Manitoba also anticipates other opportunities with respect to fuel oil furnaces and will work with the diesel communities to identify what they are how they can best be supported within the constructs of the Efficiency Manitoba Act and Regulation including the use of the Affordable Energy Fund.

REFERENCE:

31-32 (PDF 234-235)

PREAMBLE TO IR (IF ANY):

Section A2 (page 32) states:
"system energy is the Base Electric Load Forecast or Actual Natural Gas Volume described in Section 2 extended throughout the 30-year time horizon. For the electric load forecast, it is further adjusted to represent energy measured at-meter instead of at-generation (that is, where rates are applied)."

QUESTION:

a) Please provide the system energy values used in the electric LRI calculations for each of the 30 years. As part of the response please also provide: i) the related values the Base Electric Load Forecast and ii) the adjustments made "to represent energy measured at-meter.
b) Were the system energy values also adjusted (i.e. reduced) to account for the impact of the energy savings in the proposed Efficiency Plan? Please provide Efficiency Manitoba rationale for making/not making such an adjustment.
c) Please provide the natural gas volumes used in the LRI calculation for each of the 30 years.
d) Were the natural gas volumes adjusted (i.e. reduced) to account for the impact of the energy savings in the proposed Efficiency Plan? Please provide Efficiency Manitoba rationale for making/not making such an adjustment.

RATIONALE FOR QUESTION:

To understand the Rate Impact calculations.

RESPONSE:

a) Please see response to COALITION/EM I-1 for the link to the 2018 Electric Load Forecast.
   i. Please see table on page 19 of 88 in the 2018 Electric Load Forecast. The last column in the table is used for the electric LRI calculation starting in 2020/2021.
   ii. There were no adjustment made given that the table presents the data at general consumer sales.

b) Within the LRI analysis, the electric system energy values were not reduced to account for the impact of the energy savings in the proposed Efficiency Plan. This was a simplifying assumption made in consideration of the magnitude of the resulting electric portfolio lifecycle rate impact (LRI) result. To illustrate, consider the LRI impact (one-time equivalent rate increase) provided in the 2020/23 Efficiency Plan ("Plan") of 0.019¢/kWh. As a sensitivity analysis, if gross firm electric load was held constant over the 30-year time horizon considered, the resulting LRI impact would increase to 0.022¢/kWh. As indicated in Section 5.4 (Plan, p. 139 of 591, line 186), the resulting LRI metric provides the similar directional estimate in both cases.

c) The natural gas volumes used in the LRI calculation for each of the 30 years is based on the Manitoba Hydro 2017/18 gross actual natural gas volume consumption. Please refer to page 224 of 591 of the Plan, lines 421-422.

d) Within the LRI analysis, the natural gas volumes were not reduced to account for the impact of the energy savings in the proposed Efficiency Plan. As indicated in COALITION/EM I-31(b) for the electric portfolio, this was a simplifying assumption made.

REFERENCE:

31-32 (PDF 234-235)

PREAMBLE TO IR (IF ANY):

Section A2 (page 32) states:
"As with the PACT, the LRI analysis is completed on a 30-year NPV basis using the identical discount rates shown in Table A2.3."

QUESTION:

Please explain why it is appropriate to use the same discount rate as was used in for the PACT calculations.

RATIONALE FOR QUESTION:

To understand the basis for the Rate Impact calculations.

RESPONSE:

The same discount rate was used for the LRI analysis to maintain consistency across all analyses.

REFERENCE:

14-16 (139-141)
31-32 (PDF 234-235)

PREAMBLE TO IR (IF ANY):

Section 5 (page 13) states:
"The current electric and natural rates adjusted for inflation are used to determine the change in revenue from the portfolio's projected decrease in electric or natural gas consumption."

Section 5 (page 14) states:
"To illustrate, if a base electric rate of 8¢/kWh is considered, a 0.24 percent one-time equivalent rate increase is determined through the LRI."

Section 5 (page 15) states:
"if a base natural gas rate of 21¢/m3 is considered, a 1.10% one-time equivalent rate increase is determined through the LRI."

QUESTION:

a. In the illustrations, what year are the base electricity and natural gas rates assumed to be associated with?
b. How does the electricity base rate of 8¢/kWh compare with Manitoba Hydro's current electricity rates?
c. How does the natural gas base rate of 21¢/m3 compare with Manitoba Hydro's (Centra's) current natural gas rates?
d. For the purposes of calculating the LRI on a 30-year NPV basis why were electricity and natural gas rates assumed to increase at the rate of inflation (i.e., 1.92% per Table A2.3)?
e. Please recalculate the values in Tables 5.6 and 5.7 assuming electricity and natural gas rates increase at 3.9% per annum.
f. Please recalculate the values in Tables 5.6 and 5.7 using a 10-year (as opposed to 30-year) evaluation period.

g. Please recalculate the values in Tables 5.6 and 5.7 using a 5-year (as opposed to 30-year) evaluation period.
h. Do the revenue loss calculations include the lost revenue due to the impact of Codes and Standards or just due to programs?

RATIONALE FOR QUESTION:

To understand the basis for the LRI calculation and the sensitivity of the results.

RESPONSE:

a. As outlined in the 2020/23 Efficiency Plan, Section A2, p. 236 on lines 646-649, the June 1, 2019 approved electricity rates and the November 2018 approved natural gas rates were used in the analysis.

b. The electricity base rate used was 8¢/kWh, and the current Manitoba Hydro rates can be found at the following link. https://www.hydro.mb.ca/accounts_and_services/rates/

c. The natural gas base rate used was of 21¢/m^3 (which is a blend of primary gas costs, supplemental gas costs, cost to transport the gas to Manitoba and costs to distribute the gas to customers.) The current Manitoba Hydro rates can be found at the following link. https://www.hydro.mb.ca/accounts_and_services/rates/

d. The electricity and natural gas rates were inflated using a rate of 1.92% in the LRI analysis to recognize the time value of money and to be consistent with the other financial analyses in the Plan. It should be noted that the Plan reports costs in nominal dollars and a nominal discount rate is used in the analysis, so the inflation rate is not a factor.

e. Efficiency Manitoba defers any detailed rate analyses and considerations to Manitoba Hydro or Centra Gas.

COALITION/EM I-33(e) requested recalculation of the values in Tables 5.6 and 5.7 assuming electricity rate and natural gas rate increase at 3.9% per annum. Efficiency Manitoba refused to respond, stating that it defers any detailed rate analyses and considerations to Manitoba Hydro or Centra Gas. The rate increase assumption is a key input to the Rate Impact Test, used for cost-effectiveness analysis, and the assumption used by Efficiency Manitoba is unrealistic based on Manitoba Hydro past filings. For purposes of the Rate Impact Test, the rate increase is an assumption made by Efficiency Manitoba and the calculation could be readily done using Efficiency Manitoba's models.

Additional response from Efficiency Manitoba (December 4, 2019):
Although Efficiency Manitoba does not conclude that the scenario requested in this question represents a realistic scenario based on Manitoba Hydro past filings, the following two tables outline the revised LRI values for the electric portfolio from Table 5.6. The first table assumes a 3.9% increase per annum for 30 years and the second table assumes a 3.9% increase per annum for 10 years.

Electric portfolio - 3.9% per annum increase for 30 years

	One-time equivalent rate increase
Lifecycle revenue impact (¢/kWh)	0.055¢/kWh
Percent increase (using 6¢/kWh)	0.91%
Percent increase (using 8¢/kWh)	0.68%
Percent increase (using 10¢/kWh)	0.55%

Electric portfolio - 3.9% per annum increase for 10 years

	One-time equivalent rate increase
Lifecycle revenue impact (¢/kWh)	0.048¢/kWh
Percent increase (using 6¢/kWh)	0.79%
Percent increase (using 8¢/kWh)	0.60%
Percent increase (using 10¢/kWh)	0.48%

The following two tables outline the revised LRI values for the natural gas portfolio from Table 5.7. The first table assumes a 3.9% increase per annum for 30 years and the second table assumes a 3.9% increase per annum for 10 years.

Natural gas - 3.9% per annum increase for 30 years

	One-time equivalent rate increase
Lifecycle revenue impact (¢/m^3)	0.39¢/m^3
Percent increase (using 19¢/m^3)	2.04%
Percent increase (using 21¢/m^3)	1.84%
Percent increase (using 23¢/m^3)	1.68%

Natural gas - 3.9% per annum increase for 10 years

	One-time equivalent rate increase
Lifecycle revenue impact (¢/m^3)	0.32¢/m^3
Percent increase (using 19¢/m^3)	1.69%
Percent increase (using 21¢/m^3)	1.53%
Percent increase (using 23¢/m^3)	1.39%

f. Please see the recalculated Tables 5.6 and 5.7 using a 10-year time period

Table 5.6 – Electric Portfolio

	One-time equivalent rate increase
Lifecycle revenue impact (¢/kWh)	0.062¢/kWh
Percent increase (using 6¢/kWh)	1.04%
Percent increase (using 8¢/kWh)	0.78%
Percent increase (using 10¢/kWh)	0.62%

Table 5.7 - Natural Gas Portfolio

	One-time equivalent rate increase
Lifecycle revenue impact (¢/m^3)	0.45¢/m^3
Percent increase (using 19¢/m^3)	2.36%
Percent increase (using 21¢/m^3)	2.13%
Percent increase (using 23¢/m^3)	1.95%

g. Please see the recalculated Tables 5.6 and 5.7 using a 5-year time period

Table 5.6 – Electric Portfolio

	One-time equivalent rate increase
Lifecycle revenue impact (¢/kWh)	0.13¢/kWh
Percent increase (using 6¢/kWh)	2.16%
Percent increase (using 8¢/kWh)	1.62%
Percent increase (using 10¢/kWh)	1.30%

Table 5.7 – Natural Gas Portfolio

	One-time equivalent rate increase
Lifecycle revenue impact (¢/m^3)	0.77¢/m^3
Percent increase (using 19¢/m^3)	4.04%
Percent increase (using 21¢/m^3)	3.66%
Percent increase (using 23¢/m^3)	3.34%

h. The revenue loss calculations include revenue loss from programs but do not include the revenue impacts from Codes and Standards.

REFERENCE:

12-16 (PDF 137-141)
18 and 31-32 (PDF 221 and 234-235)

PREAMBLE TO IR (IF ANY):

Section 5 (page 15) states that:
"For the purposes of determining the LRI for the natural gas portfolio, the costs associated with the Furnace Replacement Program (FRP) were excluded from the overall levelized PACT cost. This separate component was removed as those budgeted costs have already been collected from natural gas customers. Per the Act and the Regulation, as of Efficiency Manitoba's commencement date, residual amounts in the FRP are to be applied against natural gas DSM initiatives set out in an approved efficiency plan. Although already collected from customers, all costs are included within the overall natural gas portfolio budget".

QUESTION:

a) Were the costs associated with the Furnace Replacement Program (FRP) excluded from the calculation of the LRI for the overall natural gas portfolio?
b) Were the programming costs associated with the use of the Affordable Energy Fund excluded from the calculation of the overall LRI for the natural gas portfolio?
    I. If not, why not?
c) Were the programming costs associated with the use of the Affordable Energy Fund included in the overall budget for the natural gas portfolio? If so, where are they reflected?

RATIONALE FOR QUESTION:

To understand the basis for the LRI calculation.

RESPONSE:

a) Yes.

b) Please see response to Coalition/EM I-28.

c) Please see response to Coalition/EM I-28.

REFERENCE:

16-19 (PDF 141-144)
33 (PDF 236)

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the detailed calculations for the Residential customer segment average annual electric bill savings of $80/house (per Table 5.8) cross referencing the inputs used to where they can be found in the Application.

RATIONALE FOR QUESTION:

To understand the basis for the customer bill impact calculations.

RESPONSE:

The calculation of the residential average annual electric bill savings includes *Total Annual Bill Reductions divided by Average Participation per Year (over Three Years).*

From Attachment 3 – Technical Tables:

Annual Electric Participation

	UNITS	2020/21	2021/22	2022/23
RESIDENTIAL PROGRAMS				
Direct Install	No. of houses	800	1,200	1,600
Product Rebates	No. of products / appliances	354,000	275,000	195,000
Home Renovation	No. of projects	800	4,700	3,900
New Homes & Major Renovation	No. of houses	400	400	400
Home Energy Efficiency Kits & Education	No. of kits	2,300	2,600	2,600

Annual Bill Reduction Per Program Bundle
(All Participants)

		2020/23 Average
RESIDENTIAL PROGRAMS		
Direct Install		$ 139,000
Product Rebates		$ 895,000
Home Renovation		$ 396,000
New Homes & Major Renovation		$ 275,000
Home Energy Efficiency Kits & Education		$ 64,000
	Subtotal	$ 1,769,000

Calculation:

Residential Programs	Average participation	Annual Bill Reduction	Average Annual Electric Bill Savings
Direct Install	1,200	$139,000	$116 per home
Product Rebates	*274,667*	*$895,000*	*$3 per product*
Product Rebates *(assume 17 per home)*	16,157	$895,000	$55 per home
Home Renovation	3,133	$396,000	$126 per project
New Homes & Major Renovation	400	$275,000	$688 per home
Home Energy Efficiency Kits & Education	2,500	$64,000	$26 per kit
	23,390	1,769,000	$75.63
		Rounded:	$80

REFERENCE:

16-19 (141-144)
33 (PDF 236)
Annual Bill Reductions per Program Bundle (Electric and Natural Gas)
Annual Natural Gas and Electric Participation Levels.

PREAMBLE TO IR (IF ANY):

Section 5 (page 16) states:
"Customers that choose to participate in the programming offered by Efficiency Manitoba will see the same rate impacts but will realize annual bill reductions based on their respective energy savings."

QUESTION:

a) Please confirm that a customer choosing to participate may also incur incremental upfront costs as a result of participating in a program offering from Efficiency Manitoba.
b) Based on the assumed participation levels, for each electric program bundle please provide: i) the total amount of incentive payments that will be made to participating customer and ii) the total incremental capital cost (net of the incentives) that the participating customers will pay in 2020/21, 2021/22 and 2022/23.
c) Please provide a table similar to Table 5.8 but that includes additional columns to show for each electric customer segment/program bundle: i) the average incremental participant cost and ii) the total incremental participant costs.
d) At Section 5, page 17 the Application references a 30-NPV for electric customer bill savings of $434 M. Please provide the following values:
    I. The 5-year, 10-year and 20-year NPV values for customer bill savings.
    II. A 30-year NPV that includes not only the electric bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.
    III. A 20-year NPV that includes not only the electric bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.
    IV. A 10-year NPV that includes not only the electric bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

V. A 5-year NPV that includes not only the electric bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

e) Based on the assumed participation levels, for each natural gas program bundle please provide: i) the total amount of incentive payments that will be made to participating customer and ii) the total incremental capital cost (net of the incentives) that the participating customers will pay in 2020/21, 2021/22 and 2022/23.

f) Please provide a table similar to Table 5.9 but that includes additional columns to show for each natural gas customer segment/program bundle: i) the average incremental participant cost and ii) the total incremental participant costs.

g) At Section 5, page 18 the Application references a 30-NPV for natural gas customer bill savings of $96 M. Please provide the following values:

I. The 5-year, 10-year and 20-year NPV values for customer bill savings.

II. A 30-year NPV that includes not only the natural gas bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

III. A 20-year NPV that includes not only the natural gas bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

IV. A 10-year NPV that includes not only the natural gas bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

V. A 5-year NPV that includes not only the natural gas bill savings but also the incremental (net of incentives from Efficiency Manitoba) participants' costs.

RATIONALE FOR QUESTION:

To understand the impact on participating customers.

RESPONSE:

Note: Table 5.8 and table 5.9 have been revised as per COAL/EM I-102.

a) Confirmed, some customers will incur costs to participate in a program offering.

b) Please see column K in the table attached to DAYMARK/EM I – 13d for the planned financial incentives by measure. Please see column L in the table attached to DAYMARK/EM I – 13d for the percentage of incremental cost that the financial incentive is expected to cover.

c) Refusal. The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time permitted.

d) Refusal. The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time permitted.

e) Please see column K in the table attached to DAYMARK/EM I – 13d for the planned financial incentives by measure. Please see column L in the table attached to DAYMARK/EM I – 13d for the percentage of incremental cost that the financial incentive is expected to cover.

f) Refusal. The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time permitted.

g) Refusal. The requested analysis does not exist and would require scenario analysis and modelling which cannot be produced with reasonable effort in the time permitted

REFERENCE:

30 (PDF 40)
9 (PDF 54)
4-5 (PDF 181-182)

PREAMBLE TO IR (IF ANY):

Section 1 (page 30) states:
"Efficiency Manitoba has developed a DSM Scorecard to be used to benchmark both portfolio performance and corporate performance against other energy efficiency program administrators."

Section 2 (page 9) states:
"Performance measures included in Efficiency Manitoba's Annual Business Plan and subsequently reported on through annual reporting will reflect both strategic plan goals and measures, along with DSM-specific measures allowing comparison of Efficiency Manitoba's performance to that of similar entities in other jurisdictions."

Section 7 (page 4) states:
"Efficiency Manitoba has developed a DSM Scorecard to benchmark both portfolio performance and corporate performance against other energy efficiency program administrators."

QUESTION:

a) Please provide a copy of the scorecard that Efficiency Manitoba has developed showing the specific factors/criteria it plans to use to measure its performance.
b) Has Efficiency Manitoba established target/benchmark values for the different factors/criteria? If so, what are they and what are they based on?
c) The Application states that the Scorecard will be used to compare performance to that of similar entities in other jurisdictions. Has Efficiency Manitoba determined who these "similar entities" will be?
    I. If yes, please identify.

II. If yes, for each entity, please indicate its most recent values for the various factors/criteria Efficiency Manitoba is including in its Scorecard.

d) Is the annual reporting referenced in Section 2 (page 9) referring to the DSM scorecard or some other reporting format/forum? If some other reporting format/forum, please describe what it is and the performance measures that will be reported on.

RATIONALE FOR QUESTION:

To better understand Efficiency Manitoba's proposals regarding performance reporting.

RESPONSE:

Please see response to DAYMARK/EM I – 2a.

a) The target or benchmark values that have been established for the different criteria can be found in the attachment filed in response to DAYMARK/EM I – 2a.
b) Please see response to DAYMARK/EM I-51c.
c) Annual reporting referenced in Section 2 page 9 (pdf page 54 of 591) refers to Efficiency Manitoba's Annual Report. This will be a document produced annually in accordance with legislation and available online. For further information on annual reporting requirements, please see response to DAYMARK/EM I – 82 a-b.

REFERENCE:

4-11 and 16 (PDF 108-115 and 120)
Annual Natural Gas and Electric Cost Tables

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please provide expanded versions of Tables 4.6 and 4.7 that set out the annual values for 2020/21, 2021/22 and 2022/23.
b) Please provide the following breakdown of the natural gas and electric budgets for each year in the Plan (i.e., 2020/21, 2021/22 and 2022/23):

	EM Staff		Private Sector		Overall Total
	See Note 1	Total	See Note 2	Total	
One Row for Each Customer Segment/Program Bundle per Attachment 3 Cost Tables					
Enabling Strategies: Program Support and Education					
Enabling Strategies: Innovation, Codes & Standards and Evaluation					
Corporate Overheads					
Total					

Note 1: Provide a separate column for each of the Staff categories in Table 4.7
Note 2: Provide a separate column for each of the Private Sector categories in Tables 4.6 and 4.8.

c) If the Overall Total for each Customer Segment/Program Bundle in the table provided in part (a) does not match the costs shown in the Cost Table per Attachment 3 of the Application for each of Natural Gas and Electric, please explain why and reconcile the two values.

d) Is Manitoba Hydro a recipient of any of the "private sector" sector costs set out in Tables 4.6 or 4.8?

   I. If yes, for what activities is Manitoba Hydro being compensated and what are the total amounts for Natural Gas and Electric for each budget year?

RATIONALE FOR QUESTION:

To better understand the makeup of the proposed portfolio budgets

RESPONSE:

a)

a) Table 4.6 by year

	2020/21	2021/22	2022/23
Electric program delivery	$3,456,000	$3,602,000	$3,872,000
Electric enabling strategies	$5,039,000	$5,199,000	$5,008,000
Electric advertising	$1,112,000	$1,187,000	$1,154,000
Electric program costs (sub-total)	**$9,607,000**	**$9,988,000**	**$10,034,000**
Natural Gas program delivery	$1,457,000	$1,586,000	$1,520,000
Natural gas enabling strategies	$1,653,000	$1,691,000	$1,628,000
Natural gas advertising	$711,000	$745,000	$675,000
Natural gas program costs (subtotal)	**$3,821,000**	**$4,022,000**	**$3,823,000**
Overall program delivery	$4,913,000	$5,188,000	$5,392,000
Overall enabling strategies	$6,692,000	$6,890,000	$6,636,000
Overall advertising	$1,823,000	$1,932,000	$1,829,000
Overall program costs (total)	**$13,428,000**	**$14,010,000**	**$13,857,000**

Table 4.7 by year

	2020/21	2021/22	2022/23
Electric program design/modelling, admin. And support	$4,358,000	$4,498,000	$4,617,000
Electric enabling strategies	$1,147,000	$1,181,000	$1,200,000
Electric corporate overhead	$1,050,000	$1,070,000	$1,091,000
Electric staff costs (sub-total)	**$6,692,000**	**$6,890,000**	**$6,636,000**
Natural Gas program design, admin. and support	$1,916,000	$1,952,000	$1,953,000
Natural gas enabling strategies	$333,000	$339,000	$346,000
Natural gas corporate overhead	$350,000	$357,000	$364,000
Natural gas staff costs (subtotal)	**$2,599,000**	**$2,648,000**	**$2,663,000**
Overall program design/modelling, admin and support	$6,274,000	$6,450,000	$6,570,000
Overall enabling strategies	$1,480,000	$1,520,000	$1,546,000
Overall corporate overhead	**$1,537,000**	**$1,568,000**	**$1,183,000**
Overall staff costs (total)	**$9,291,000**	**$9,538,000**	**$9,299,000**

b) Requested tables can be found in COALITION/EM I-39 and COALITION/EM I-44

i. Program Delivery / Advertising / Incentives do not include Efficiency Manitoba Staff Costs (see COALITION/EM I-39).

ii. Program design/modeling/admin/support all Efficiency Manitoba Staff Costs (COALITION/EM I-39).

iii. Enabling Strategies Efficiency Manitoba Staff Costs are detailed in COALITION/EM I-44.

iv. Overhead costs are provided in part a) above.

c) Tables all reconcile.

d) Manitoba Hydro is not expected to be the recipient of any of the private sector cost set out in Table 4.6 or Table 4.8.

REFERENCE:

4-5 (PDF 129-130)
13 (PDF 117)
Annual Natural Gas and Electric Cost Tables

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please provide the following breakdown of the natural gas and electric budgets for each year in the Plan (i.e., 2020/21, 2021/22 and 2022/23):

	See Note 1	Total
One Row for Each Customer Segment/Program Bundle per Attachment 3 Cost Tables		
Sub-Total – Program Total		
Enabling Strategies: Program Support and Education		
Enabling Strategies: Innovation, Codes & Standards and Evaluation		
Corporate Overheads		
Overall Total		

Note 1: Include one column for each of: Program Delivery, Program Design, Advertising, Program Administration, Incentives, Enabling Strategies and Corporate Overhead per the categories set out in Table 5.1. Also include a sub-total for the following items: Delivery, Program Design, Advertising, Program Administration, and Incentives.

b) If the sub-totals for each Customer Segment/Program Bundle in the Table provide in response to part (a) per Note 1 do not match the costs shown in the Cost Table per Attachment 3 of the Application for each of Natural Gas and Electric, please explain why and reconcile the two values.

c) Is there a difference between: i) the activities and costs captured under Program Design, Modelling, Management, Administration, Technical Support and Customer Support as described in Section 4 (page 13) and ii) the activities and costs capture under Program Design and Program Administration activities in Section 5 (Table 5.1)

    I. If yes, please explain the difference and reconcile the overall costs reported for each.

d) Where are the cost of Program Advertising for specific programs (as described in Section 4, page 15) captured in the Table provided in response to part (a)?

    I. If not included in the response to part (a), please explain where these costs are capture in the overall Natural Gas and Electric portfolio budgets.

RATIONALE FOR QUESTION:

To better understand the makeup of the proposed portfolio budgets.

RESPONSE:

a) Please see the following tables:

			Annual Electric Incentive Costs (000's $)			
			2020/21	2021/22	2022/23	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$264	$407	$554	$408
	Product Rebates		$1,940	$1,623	$1,202	$1,588
	Home Renovation		$775	$1,831	$1,888	$1,498
	New Homes & Major Renovation		$801	$950	$988	$913
	Home Energy Efficiency Kits & Education		$47	$116	$118	$94
		Subtotal	$3,827	$4,928	$4,751	$4,502
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$828	$1,246	$1,252	$1,109
		Subtotal	$828	$1,246	$1,252	$1,109
INDIGENOUS PROGRAMS						
	Insulation and Direct Install		$61	$108	$121	$97
	Small Business		$186	$190	$232	$203
	Community Geothermal		$245	$425	$433	$367
	Metis Income Qualified		$67	$94	$96	$86
		Subtotal	$560	$817	$881	$753
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$1,995	$2,046	$2,098	$2,046
	In-Suite Efficiency		$59	$90	$122	$91
	Renovation		$15,311	$14,543	$13,744	$14,533
	HVAC & Controls		$810	$897	$955	$887
	New Construction & High-Performance Buildings		$1,082	$1,464	$1,341	$1,296
	Custom		$2,377	$2,017	$2,817	$2,404
	Load Displacement		$741	$5,445	$3,104	$3,096
		Subtotal	$22,375	$26,502	$24,181	$24,353
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$0	$150	$1,177	$443
		Subtotal	$0	$150	$1,177	$443
Program Totals			$27,589	$33,643	$32,242	$31,158
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Electric Costs (000's $)			**$27,589**	**$33,643**	**$32,242**	**$31,158**
Note: May not add up due to rounding.						

			Annual Electric Program Design/Modelling/Admin/Support (000's $)			
			2020/21	2021/22	2022/23	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$48	$49	$50	$49
	Product Rebates		$215	$220	$209	$215
	Home Renovation		$535	$564	$573	$558
	New Homes & Major Renovation		$38	$66	$61	$55
	Home Energy Efficiency Kits & Education		$75	$76	$77	$76
		Subtotal	$911	$976	$971	$953
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$145	$165	$155	$155
		Subtotal	$145	$165	$155	$155
INDIGENOUS PROGRAMS						
	Insulation and Direct Install		$101	$103	$105	$103
	Small Business		$47	$48	$50	$48
	Community Geothermal		$58	$60	$61	$59
	Metis Income Qualified		$11	$13	$12	$12
		Subtotal	$217	$224	$228	$223
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$336	$343	$349	$343
	In-Suite Efficiency		$75	$76	$78	$76
	Renovation		$1,586	$1,610	$1,643	$1,613
	HVAC & Controls		$121	$116	$118	$119
	New Construction & High-Performance Buildings		$253	$232	$211	$232
	Custom		$431	$440	$451	$441
	Load Displacement		$185	$189	$193	$189
		Subtotal	$2,988	$3,006	$3,042	$3,012
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$97	$128	$221	$149
		Subtotal	$97	$128	$221	$149
Program Totals			$4,358	$4,498	$4,617	$4,491
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Electric Costs (000's $)			**$4,358**	**$4,498**	**$4,617**	**$4,491**
Note: May not add up due to rounding.						

			Annual Electric Program Delivery (000's $)			
			2020/21	2021/22	2022/23	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$69	$96	$124	$96
	Product Rebates		$1,296	$1,201	$1,124	$1,207
	Home Renovation		$378	$394	$401	$391
	New Homes & Major Renovation		$62	$99	$97	$86
	Home Energy Efficiency Kits & Education		$35	$36	$37	$36
		Subtotal	$1,841	$1,826	$1,782	$1,816
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$125	$147	$135	$136
		Subtotal	$125	$147	$135	$136
INDIGENOUS PROGRAMS						
	Insulation and Direct Install		$34	$44	$46	$41
	Small Business		$77	$130	$188	$132
	Community Geothermal		$21	$21	$22	$21
	Metis Income Qualified		$11	$27	$25	$21
		Subtotal	$143	$223	$281	$215
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$271	$277	$282	$277
	In-Suite Efficiency		$66	$81	$98	$82
	Renovation		$501	$532	$549	$527
	HVAC & Controls		$41	$40	$40	$40
	New Construction & High-Performance Buildings		$174	$171	$108	$151
	Custom		$211	$210	$479	$300
	Load Displacement		$57	$58	$60	$58
		Subtotal	$1,321	$1,370	$1,615	$1,435
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$25	$36	$59	$40
		Subtotal	$25	$36	$59	$40
Program Totals			$3,455	$3,602	$3,872	$3,643
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Electric Costs (000's $)			**$3,455**	**$3,602**	**$3,872**	**$3,643**
Note: May not add up due to rounding.						

			Annual Electric Advertising (000's $)			
			2020/21	2021/22	2022/23	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$25	$25	$26	$25
	Product Rebates		$581	$593	$585	$587
	Home Renovation		$283	$317	$306	$302
	New Homes & Major Renovation		$12	$34	$21	$23
	Home Energy Efficiency Kits & Education		$2	$2	$2	$2
		Subtotal	$903	$972	$940	$939
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$90	$102	$96	$96
		Subtotal	$90	$102	$96	$96
INDIGENOUS PROGRAMS						
	Insulation and Direct Install		$0	$0	$0	$0
	Small Business		$2	$2	$2	$2
	Community Geothermal		$0	$0	$0	$0
	Metis Income Qualified		$7	$7	$7	$7
		Subtotal	$9	$9	$9	$9
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$33	$33	$34	$33
	In-Suite Efficiency		$5	$5	$5	$5
	Renovation		$28	$25	$25	$26
	HVAC & Controls		$34	$29	$29	$31
	New Construction & High-Performance Buildings		$7	$7	$7	$7
	Custom		$2	$2	$2	$2
	Load Displacement		$1	$1	$1	$1
		Subtotal	$109	$102	$103	$105
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$2	$2	$6	$3
		Subtotal	$2	$2	$6	$3
Program Totals			$1,112	$1,187	$1,154	$1,151
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Electric Costs (000's $)			**$1,112**	**$1,187**	**$1,154**	**$1,151**
Note: May not add up due to rounding.						

			Annual Electric Enabling Strategies & Corporate Overhead (000's $)			
			2020/21	2021/22	2022/23	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install					
	Product Rebates					
	Home Renovation					
	New Homes & Major Renovation					
	Home Energy Efficiency Kits & Education					
		Subtotal	$0	$0	$0	$0
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers					
		Subtotal	$0	$0	$0	$0
INDIGENOUS PROGRAMS						
	Insulation and Direct Install					
	Small Business					
	Community Geothermal					
	Metis Income Qualified					
		Subtotal	$0	$0	$0	$0
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances					
	In-Suite Efficiency					
	Renovation					
	HVAC & Controls					
	New Construction & High-Performance Buildings					
	Custom					
	Load Displacement					
		Subtotal	$0	$0	$0	$0
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology					
		Subtotal	$0	$0	$0	$0
Program Totals			$0	$0	$0	$0
Enabling Strategies: Program Support and Education			$1,289	$1,312	$1,355	$1,319
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$4,897	$5,068	$4,854	$4,940
Corporate Overhead			$1,844	$1,841	$2,889	$2,191
Total Electric Costs (000's $)			**$8,030**	**$8,221**	**$9,098**	**$8,450**
Note: May not add up due to rounding.						

TOTAL Annual Electric Costs (000's $)

			2020/21	2021/22	2022/23	**Annual Average**
			2020/23 Efficiency Plan			
RESIDENTIAL PROGRAMS						
	Direct Install		$406	$578	$753	$579
	Product Rebates		$4,033	$3,638	$3,120	$3,597
	Home Renovation		$1,971	$3,107	$3,169	$2,749
	New Homes & Major Renovation		$913	$1,149	$1,168	$1,077
	Home Energy Efficiency Kits & Education		$158	$230	$234	$207
		Subtotal	$7,482	$8,701	$8,445	$8,209
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$1,188	$1,660	$1,637	$1,495
		Subtotal	$1,188	$1,660	$1,637	$1,495
INDIGENOUS PROGRAMS						
	Insulation and Direct Install		$196	$256	$272	$241
	Small Business		$313	$370	$472	$385
	Community Geothermal		$323	$505	$515	$448
	Metis Income Qualified		$97	$141	$140	$126
		Subtotal	$929	$1,272	$1,398	$1,200
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$2,636	$2,698	$2,763	$2,699
	In-Suite Efficiency		$204	$253	$303	$253
	Renovation		$17,425	$16,710	$15,961	$16,699
	HVAC & Controls		$1,006	$1,083	$1,142	$1,077
	New Construction & High-Performance Buildings		$1,516	$1,875	$1,667	$1,686
	Custom		$3,021	$2,668	$3,749	$3,146
	Load Displacement		$984	$5,693	$3,357	$3,344
		Subtotal	$26,793	$30,980	$28,942	$28,905
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$124	$317	$1,463	$635
		Subtotal	$124	$317	$1,463	$635
Program Totals			$36,515	$42,930	$41,885	$40,443
Enabling Strategies: Program Support and Education			$1,289	$1,312	$1,355	$1,319
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$4,897	$5,068	$4,854	$4,940
Corporate Overhead			$1,844	$1,841	$2,889	$2,191
Total Electric Costs (000's $)			**$44,545**	**$51,151**	**$50,983**	**$48,893**
Note: May not add up due to rounding.						

			Annual Natural Gas Incentive Costs (000's $)			
			2020/21	**2021/22**	**2022/23**	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$57	$93	$127	$92
	Product Rebates		$472	$405	$52	$310
	Home Renovation		$602	$2,729	$3,497	$2,276
	New Homes & Major Renovation		$211	$463	$512	$395
	Home Energy Efficiency Kits & Education		$23	$36	$36	$32
		Subtotal	$1,365	$3,727	$4,224	$3,105
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$4,486	$4,542	$5,107	$4,712
		Subtotal	$4,486	$4,542	$5,107	$4,712
INDIGENOUS PROGRAMS						
	Metis Income Qualified		$210	$212	$239	$221
		Subtotal	$210	$212	$239	$221
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$216	$220	$226	$220
	In-Suite Efficiency		$38	$58	$79	$58
	Renovation		$1,888	$1,911	$2,143	$1,981
	HVAC & Controls		$533	$571	$612	$572
	New Construction & High-Performance Buildings		$1,558	$2,071	$1,835	$1,822
	Custom		$1,664	$962	$1,395	$1,340
		Subtotal	$5,896	$5,793	$6,290	$5,993
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$0	$74	$102	$59
		Subtotal	$0	$74	$102	$59
Program Totals			$11,958	$14,348	$15,961	$14,089
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Natural Gas Costs (000's $)			$11,958	$14,348	$15,961	$14,089
Note: May not add up due to rounding.						

			Annual Natural Gas Program Design/Modelling/Admin/Support (000's $)			
			2020/21	**2021/22**	**2022/23**	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$48	$49	$50	$49
	Product Rebates		$69	$70	$37	$59
	Home Renovation		$147	$148	$153	$149
	New Homes & Major Renovation		$54	$92	$87	$78
	Home Energy Efficiency Kits & Education		$74	$76	$77	$76
		Subtotal	$392	$435	$403	$410
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$580	$575	$599	$585
		Subtotal	$580	$575	$599	$585
INDIGENOUS PROGRAMS						
	Metis Income Qualified		$32	$31	$33	$32
		Subtotal	$32	$31	$33	$32
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$22	$23	$23	$23
	In-Suite Efficiency		$0	$0	$0	$0
	Renovation		$161	$171	$173	$168
	HVAC & Controls		$170	$174	$178	$174
	New Construction & High-Performance Buildings		$291	$271	$268	$277
	Custom		$219	$223	$227	$223
		Subtotal	$863	$862	$868	$864
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$48	$49	$50	$49
		Subtotal	$48	$49	$50	$49
Program Totals			$1,916	$1,952	$1,953	$1,940
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Natural Gas Costs (000's $)			$1,916	$1,952	$1,953	$1,940
Note: May not add up due to rounding.						

			Annual Natural Gas Program Delivery (000's $)			
			2020/21	**2021/22**	**2022/23**	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install		$69	$96	$124	$96
	Product Rebates		$206	$192	$104	$167
	Home Renovation		$105	$105	$108	$106
	New Homes & Major Renovation		$89	$139	$140	$123
	Home Energy Efficiency Kits & Education		$36	$36	$37	$36
		Subtotal	$504	$568	$513	$528
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$507	$518	$528	$518
		Subtotal	$507	$518	$528	$518
INDIGENOUS PROGRAMS						
	Metis Income Qualified		$32	$69	$71	$57
		Subtotal	$32	$69	$71	$57
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$9	$9	$9	$9
	In-Suite Efficiency		$0	$0	$0	$0
	Renovation		$46	$63	$66	$58
	HVAC & Controls		$56	$57	$59	$57
	New Construction & High-Performance Buildings		$222	$220	$189	$211
	Custom		$68	$69	$71	$69
		Subtotal	$401	$418	$394	$404
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$13	$13	$14	$13
		Subtotal	$13	$13	$14	$13
Program Totals			$1,456	$1,586	$1,520	$1,521
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Natural Gas Costs (000's $)			$1,456	$1,586	$1,520	$1,521
Note: May not add up due to rounding.						

Annual Natural Gas Advertising (000's $)

			2020/21	2021/22	2022/23	Annual Average
RESIDENTIAL PROGRAMS						
	Direct Install		$25	$25	$26	$25
	Product Rebates		$144	$145	$80	$123
	Home Renovation		$78	$84	$82	$81
	New Homes & Major Renovation		$18	$48	$31	$32
	Home Energy Efficiency Kits & Education		$2	$2	$2	$2
		Subtotal	$266	$304	$220	$263
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers		$360	$357	$372	$363
		Subtotal	$360	$357	$372	$363
INDIGENOUS PROGRAMS						
	Metis Income Qualified		$18	$18	$19	$19
		Subtotal	$18	$18	$19	$19
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances		$2	$2	$2	$2
	In-Suite Efficiency		$0	$0	$0	$0
	Renovation		$7	$6	$6	$6
	HVAC & Controls		$39	$40	$37	$38
	New Construction & High-Performance Buildings		$8	$8	$8	$8
	Custom		$8	$9	$9	$9
		Subtotal	$64	$64	$62	$63
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology		$2	$2	$2	$2
		Subtotal	$2	$2	$2	$2
Program Totals			$711	$745	$675	$710
Enabling Strategies: Program Support and Education			$0	$0	$0	$0
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$0	$0	$0	$0
Corporate Overhead			$0	$0	$0	$0
Total Natural Gas Costs (000's $)			$711	$745	$675	$710

Note: May not add up due to rounding.

			Annual Electric Enabling Strategies & Corporate Overhead (000's $)			
			2020/21	**2021/22**	**2022/23**	**Annual Average**
RESIDENTIAL PROGRAMS						
	Direct Install					
	Product Rebates					
	Home Renovation					
	New Homes & Major Renovation					
	Home Energy Efficiency Kits & Education					
		Subtotal	$0	$0	$0	$0
INCOME QUALIFIED PROGRAMS						
	Income Qualified Offers					
		Subtotal	$0	$0	$0	$0
INDIGENOUS PROGRAMS						
	Metis Income Qualified					
		Subtotal	$0	$0	$0	$0
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS						
	Small Business & Appliances					
	In-Suite Efficiency					
	Renovation					
	HVAC & Controls					
	New Construction & High-Performance Buildings					
	Custom					
		Subtotal	$0	$0	$0	$0
EMERGING TECHNOLOGY PROGRAMS						
	Emerging Technology					
		Subtotal	$0	$0	$0	$0
Program Totals			$0	$0	$0	$0
Enabling Strategies: Program Support and Education			$353	$341	$355	$350
Enabling Strategies: Innovation, Codes & Standards and Evaluation			$1,632	$1,689	$1,618	$1,647
Corporate Overhead			$615	$614	$963	$730
Total Natural Gas Costs (000's $)			$2,600	$2,644	$2,936	$2,727
Note: May not add up due to rounding.						

Annual Natural Gas Costs (000's $)

		2020/21	2021/22	2022/23	**Annual Average**
		2020/23 Efficiency Plan			
RESIDENTIAL PROGRAMS					
	Direct Install	$199	$264	$327	$263
	Product Rebates	$890	$813	$272	$658
	Home Renovation	$933	$3,066	$3,839	$2,612
	New Homes & Major Renovation	$371	$742	$769	$627
	Home Energy Efficiency Kits & Educat	$135	$149	$152	$145
		$2,528	$5,033	$5,360	$4,307
INCOME QUALIFIED PROGRAMS					
	Income Qualified Offers	$5,934	$5,992	$6,606	$6,177
		$5,934	$5,992	$6,606	$6,177
INDIGENOUS PROGRAMS					
	Metis Income Qualified	$292	$330	$362	$328
		$292	$330	$362	$328
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS					
	Small Business & Appliances	$249	$254	$260	$254
	In-Suite Efficiency	$38	$58	$79	$58
	Renovation	$2,102	$2,151	$2,387	$2,213
	HVAC & Controls	$797	$841	$886	$842
	New Construction & High-Performanc	$2,079	$2,570	$2,301	$2,317
	Custom	$1,959	$1,262	$1,702	$1,641
		$7,224	$7,136	$7,615	$7,325
EMERGING TECHNOLOGY PROGRAMS					
	Emerging Technology	$63	$139	$168	$123
		$63	$139	$168	$123
Program Totals		$16,041	$18,631	$20,110	$18,261
Enabling Strategies: Program Support and Educatio		$353	$341	$355	$350
Enabling Strategies: Innovation, Codes & Standards		$1,632	$1,689	$1,618	$1,647
Corporate Overhead		$615	$614	$963	$730
Total Natural Gas Costs (000's $)		$18,641	$21,275	$23,047	$20,987
Note: May not add up due to rounding.					

b) Part A reconciles to Attachment 3.

c) There is no difference between i) and ii).

d) Advertising is provided in part a) of this question.

REFERENCE:

To better understand the makeup of the proposed portfolio budgets.

PREAMBLE TO IR (IF ANY):

QUESTION:

a) With respect to the Customer Incentive portion of the budget (Section 4, pages 8-9), please confirm that associated costs can be directly and uniquely associated with Natural Gas versus Electric Programs.
    I. If not, what portion of the costs are not directly attributable to Natural Gas vs. Electric programs, what are the associated activities and how were these costs allocated as between Natural Gas and Electric. Please also provide the rationale for the allocation methodology used.
b) With respect to the Customer Incentive portion for each of the Natural Gas and Electric portfolio's budget (Section 4, pages 8-9), please confirm that associated costs can be directly and uniquely associated with individual Customer Segments/Program Bundles.
    I. If not, what portion of the costs are not directly attributable to specific Customer Segments/Program Bundles, what are the associated activities and how were these costs allocated as between the Customer Segments/Program Bundles in either the Natural Gas and Electric portfolios. Please also provide the rationale for the allocation methodology used.

RATIONALE FOR QUESTION:

To better understand the makeup of the proposed portfolio budgets.

RESPONSE:

a) Confirmed.
    I. Not applicable.
b) Confirmed.
    I. Not applicable.

REFERENCE:

11-12 (PDF 115-116)
5 (PDF 130)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) With respect to the Customer Incentive portion of the budget (Section 4, pages 8-9), please confirm that associated costs can be directly and uniquely associated with Natural Gas versus Electric Programs.
    I. If not, what portion of the costs are not directly attributable to Natural Gas vs. Electric programs, what are the associated activities and how were these costs allocated as between Natural Gas and Electric. Please also provide the rationale for the allocation methodology used.
b) With respect to the Customer Incentive portion for each of the Natural Gas and Electric portfolio's budget (Section 4, pages 8-9), please confirm that associated costs can be directly and uniquely associated with individual Customer Segments/Program Bundles.
    I. If not, what portion of the costs are not directly attributable to specific Customer Segments/Program Bundles, what are the associated activities and how were these costs allocated as between the Customer Segments/Program Bundles in either the Natural Gas and Electric portfolios. Please also provide the rationale for the allocation methodology used.

RATIONALE FOR QUESTION:

To better understand the makeup of the proposed portfolio budgets.

RESPONSE:

This question is identical to Coalition/EM I-40. Based on the reference, the following response assumes that this question is asking about the program and staff budgets rather than the incentives which was asked in Coalition/EM I-40.

a) The following outlines the allocation of electric and natural gas costs for the private sector program portions of the budget shown in Table 4.6 of the 2020/23 Efficiency Plan, Section 4, p. 115 of 591:
   - Program delivery – costs are directly associated with natural gas and electric programs.
   - Enabling Strategies – costs are allocated 75% to electric costs and 25% to natural gas costs as outlined in DAYMARK/EM I-16.
   - Advertising – the allocation is a hybrid: program specific advertising is allocated directly to the programs and overall Efficiency Manitoba branding efforts and advertising are allocated 75% to electric costs and 25% to natural gas costs as outlined in DAYMARK/EM I-16.

   The following outlines the allocation of electric and natural gas costs for the Efficiency Manitoba staff portions of the budget shown in Table 4.7 of the 2020/23 Efficiency Plan, Section 4, p. 115 of 591:
   - Program design/modelling administration and support – costs are directly associated with natural gas and electric programs.
   - Enabling Strategies – costs are allocated 75% to electric costs and 25% to natural gas costs as outlined in DAYMARK/EM I-16.
   - Corporate Overhead – costs are allocated 75% to electric costs and 25% to natural gas costs as outlined in outlined in COALITION/EM I-46e.

     I. Please see response to part a.

b) Please see the response to part a.

   I. Please see response to part a.

REFERENCE:

11 and 13 (PDF 115 and 117)
5 (PDF 130)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) It is noted that there are no private sector costs attributed to Program Design, Modelling, Management, Administration, Technical Support and Customer Support. Please confirm that all of the work required for these activities is carried out by Efficiency Manitoba staff (i.e., no use of consultants, third-party contractors, etc.)
    I. If not confirmed, please provide revised versions of Table 4.6 and 4.7 and describe the work/activities undertaken by external consultants and/or 3rd party contractors.

b) With respect to the Program Design, Modelling, Management, Administration, Technical Support and Customer Support portion of the budget (Section 4, pages 11 & 12)), can all of the associated costs be directly and uniquely associated with Natural Gas versus Electric Programs.
    I. If not, what costs portion of the costs are not directly attributable to Natural Gas vs. Electric programs, what are the associated activities and how were these costs allocated as between Natural Gas and Electric. Please also provide the rationale for the allocation methodology used.

c) With respect to the Program Design, Modelling, Management, Administration, Technical Support and Customer Support portion for each of the Natural Gas and Electric portfolio's budget (Section 4, pages 11-12), can the associated costs be directly and uniquely associated with individual Customer Segments/Program Bundles?
    I. If not, what portion of the costs are not directly attributable to specific Customer Segments/Program Bundles, what are the associated activities and how were these costs allocated as between the Customer Segments/Program Bundles in the Natural Gas and Electric portfolios. Please also provide the rationale for the allocation methodology used.

RATIONALE FOR QUESTION:

To better understand the make-up of the portfolio budgets

RESPONSE:

a) Confirmed.
    I. Not applicable.
b) Yes, all of the associated costs can be directly and uniquely associated with Natural Gas versus Electric Programs.
    I. Not applicable.
c) Yes, the associated costs can be directly and uniquely associated with individual Customer Segments/Program Bundles.
    I. Not applicable.

REFERENCE:

11 & 15 (PDF 115 & 119)
5 (PDF 130)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) With respect to the Program Advertising portion of the budget (Section 4, pages 11 & 15), can all of the associated costs be directly and uniquely associated with Natural Gas versus Electric Programs.
    I. If not, what costs portion of the costs are not directly attributable to Natural Gas vs. Electric programs, what are the associated activities and how were these costs allocated as between Natural Gas and Electric. Please also provide the rationale for the allocation methodology used.
b) With respect to the Program Advertising portion for each of the Natural Gas and Electric portfolio's budget (Section 4, pages 11 & 15), can the associated costs be directly and uniquely associated with individual Customer Segments/Program Bundles?
    I. If not, what costs portion of the costs are not directly attributable to specific Customer Segments/Program Bundles, what are the associated activities and how were these costs allocated as between the Customer Segments/Program Bundles in the Natural Gas and Electric portfolios. Please also provide the rationale for the allocation methodology used.

RATIONALE FOR QUESTION:

To better understand the make-up of the portfolio budgets

RESPONSE:

a) Yes, program advertising costs can be directly associated with natural gas and electric programs. The approach used to determine the electric and natural gas allocation of

administration costs (including advertising) was conducted at the bundle level using the following methodology.

- Overall administration cost was determined for each program bundle broken-down by administration cost type such as advertising, staffing, and outsourced third-party service provider.
- The electric and natural gas savings were converted to gigajoules for each program bundle for accurate comparison. Then, the percentage of energy savings associated with electricity and natural gas was calculated.
- The percentage of electricity and natural gas energy savings were then applied to each administration cost type (advertising, staffing, outsourced third-party service provider, etc.) at the bundle level to determine the electric and natural gas administration budgets.

b) Yes, the advertising costs in table 4.6 (PDF page 115) are associated with individual customer segments/program bundles.

REFERENCE:

11-12 & 14 (PDF 115-116 & 118)

Annual Natural Gas and Electric Cost Tables

PREAMBLE TO IR (IF ANY):

Section A9 (page 1) states that Enabling Strategies can be described in three categories: i) Engagement Activities, ii) Emerging Technologies and iii) Codes & Standards.
The Cost Tables in Attachment 3 break the budget down into two cost categories: i) Enabling Strategies: Program Support and Education and ii) Enabling Strategies: Innovation, Codes & Standards and Evaluation.

For allocating the budget for Enabling Strategies, Section 4 (page 14) breaks the Enabling Strategies budget down into two categories: i) Energy Efficiency support activities not specific to a program or offer and ii) activities associated with general Efficiency Manitoba branding and engagement; independent program evaluation; Efficiency Plan development; research and development (innovation); and development of energy-efficient codes & standards. The first category is then further broken down as between: i) energy efficiency support activities directed at customers or technologies that are predominately electric focused and ii) the remaining energy efficiency support activities.

QUESTION:

a) Please provide a schedule that indicates how the categories described in Section A9 align with the cost categories used in Attachment 3.
b) Please provide a schedule that indicates how the categories described in Section A9 align with the allocation categories described in Section 4.
c) With reference to Section 4 and the sub-sections in Section A9, for each of Natural Gas and Electricity please provide a listing of the specific activities included under Enabling Strategies: Program Support and Education – per the budget tables in Attachment 3 and

a breakdown of the costs. Also, please indicate whether this category of costs includes any activities not identified in Section A9.

d) With reference to Section 4 and the sub-sections in Section A9, for each of Natural Gas and Electricity please provide a listing of the specific activities included under Enabling Strategies: Innovation, Codes & Standards and Evaluation – per the budget tables in Attachment 3 and a breakdown of the costs. Also, please indicate whether this category of costs includes any activities not identified in Section A9.

e) Please provide a schedule that indicates how the cost categories used in Attachment 3 align with the allocation categories described in Section 4.

f) Is Enabling Strategies: Program Support and Education – per the budget tables in Attachment 3 intended to capture the Enabling Strategies activities discussed in Section 4, page 14, lines 151-158?

g) Is Enabling Strategies: Innovation, Codes & Standards and Evaluation – per the budget tables in Attachment 3 intended to capture the Enabling Strategies activities discussed in Section 4, page 14, lines 165-172?

h) Please explain what is meant by "predominantly electric focused" per Section 4, page 14, lines 159-161.

i) Please provide a schedule that identifies each of the energy efficiency support activities that are considered to be predominantly electric focused, why this considered to be the case and the associated costs for each of 2020/21, 2021/22 and 2022/23.

j) Please explain why there are no energy efficiency support activities that are considered to be predominantly natural gas focused.

k) Based on the responses to parts (b) and (c), please provide a schedule that identifies each of the remaining energy efficiency support activities that have been allocated 75% to the electric portfolio and 25% to the natural gas portfolio.

l) Please explain the basis for the 75%/25% allocation used for these remaining energy efficiency support activities.

m) Which of the electric and natural gas programs are these "remaining activities" supporting and what it the NPV of the benefits (per the PACT) associated with each program?

n) Section 4 (page 14) states that the additional budget items in the Enabling Strategies category (e.g., general Efficiency Manitoba branding and engagement; independent program evaluation; Efficiency Plan development; research and development (innovation); and development of energy-efficient codes & standards) are allocated

75/25 between the electric and natural gas portfolios based on "historical spending patterns". Does Efficiency Manitoba view its activities in these areas to be sufficiently similar to Manitoba Hydro's past activities that the use of historical spending patterns is appropriate?

o) In the past, has Manitoba Hydro been able to directly/uniquely attribute the historic spending in these areas to Natural Gas vs. Electric or were such costs also "allocated" in the past.

   I. If Manitoba Hydro was able to directly attribute the costs to Natural Gas vs. Electric why can Efficiency Manitoba not do so as well?

   II. If allocated, what allocation methodology/methodologies did Manitoba Hydro and what would be results if Efficiency Manitoba used the same methodology/methodologies?

RATIONALE FOR QUESTION:

To better understand the treatment and allocation of Enabling Strategies in the portfolio budgets.

RESPONSE:

a) The following table outlines how the Section A9, Section A4 and Attachment 3 budget categories provided in the 2020/23 Efficiency Plan ("Plan") are aligned. It provides annual averages associated with both the electric, natural gas and overall portfolio budgets associated with each cost category. The final two columns of this table provide the resulting budget allocated between electric and natural gas portfolios.

Attachment 3 Cost Categories	Appendix A - Section A9 Categories	A9 Sub Categories	Annual Average			Allocation	
			ELECTRIC BUDGET	NATURAL GAS BUDGET	OVERALL BUDGET	Electric	Natural Gas
Enabling Strategies: Program Support and Education	Engagement Initiatives	Program Support & Education (Efficiency Manitoba Staff)	$483,000	$147,000	$630,000	77%	23%
		Emerging Technologies Support (Efficiency Manitoba Staff)	$115,000	$0	$115,000	100%	0%
		Contracted program support services	$290,000	$60,000	$350,000	83%	17%
		Program support expenses (energy advocates, travel, curriculums)	$259,000	$86,000	$345,000	75%	25%
		Creative design support, materials and supplies.	$172,000	$57,000	$229,000	75%	25%
	SUBTOTAL (Attachment 3 - Enabling Strategies: Program Support & Education)		**$1,319,000**	**$350,000**	**$1,669,000**	**79%**	**21%**
Enabling Strategies: Innovation, Codes & Standards, Evaluation	Engagement Initiatives	Business Communications (Efficiency Manitoba Staff)	$145,000	$48,000	$193,000	75%	25%
		Business Communications	$337,000	$112,000	$449,000	75%	25%
	Emerging Technologies and Codes & Standards	CRM/DSM and enterprise systems	$414,000	$138,000	$552,000	75%	25%
		Codes & Standards (Efficiency Manitoba Staff)	$16,000	$5,000	$21,000	75%	25%
		Evaluation & Planning (Efficiency Manitoba Staff)	$418,000	$139,000	$557,000	75%	25%
		Innovation / Research & Development (Market Potential Study)	$535,000	$178,000	$713,000	75%	25%
		Codes & Standards	$366,000	$122,000	$488,000	75%	25%
		Contracted program support services	$1,213,000	$406,000	$1,619,000	75%	25%
	Other (Not specifically referenced in A9)	Contracted business support services	$460,000	$153,000	$613,000	75%	25%
		Legal / business consultants	$857,000	$286,000	$1,142,000	75%	25%
		Professional development, memberships and training	$179,000	$60,000	$239,000	75%	25%
	SUBTOTAL (Enabling Strategies: Innovation, Codes & Standards, Evaluation)		**$4,940,000**	**$1,647,000**	**$6,586,000**	**75%**	**25%**
	SUBTOTAL Efficiency Manitoba Staff (See Table 4.7, Plan, p.115 of 591)		$1,177,000	$339,000	$1,516,000	78%	22%
	SUBTOTAL Private Sector (See Table 4.7, Plan, p.115 of 591)		$5,082,000	$1,658,000	$6,739,000	75%	25%
	TOTAL		$6,259,000	$1,997,000	$8,255,000	76%	24%

Note. *Currency is expressed in nominal dollars. Totals may not add up exactly due to rounding.*

b) All activities included within Enabling Strategies are activities that support program bundles or offers but do not result in direct energy savings. Section 4.4 (Plan, p. 118 of 591) outlines several examples of support activities included in Enabling Strategies. There are two distinct cost allocation categories outlined in Section 4:

- Energy efficiency support activities directed at customers or technologies that are predominantly electric focused – allocated 100% to the electric portfolio. See COALITION/EM I-44h.
- All remaining energy efficiency support activities – allocated 75% to the electric portfolio and 25% to the natural gas portfolio.

Please see the response to COALITION/EM I-44a which provides the alignment of Section A9 with Section 4 of the Plan.

c) Please see the response to COALITION/EM I-44a.

d) Please see the response to COALITION/EM I-44a.

e) Please see the response to COALITION/EM I-44a.

f) Please see the response to COALITION/EM I-44a.

g) Please see the response to COALITION/EM I-44a.

h) "Predominantly electric focused" would be those activities that would most likely result in electric energy savings. For example, community energy plans for First Nations communities would result in electric energy savings because nearly all First Nations communities do not have access to natural gas.

i) The support activities that are predominantly electric focused are:

- First Nations support activities – included in the Program Support and Education and the Contracted Business Support Services sub-categories of the table in the response to part a).

- Emerging Technologies supporting activities – includes support for solar photovoltaic and bioenergy. Located within the Emerging Technologies Support sub- category of the table in the response to part a).

j) For natural gas energy efficiency, any natural gas specific efforts are incorporated within the natural gas programs. Any support activities for natural gas programs also support electric programs; there are no support activities that are focused solely on natural gas initiatives. For electricity, there are a limited number of support activities that are focused on electric savings. Please see response to COALITION/EM I-44h.

k) Please see the response to COALITION/EM I-44a.

l) Please see the response to DAYMARK/EM I–16.

m) The "remaining programs" are all programs in the portfolio other than those listed in part i). The NPV of the benefits of the program bundles are found in Attachment 3 (Plan, p. 511 and p. 516) and are also provided in the response to PUB/EM I-11.

n) Please see the response to DAYMARK/EM I-16. This allocation methodology is consistent with the methodology used historically at Manitoba Hydro. This allocation of costs is based on converting the net electricity savings and net natural gas savings forecast in the Plan to an equivalent measure (Gigajoule) and then allocating these joint costs based on each fuel's share of the total Gigajoule savings.

o) Please see the response to COALITION/EM I-44n.
- Not applicable.
- Not applicable.

REFERENCE:

3 (PDF 180)
3-4 (PDF 418-419)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) What is the current development status of the CRM/DSM System and when is it expected to be fully functional/in-service? Please list all milestones that have been achieved to date and the date on which each was completed.
b) What is the total budget for the development/implementation of the CRM/DSM system?
c) How much will have been spent as of March 31, 2020 and what are the annual expenditures for each of the three years in the Plan?
d) Is the System being developed by a 3rd party contractor?
    I. If yes, has the contractor been selected?
    II. If yes, was the contractor selected using an open RFP process?

RATIONALE FOR QUESTION:

To better understand the status and cost of the CRM/DSM System.

RESPONSE:

a) The procurement and subsequent implementation of a CRM/DSM system is currently underway. Completed milestones include:

- development and issuance of a Request for Qualified Suppliers (RFQS) to procure the services of an external Information Technology Project Manager – June 2019;
- Information Technology Project Manager role awarded, and individual onboarded – August 2019;
- review and assessment of all current Manitoba Hydro Demand Side Management Program databases and associated systems – September 2019;
- legal requirements review to support the 'to be developed' system purchase and

implementation Request for Proposal – September 2019;

- development and approval of Project Charter – September 2019;
- development of requirements documentation to support system purchase and implementation Request for Proposal – October 2019;

Future targeted milestones include:

- finalize development and subsequent issuance of a system purchase and implementation Request for Proposal – by December 2019;
- development and issuance of a Request for Qualified Suppliers (RFQS) to procure the services of an external Information Technology Business Analyst – by January 2020;
- vendor evaluation and selection for system purchase and implementation – by February 2020;
- implementation work to commence – by March 2020, with;
- various features of the CRM/DSM system being implemented in a phased approach between August 2020 and November 2020.

b) The total 2020/23 budget for the purchase and development/implementation of the CRM/DSM system is $1,656,000. This budget also includes additional Efficiency Manitoba enterprise systems such as accounting and human resources.

c) As of March 31, 2020, total expenditures associated with the CRM/DSM system are estimated to be $440,000 and are funded via the transitional provisions in the Efficiency Manitoba Act. Annual expenditures associated with the CRM/DSM system, and other Efficiency Manitoba enterprise systems, for each of the three years in the Plan are: 2020/21 = $542,000; 2021/22 = $552,000; and 2022/23 = $563,000.

d) Confirmed. The system will be purchased from, and implemented by, a third party vendor.

   I. The successful vendor has yet to be selected. A formal shortlist of vendors will be identified following a review of all bids to the system purchase and implementation Request for Proposal during the vendor evaluation process, culminating with final selection taking place in February 2020.

II. Yes, the vendor will be selected using an open RFP process advertised and distributed through MERX - electronic tendering service. MERX provides vendors with a low-cost, easily accessible and transparent way of reviewing and obtaining government tenders.

REFERENCE:

11 and 15-16 (PDF 115 and 119-120
Annual Natural Gas and Electric Cost Tables

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Section 4 (page 15) states: "The corporate overhead budget includes leadership and general administration staff in human resources, government relations, finance and accounting, and other corporate administration functions." What other corporate administration functions are included in the corporate overhead budget?
b) Please provide an organizational chart for Efficiency Manitoba and indicate which business units are considered to be part of Corporate Overhead.
c) To the extent possible, please provide a breakdown of the annual Corporate Overhead budgets for both Natural Gas and Electric into the various activities involved.
d) The Corporate Overhead annual budgets for Natural Gas and Electric (Attachment 3) both show increases of more than 50% between 2021/22 and 2022/23. The Application indicates that this is due to "the PUB regulatory expenditures required by legislation prior to implementation of the 2023/26." Please provide more details regarding the expenditures required by legislation prior to the implementation of the 2023/26 plan that lead to this increase.
e) What is the basis for allocating the total Corporate Overhead budget between the Natural Gas and Electric portfolios?
f) Excluding Corporate Overheads, what is the split between the Natural Gas and Electric Portfolios in terms of:
    I. Total Costs,
    II. Staff Costs, and
    III. Efficiency Manitoba Staff Numbers?

RATIONALE FOR QUESTION:

To understand the Corporate Overhead budgets.

RESPONSE:

a) "Other corporate administrative functions" will include other functions not directly involved in program delivery at Efficiency Manitoba, but which are integral to the effective functioning of the organization as a Crown corporation.

b) The organization chart for Efficiency Manitoba upon its April 1, 2020 commencement date has not yet been finalized. At this time, most of the Corporate overhead functions are anticipated to be aligned directly with the CEO and the Vice President of Corporate Performance.

c) Tables 4.6 and 4.7 of the 2020/23 Efficiency Plan, Section 4, p. 115 of 591, provide the overhead costs for electric and natural gas broken into private sector program costs (Table 4.6) and Efficiency Manitoba staff costs (Table 4.7). A further break down of categories for the annual Corporate Overhead budgets is currently not available as explained above, Efficiency Manitoba's organizational structure is not finalized.

d) Efficiency Manitoba is required by legislation to submit its three-year plan to the Public Utilities Board (PUB) every 3 years. The costs associated with the PUB process including the participation of the PUB and registered interveners is fully assigned to Efficiency Manitoba. Regulatory expenses are considered part of Efficiency Manitoba's Corporate Overhead budget, therefore every three years that expense will increase to reflect the increase in costs associated with the regulatory process.

e) Corporate Overhead cannot be attributed directly to electricity or natural gas, so a split is applied to allocate the costs. Please see response to DAYMARK/EM I-16.

f) The average annual total costs over the 3-year plan are as follows:

	Electric	Natural Gas
I. Total costs (less OH)	$47,772,000	$20,615,000
II. Staff costs	$6,738,000	$2,637,000
III. Efficiency Manitoba Staff Numbers	As per Section 2.2, Efficiency Manitoba staffing is budgeted to be up to 75 full-time equivalent staff. As per part b) above, the organization chart for Efficiency Manitoba upon its April 1, 2020 commencement ate has not yet been finalized.	

REFERENCE:

32 (PDF 42)
Annual Natural Gas and Electric Cost Tables

PREAMBLE TO IR (IF ANY):

Section 1 (page 32) states:
"Efficiency Manitoba has identified a three-year contingency fund for the explicit purpose of pursuing unanticipated DSM opportunities."

QUESTION:

a) What are the contingency fund amounts included in the Natural Gas and Electric portfolio budgets for each of the three years?
b) Where in the Cost Tables provided in Attachment 3 are these funds included?

RATIONALE FOR QUESTION:

To better understand Efficiency Manitoba's proposed Contingency Fund.

RESPONSE:

a) Contingency Fund amounts have not been included in the Natural Gas or Electric portfolio budgets in any of the three years. Section 7.4.1 of the Plan (PDF page 189 of 591) outlines the process for getting approval for use of the Contingency Fund, if necessary. Efficiency Manitoba has capped the potential for use of a Contingency Fund at $7 million over the three years of the Plan.

b) As noted above, the Contingency Fund is not included in the budget. As per Section 9 (l) (iii) of the Efficiency Manitoba Act, the establishment of a Contingency Fund is to be used to enable Efficiency Manitoba to take advantage of emerging opportunities that are not otherwise addressed in the plan which provides Efficiency Manitoba with important flexibility to pursue cost effective energy savings opportunities to meet

legislated targets. As these emerging opportunities are not identified, they do not have associated budgets or savings attributed to them. Efficiency Manitoba has not applied contingency costs against the overall portfolio given these unknowns.

REFERENCE:

P 14 (PDF 118)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Is Enabling Strategies: Program Support and Education – per the budget tables in Attachment 3 intended to capture the Enabling Strategies activities discussed in Section 4, page 14, lines 151-158?
b) With reference to Section 4 and the sub-sections in Section A9, for each of Natural Gas and Electricity please provide a listing of the specific activities included under Enabling Strategies: Program Support and Education – per the budget tables in Attachment 3 and a breakdown of the costs. Also, please indicate whether this category of costs includes any activities not identified in Section A9.
c) Is Enabling Strategies: Innovation, Codes & Standards and Evaluation – per the budget tables in Attachment 3 intended to capture the Enabling Strategies activities discussed in Section 4, page 14, lines 165-172?
d) With reference to Section 4 and the sub-sections in Section A9, for each of Natural Gas and Electricity please provide a listing of the specific activities included under Enabling Strategies: Innovation, Codes & Standards and Evaluation – per the budget tables in Attachment 3 and a breakdown of the costs. Also, please indicate whether this category of costs includes any activities not identified in Section A9.
e) If not addressed above, please indicate where the costs associated with the CRM/DSM system are captured.
f) With the exception of evaluation costs, please explain why none of the cost of the other activities included in Enabling Strategies are included in the PACT program bundle level calculations.

RATIONALE FOR QUESTION:

RESPONSE:

a) Efficiency Manitoba believes this is an inadvertent repeat to question COALITION/EM I-44f.

b) Efficiency Manitoba believes this is an inadvertent repeat to question COALITION/EM I-44c.

c) Efficiency Manitoba believes this is an inadvertent repeat to question COALITION/EM I-44g.

d) Efficiency Manitoba believes this is an inadvertent repeat to question COALITION/EM I-44d.

e) Please see response to COALITION/EM I-44 a).

f) As the costs included in Enabling Strategies are support costs not specific to a program or offer, these costs are not allocated to PACT costs at the program bundle level. These costs are only included as PACT at the portfolio level since they support the overall portfolio of programs.

REFERENCE:

20-21 (PDF 223-224)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A2, pp. 20-21, EM explains how electric targets were developed.

QUESTION:

a) Please provide all assumptions and calculations, used to derive the values provided in Table A2.1. Please provide them in an Excel file with formulae intact. As part of the response please provide references to support the values used for the adjustments and the relevant supporting documents if not already part of the record for this proceeding.
b) The savings targets in Table A2.1 are "at generation". Please provide the comparable values at customers' meters, including all assumptions (and the basis for those assumptions) used to convert savings at generation to savings at customers' meters.

RATIONALE FOR QUESTION:

To better understand how "naturally occurring efficiency" due to codes and standards implementation is reflected in the load forecast used as the basis for EM's savings projections, and obtain data, assumptions and calculations upon which Efficiency Manitoba developed the electric targets in its Plan.

RESPONSE:

a) Please see response to PUB/EM I-45c.

b) Providing the comparable values as shown in Table A2.1 (2020/23 Efficiency Plan, Section A2.2.2, p. 224 of 591) at customers' meter will not yield any difference to the resulting electric portfolio included in the Plan. Re-producing the Table A2.1, all electrical energy savings, and the program administrator cost test metrics on an "at-meter" basis would require an extensive amount of effort to complete and as such

Efficiency Manitoba has determined there is not adequate time to complete this request.

Please see the response to MIPUG/EM I – 15c) (iii) for the basis for the assumptions used to determine customer savings at generation.

REFERENCE:

22 (PDF 225)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A2, p. 22, EM states that "net energy savings are a function of projected sales or program participation."

QUESTION:

a) How does EM define "net savings"?
b) Please explain how net energy savings would be a function of projected sales.
c) Please explain how net energy savings would be a function of program participation?

RATIONALE FOR QUESTION:

To better understand how Efficiency Manitoba defines net savings as the term relates to EM's program savings projections.

RESPONSE:

a) Efficiency Manitoba defines net savings as the difference in energy consumption with the program in place versus what consumption would have been without the program in place.
b) The statement that net energy savings are a function of projected sales in the 2020/23 Efficiency Plan, Section A2, p. 225 of 591 implies that net program energy savings are related to and change with the level of projected sales.
c) The statement that net energy savings are a function of program participation in the 2020/23 Efficiency Plan, Section A2, p. 225 of 591 implies that net program energy savings are related to and change with the forecast level of program participation.

REFERENCE:

25 (PDF 228)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A2, p. 25, EM describes how it estimated the value of electric system benefits. The discussion appears to reference just the value of avoided energy and the value of avoided winter peak capacity.

QUESTION:

a) Is that correct? If not, what other electric system benefits are included?
b) Was a value associated with avoided transmission and distribution (T&D) costs included in the cost-effectiveness analysis? If not, why not?
c) Was the value of risk mitigating effects of efficiency included in the cost-effectiveness analysis? If not, why not?
d) Was the value of avoided credit and collection costs (associated with efficiency investments enabling more customer to afford their energy bills) included in cost-effectiveness analysis? If not, why not?
e) Regarding T&D line loss rates used to convert savings at customers' meters to savings at generation for the purpose of estimating the value of avoided energy and capacity costs:
i. What rate was used for valuing energy savings?
ii. What rate was used to value peak demand savings? If the rate used was the same as for valuing energy savings, why is that given that losses grow largely exponentially with load?
iii. What was the basis of or source for the line loss rates used?
iv. Where the line loss rates used – either for valuing energy or valuing capacity – average loss rates or marginal loss rates? If they are average loss rates, please explain why average loss rates were used instead of marginal loss rates when efficiency changes losses on the margin.

RATIONALE FOR QUESTION:

To better understand the value of the electric system benefits that are included in Efficiency Manitoba's cost-effectiveness analysis so that review of the Plan is based on an accurate understanding of the benefits that were included.

RESPONSE:

a) Please see response to DAYMARK/EM I-20a.

b) Please see response to DAYMARK/EM I-20a.

c) Please see response to DAYMARK/EM I-20a. The determination of marginal values is done independently by Manitoba Hydro, and Efficiency Manitoba accepts and applies the values as received.

d) Please see response to DAYMARK/EM I-20a. The determination of marginal values is done independently by Manitoba Hydro, and Efficiency Manitoba accepts and applies the values as received.

e) Please see response to DAYMARK/EM I-20a. The determination of marginal values is done independently by Manitoba Hydro, and Efficiency Manitoba accepts and applies the values as received.

REFERENCE:

25 (PDF 228)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A2, p. 25, EM describes how it estimated the value of electric system benefits. The discussion appears to reference just the value of avoided commodity "as well as natural gas purchasing and transportation costs."

QUESTION:

a) Please explain what avoided natural gas purchasing costs are.
b) Was a value associated with avoided transmission and distribution (T&D) costs included in the cost-effectiveness analysis? If not, why not?
c) Was the value of risk mitigating effects of efficiency included in the cost-effectiveness analysis? If not, why not?
d) Was the value of avoided credit and collection costs (associated with efficiency investments enabling more customer to afford their energy bills) included in cost-effectiveness analysis? If not, why not?

RATIONALE FOR QUESTION:

To better understand the value of the electric system benefits that are included in Efficiency Manitoba's cost-effectiveness analysis so that review of the Plan is based on an accurate understanding of the benefits that were included.

RESPONSE:

a) Refer to page 232, Appendix A, Section A2, p.29 which explains natural gas marginal benefits include avoided cost of purchasing natural gas and avoided transportation costs.
b) The requested information is determined by Centra Gas. Efficiency Manitoba is not in possession of this information and is not able to provide a more detailed response.

c) The requested information is determined by Centra Gas. Efficiency Manitoba is not in possession of this information and is not able to provide a response.

d) The requested information is determined by Centra Gas. Efficiency Manitoba is not in possession of this information and is not able to provide a response.

REFERENCE:

1 (PDF 248)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A3, p. 1, Table A3.1, EM provides "Annual Program Electric Savings" in GWh.

QUESTION:

a) Are these expressed in "gross" terms (i.e. before adjusting for free riders and spillover effects) or in "net" terms (i.e. including adjustments for free riders and spillover?
b) If the savings values are net of free ridership and spillover effects, please provide all net-to-gross assumptions for each program and explain how were such effects estimated?
c) What is EM's understanding regarding whether savings targets are in gross or net savings terms? What is the basis for that understanding?

RATIONALE FOR QUESTION:

To clarify whether Efficiency Manitoba is referring to gross or net savings and to understand the assumptions that EM makes regarding free ridership and spillover. .

RESPONSE:

a) The savings presented in Table A3.1 includes adjustments for free riders and free drivers (spillover).

b) Net-to-gross assumptions by measure are presented in the attachment to Daymark/EM I – 13. For measures that were included from Manitoba Hydro's historical Demand Side Management activities, free rider/driver rates were derived from independent External Evaluations. For new measures, free rider/driver rates were derived from discussion with industry, other utilities, and independent groups such as E Source – a research and consulting firm in the Demand Side Management industry.

c) Efficiency Manitoba's understanding is that mandated savings targets are net of free riders and free drivers. The basis of this understanding is derived from the Efficiency Manitoba Regulation, Section 8(1) as well as the definition of net savings provided on page 3 of the Efficiency Manitoba Act.

REFERENCE:

4 (PDF 251)

PREAMBLE TO IR (IF ANY):

In Appendix A, Section A3, p. 4, Table A3.2, EM provides "Annual Gross Program Natural gas Savings" in millions of m3.

QUESTION:

a) What does "gross" mean in this context?
b) Are these values net of or before any adjustment for impacts of free ridership and spillover?
c) If the savings values are net of free ridership and spillover effects, please provide all net-to-gross assumptions for each program and explain how were such effects estimated?
d) What is EM's understanding regarding whether savings targets are in gross or net savings terms? What is the basis for that understanding?

RATIONALE FOR QUESTION:

To clarify what is meant by "Annual Gross Program Natural Gas Savings" and to understand the assumptions that EM makes regarding free ridership and spillover.

RESPONSE:

a) The term "gross" in "Annual gross program natural gas savings (million m3)" in the first row of Table A3.2 (2020/23 Efficiency Plan, Appendix A – Section A3, p.251 of 591) refers to the total net natural gas program savings prior to the impact of interactive effects from the electric portfolio. This term was used to distinguish the natural gas savings resulting from the natural gas portfolio from the net natural gas savings after electric interactive effects. Efficiency Manitoba recognizes the confusion the use of this term may have caused given that the term 'gross' savings is more often describing savings prior to the impacts of free ridership and spillover.

b) Yes, these savings are natural gas savings net of impacts from free rider and spillover impacts.

c) Net-to-gross assumptions by measure are presented in columns I and J (with spillover presented as free drivers) of the attachment (DAYMARK/EM I-13d-e-Attachment) to DAYMARK/EM I – 13. For measures that were included from Manitoba Hydro's historical Demand Side Management activities, free rider/driver rates were derived from independent External Evaluations. For new measures, free rider/driver rates were derived from discussion with industry, utilities, and other sources.

d) Efficiency Manitoba's understanding is that mandated savings targets are net of free riders and free drivers (spillover). The basis of this understanding is derived from the Efficiency Manitoba Regulation Section 8(1) as well as the definition of net savings provided on page 3 of the Efficiency Manitoba Act.

REFERENCE:

14 (PDF 261) Appendix A, Section A3

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide all assumptions and calculations underpinning the levelized costs provided in Figure A3.7 for each electric program. Please provide them in an Excel file with all formulae intact.

RATIONALE FOR QUESTION:

To obtain the data needed to assess the reasonableness of the projected levelized costs for each electric program. We note that DAY/EM-I-60 asks a similar question. To the extent there is confidential information contained in the response to Daymark, please provide a version of the response for the public record.

RESPONSE:

Efficiency Manitoba notes that the requested calculations contain commercial sensitive information and have been provided to the IEC for their review under the terms of a non-disclosure agreement. Efficiency Manitoba understands that the IEC is examining this information under its Terms of Reference for this public review process.

REFERENCE:

18 (PDF 265)

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide all assumptions and calculations underpinning the levelized costs provided in Figure A3.10 for each gas program. Please provide them in an Excel file with all formulae intact.

RATIONALE FOR QUESTION:

To obtain the data needed to assess the reasonableness of the projected levelized costs for each gas program. We note that DAY/EM-I-61 asks a similar question. To the extent there is confidential information contained in the response to Daymark, please provide a version of the response for the public record.

RESPONSE:

Efficiency Manitoba notes that the requested calculations contain commercial sensitive information and have been provided to the IEC for their review under the terms of a non-disclosure agreement. Efficiency Manitoba understands that the IEC is examining this information under its Terms of Reference for this public review process.

REFERENCE:

3, lines 45-50 (PDF 275)

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A4, p. 3, lines 45-50, EM states that rebates for a variety of efficiency measures have been available from Manitoba Hydro "for many years and have seen high levels of participation" and that "due to the high market penetration of these initiatives, the incremental acquisition cost to reach customers who have not yet participated may be higher than previous initiatives."

QUESTION:

a) For each listed measure (lighting, insulation, refrigerator and freezer retirements and water and energy saver kits), please provide historic participation by year in Manitoba Hydro's programs.
b) For each listed measure, please provide EM's best estimate of the "high market penetration" rate achieved to date.

RATIONALE FOR QUESTION:

To obtain details needed to assess EM's statement that a variety of measures have had high levels of participation and high market penetration.

RESPONSE:

a) The table below indicates historical participation in Manitoba Hydro's programs:

Program	2004 / 2005	2005 / 2006	2006 / 2007	2007 / 2008	2008 / 2009	2009 / 2010	2010 / 2011	2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017 / 2018	2018 / 2019
LED Lighting (number of lighting products)											433,556	458,890	828,331	1,150,435	340,375
Home insulation (number of homes)	459	1,433	5,211	4,551	4,578	5,093	3,923	3,682	2,894	2,266	2,563	2,103	1,791	1,941	1,322
Refrigerator /Freezer Retirements (number of appliances)								8,437	8,298	8,982	9,195	10,710	9,895	8,023	7,366
Water & Energy Saver Kits (number of kits)							38,448	33,411	27,338	19,659	20,521	22,852	19,997	13,288	9,624

b) The current estimated market penetration is detailed below:

Program	Market Penetration	Notes
LED Lighting	Approximately 56%	Please see the response to Coalition-EM I-72d for additional information.
Home Insulation	Approximately 45%	Estimated market penetration derived by taking total number of Houses that participated to the end of 2018/19 by the overall target market. Includes estimated number of participants for 2018/19.
Refrigerator/Freezer Retirements	Approximately 20%	Estimated market penetration is based on the number of units collected since program inception and average number of available eligible appliances in the market over program offer period.
Water and Energy Saver Program	Approximately 58%	Estimated market penetration derived by taking total number of participants to the end of 2018/19 by the overall target market. Includes estimated number of participants for 2018/19.

REFERENCE:

6-8 (PDF 278-280)

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Section A4, pp. 6-8, Table A4.1: for each measure listed for each program, please provide:

a) EM's planned financial incentive (or rebate) offer
b) The percentage of incremental measure cost that the financial incentive or rebate offer is expected to cover.

RATIONALE FOR QUESTION:

To obtain details underlying the financial incentive or rebate offered for programs, in order to assess the reasonableness of EM's projections regarding participation and program costs.

RESPONSE:

a) Please see column K in the table attached to DAYMARK/EM I – 13d for the planned financial incentives by measure. These incentives may be subject to change over the lifetime of an offer.

b) Please column L in see the table attached to DAYMARK/EM I – 13d for the percentage of incremental cost that the financial incentive is expected to cover.

REFERENCE:

Appendix A, Section A4

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A4, p. 8, line 101: EM states that approximately 40% of residential customers heat their homes with electricity.

QUESTION:

a) What fraction of those electrically-heated homes are single family detached vs. multifamily (attached) vs. apartments?
b) What fraction of those electrically-heated homes use electric resistance furnaces vs. electric resistance baseboard/strip heat vs. air source heat pumps vs. ground source heat pumps?
c) Is the prevalence of electric heat higher among indigenous households? Please provide the percent of indigenous households with electric heat if available.

RATIONALE FOR QUESTION:

Details about the breakdown of residential customers who heat their homes with electricity are needed to assess the reasonableness of EM's proposed programs for these customers.

RESPONSE:

The source of the information relied upon by Efficiency Manitoba is the 2017 Manitoba Hydro Residential End Use Survey (2017 REUS). Please see the response to PUB/EM I – 8 for a link to the publicly available document.

a) The number and percentage of homes with electric heating is shown below.

Dwelling type – electric heat	**#**	**%**
Single family detached	142,312	74.3%
Multifamily (attached)	18,309	9.6%
Apartments	31,018	16.2%
Total	191,639	100%

*source: PDF page 15 of the 2017 REUS

b) The number and percentage of homes by heating system is shown below. Please note that the total of 190,779 excludes 859 homes electrically heated homes which have a supplemental propane furnace.

Heating system type	**#**	**%**
Electric baseboard	51,150	26.8%
Electric furnace	126,463	66.3%
Electric boiler	4,728	2.5%
Geothermal heat pump	7,556	3.9%
Air source heat pump	882	0.5%
Total	190,779	100%

*source: PDF pages 38 & 39 of the 2017 REUS

c) The heating source for customers of Indigenous self-declared ancestry are shown below.

Indigenous self-declared ancestry	**#**	**%**
Electric heating	31,001	60.3%
Natural gas heating	15,289	29.7%
Other	1,462	2.8%
Shared (no heat on bill)	3,677	7.2%
Total	51,492	100%

*source: PDF page 34 of the 2017 REUS

REFERENCE:

1, lines 9-12 (PDF 313)

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A5, p. 1, lines 9-12: EM states that its income qualified program will offer "free insulation upgrades, a high efficiency natural gas furnace for $9.50 per month for five years or a $3000 rebate for a high efficiency natural gas boiler, and fee energy-efficient devices such as LED bulbs, energy-efficient showerheads , and faucet aerators."

QUESTION:

a) What level of efficiency (AFUE) would the efficient furnace be?
b) What would the expected annual gas bill reduction from the efficient furnace be (in dollars)? Please provide the basis for the estimate provided.
c) Why is a monthly co-payment required for an efficient furnace but a rebate is offered for an efficient boiler? Why the difference between heating system types? Why not offer the option of either a monthly co-payment or a fixed rebate for both equipment types?
d) Why are there not similar offers for efficient electric heat pumps for low income customers who heat primarily with electricity?

RATIONALE FOR QUESTION:

To better understand the basis for Efficiency Manitoba's proposed income qualified program.

RESPONSE:

a) The high efficiency furnace available under the Income Qualified Offer is a minimum efficiency of 94% (AFUE).

b) Please see the table provided in the response to COALITION/EM I-104 for the estimated average annual bill reduction. The assumptions for this estimate are also included in the table.

c) The incentive structure for Income Qualified Offers is a continuation from Manitoba Hydro's Affordable Energy Program (which was mandated through Order 85/13). Efficiency Manitoba has decided to continue with furnace and boiler replacements using the same incentives. Please see the response to PUB/EM-10a for a description of why the Furnace Replacement Program is being continued.

The rebate structure is part of the program's marketing/pricing strategy to help the customer evaluate the impacts to their monthly payments. For furnace the placements, the monthly payment of $9.50 per month is promoted as a loan payment based on $570 over a five year term at zero percent interest to the owner. The customer co-payment is $570 which is collected over a 60 month timeframe. Boiler upgrades are very infrequent, can be quite complex, and that the cost can vary greatly, typically ranging anywhere from $6,000 to $13,000. The incentive of $3,000 leaves the customer's remaining balance after the incentive ranging from $3,000-$10,000. While some customers choose to make the full payment upfront, the program also offers additional flexible low-interest financing arrangements which can be amortized over 5, 10, or 15 years to ensure loan payments are manageable for a lower income customer.

d) The installation of heat pumps is available to all customers through Home Renovation Offers but has not been considered a measure under the Income Qualified portfolio because of the high upfront cost required for the installation of heat pumps and the observed demographics of the lower income market (i.e. predominantly gas available areas). The goal of Income Qualified Offers is to facilitate energy efficiency upgrades to reduce energy bills, while minimizing the financial burden. Installation of a heat pump would result in a significant contribution on the part of a customer and, in a situation where it is replacing a gas heating system, not result in significant bill impacts. The Community Geothermal Program however does address the installation of heat pumps in First Nation Communities as a result of their predominantly high usage of electricity as their home heating source.

REFERENCE:

6 (PDF 334)

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Section A6, p. 6, Table A6.1: for each measure listed for each program, please provide:

a) EM's planned financial incentive (or rebate) offer
b) The percentage of incremental measure cost that the financial incentive or rebate offer is expected to cover.

RATIONALE FOR QUESTION:

To obtain details underlying the financial incentive or rebate offered for programs, in order to assess the reasonableness of EM's projections regarding participation and program costs.

RESPONSE:

a) Please see the response to Daymark/EM I – 13d for the planned financial incentive per measure.

b) Please see the response to Daymark/EM I – 13d for the percentage of incremental measure cost that the financial incentive is expected to cover.

REFERENCE:

7, lines 112-115 (PDF 335)

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A6, p. 7, lines 112-115, EM states that average energy use among indigenous communities on-reserve "has historically been higher than that of other Manitobans" and "this higher than average use ranges from 11 percent to 21 percent".

QUESTION:

a) What do the 11% and 21% values represent in this statement? Is EM saying that the average consumption per indigenous on-reserve home is 11% to 21% higher than the average of other Manitobans? If not, please explain.
b) What is the average annual electricity consumption (kWh) per on-reserve home?
c) What fraction of the annual electricity consumption (kWh) per on-reserve home is associated with space heating?

RATIONALE FOR QUESTION:

To better understand energy use among indigenous communities on-reserve in the context of demand-side management.

RESPONSE:

a) Confirmed. EM states that the average consumption per indigenous on-reserve home is 11% to 21% higher than the average of other Manitobans.

b) For the average weather adjusted annual residential consumption for First Nation on-reserve home please the attachment to response MKO/EM I-13.

c) Efficiency Manitoba estimates that 55% to 65% of the annual heating consumption of on-reserve homes is associated with space heating.

REFERENCE:

16 (PDF 344)

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A6, p. 16, EM states that is Community Geothermal Program will differ from traditional rebate offers by instead paying for each unit of energy saved through a "Community Driven Outcomes Contract model".

QUESTION:

Why is this model preferable to the more traditional rebate offer?

RATIONALE FOR QUESTION:

To get clarification regarding the model proposed for the Community Geothermal Program and to understand the basis of the implication that EM believes it is a more appropriate approach than a traditional rebate offer.

RESPONSE:

Please see response to PUB-EM-I-6 for a full description of the CDOC model. With this model, the interests of multiple parties (outcomes buyers) in the several community-defined outcomes of an initiative are leveraged to create a larger pool of funding. In the specific instance of the Community Geothermal Program, the model is preferred as the rebate offered by Manitoba Hydro in the past only paid for a portion of the installed system and the remainder was financed on the utility bill of the home occupant. Under the CDOC model, the leveraged funding results in no payment being required by the home occupant so bill savings are realized immediately.

REFERENCE:

4-8 (PDF 359 - 363)

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Section A7, pp. 4-8, Table 7.1:

a) EM appears to be proposing to promote and rebate T8 ballasts and T8 lamps to small businesses. Given the much more substantial savings possible from conversions to LED lamps or fixtures (when LED lamps cannot be retrofitted into a T8 fixture), why is EM proposing to promote T8s?

b) It appears as if EM is proposing only "downstream" rebates or incentives to the end use customer. Is that correct, or is EM planning on any "midstream" or "upstream" incentives?

c) If EM is proposing only "downstream" rebates or incentives in its plan, did it consider "midstream" and/or "upstream" incentive/program designs for lighting or any other categories of measures? If not, why not? If so, why did it reject them in favour of just downstream offerings? In responding to this question, please provide any quantitative analyses (e.g. of costs, participation rates, savings and/or other metrics of potential interest) that were performed by EM when it examined trade-offs between downstream and upstream offers.

d) The table does not specifically list either LED light fixtures with integrated controls or networked lighting controls (though it does state that "lighting controls" are among a category of measures to be promoted under the "Renovation" program).

   I. Does EM plan to promote such measures?

   II. If not, did EM analyze the potential cost, savings and cost-effectiveness of such measures? If not, why not? If so, please provide such any such analyses.

   III. If EM does plan to promote such measures, please explain which measures would be promoted, how they would be promoted, what financial incentives would be offered, and what the forecast participation rates would be.

RATIONALE FOR QUESTION:

To get further clarification regarding the initiatives proposed by Efficiency Manitoba, the extent to which alternatives were considered, and EM's rationale for selecting its proposed approaches.

RESPONSE:

a) Small business customers are offers two linear lamp options, namely low wattage T8 energy efficient (EE) lamps, and T8-LED lamps. Although Efficiency Manitoba will not actively promote low wattage T8 EE lamps, it exists as an option for unique scenarios wherein which T8-LED lamps may not be suitable for the customer's setting thus contravening the Manitoba Electrical Code. Examples of such settings include those requiring vapour tight T8 fixtures where a risk associated with sparking exists creating potential fire hazards. Failure to offer low wattage T8 energy efficient (EE) lamps in these scenarios, would result in the customer simply maintaining existing inefficient lighting systems.

   T8 ballasts are required to retrofit select existing fluorescent fixtures to operate T8-LED lamps. Not offering T8 ballasts to these customers, would result in the customer simply maintaining existing inefficient lighting systems.

b) Efficiency Manitoba's Plan proposes "midstream" incentives for condensing gas boilers, steamers, fryers, convection ovens, dishwashers, griddles, and hot food holding cabinets.

c) Midstream incentives were considered for lighting; however it was determined as not being needed due to an already exceptionally high level of support from the Manitoba lighting industry towards promoting energy efficient lighting. An advantage of downstream incentives includes the ability to collect project-specific existing and proposed system information from the customer, allowing Efficiency Manitoba to calculate highly accurate energy savings over base case.

d) Efficiency Manitoba will promote all forms of lighting controls including integrated controls and networked lighting controls. Control systems will be promoted through industry training and education sessions intended to increase awareness and educate on the benefits of controls. The proposed incentive rate for controls is up to $0.20/kWh of annual savings, up to a maximum of 100% of material costs. It is estimated that there would be 84 control projects in year 1, 77 in year 2, and 71 in year 3.

REFERENCE:

45 (PDF 400)

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Section A7, p. 45, EM states that the Load Displacement Program promotes CHP installations where the input fuel is an on-site waste, by-product or biomass resource.

QUESTION:

a) Please confirm that customers who wish to use utility provided natural gas could not participate in the program. If not confirmed, please explain the conditions under which utility-provided natural gas CHP systems could be supported by the program.
b) Do the "biomass" resources used as an input fuel have to be renewably produced?
c) Will EM require a minimum system efficiency for CHP systems to be eligible to participate in its program? If so, what is the minimum efficiency? If not, why not?

RATIONALE FOR QUESTION:

To request further clarification regarding the Load Displacement Program, which promotes CHP installations where the input fuel is an on-side waste, by-product or biomass resource.

RESPONSE:

a) Confirmed, utility provided natural gas is not an eligible fuel source for the Load Displacement Program.

b) The Load Displacement Program does not require that the biomass resource be renewably produced.

c) Efficiency Manitoba has not stated a minimum system efficiency. The conversion system selection and related efficiency is a function of the available fuel source. The available fuel

source, quality and energy content will vary based on a customer's readily available low-cost industrial waste and by-product streams or available biomass.

REFERENCE:

20 (PDF 435)

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Section A9, p. 20, Table A9.1:

a) Please provide the specific changes to codes and standards associated with each row in the table for which savings are attributed.
b) Is EM assuming 100% attribution for each of the codes and standards listed?
c) If EM is assuming it can claim 100% of the savings credit for each code and standard listed, is EM suggesting that none of the codes or standards would have been adopted absent its participation in code and/or standard setting processes? If not, what is the basis for the 100% savings claim?
d) The savings claims for the first year of the plan – 2020/2021 – are quite substantial. Indeed, they are only slightly less than those claimed for the next two years. Given that codes and standards typically take a fair amount of time to develop and get enacted, how is it possible that EM will have had such a substantial impact on codes and standards in effect in its very first program year?
e) Does EM include savings in its projections for contributing to increased compliance with any codes that have been adopted by the Province, or are all savings associated with the adoption of increased codes?

RATIONALE FOR QUESTION:

To better understand the basis of Efficiency Manitoba's projected savings associated with changes to codes and standards.

RESPONSE:

a) Please see response to PUB/EM I-39.

b) Please see response to COALITION/EM I-71d.

c) Please see response to COALITION/EM I-71d.

d) Please see response to COALITION/EM I-71b.

Please see response to COALITION/EM I-71c. Assistance in improving the rate of compliance in the energy efficiency components of building codes is contemplating in the Efficiency Manitoba Regulation 119/2019 Section 7 (e). In years 2 and 3 of the Plan, Efficiency Manitoba is proposing to implement a code compliance strategy that will improve the rate of compliance to energy code in commercial new construction from 50 percent to 75 and 85 percent respectively. Planned savings forecasted for the compliance initiatives increases the savings from commercial new construction from 18.7 GWh and 0.52 million m3 in year 1 to 31.8 GWh and 0.88 million m3 in year 3.

REFERENCE:

(PDF 507 - 518) Appendix A Attachment 3 (Technical Tables)

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Gas savings from Residential Product Rebate Program are forecast to decline from 0.55 million m3 in 2020/21 to 0.19 million m3 two years later. Why are savings declining so much and so fast?
b) Gas savings from the Commercial and Industrial High Performance Buildings Program are forecast to increase from 0.61 million m3 in 2020/21 to 0.96 million m3 in 2021/22, then decline to 0.71 million m3 in 2022/23. Why are savings expected to ramp up and then ramp down? Why wouldn't savings gradually increase over time as the program gains market traction?
c) Are the interactive effects (negative gas savings) related to interactions between different gas efficiency measures (e.g. efficient building envelops and efficient gas heating systems) or between efficient electric measures (e.g. lighting) and gas consumption, or both?
d) Electric savings from the C&I Renovation Program are forecast to decline from 110.7 GWh in 2020/21 to 95.5 GWh in 2022/23 (costs are similarly declining). Why? Why wouldn't savings (and spending) ramp up over time as the program gains market traction?
e) Electric savings from the Commercial and Industrial High Performance Buildings Program are forecast to increase from 6.0 GWh in 2020/21 to 8.8 GWh in 2021/22, then decline to 7.2 GWh in 2022/23. Why are savings expected to ramp up and then ramp down? Why wouldn't savings gradually increase over time as the program gains market traction?
f) Electric savings from the Commercial and Industrial Custom Program are forecast to decline from 24.2 GWh in 2020/21 to 17.9 GWh in 2021/22, then ramp up to 28.6 GWh in 2022/23. Why are savings expected to ramp down and then ramp back up? Why wouldn't savings gradually increase over time as the program gains market traction?

RATIONALE FOR QUESTION:

To better understand Efficiency Manitoba projected savings and the basis for year-to-year variations in projected savings for specific programs when those variations are significant.

RESPONSE:

a) Smart thermostats account for a large percentage of the Product Rebate bundle's natural gas savings. The main reason for the decline in saving is because rebates for smart thermostats will be offered in 2020/21 and 2021/22, but not in 2022/23.

b) Savings from the New Buildings Program may fluctuate naturally year-over-year, reflecting market variability with respect to the number of new construction starts in Manitoba. An additional contributing factor to fluctuation in savings is program enrollment from very large construction projects that only occur periodically in Manitoba. It should also be noted that as a result of the lengthy lead time between the initial planning (including program enrollment) through to the occupancy of a commercial new construction project (when savings are claimed), savings achieved during the entire time frame of the 2020/23 Efficiency Plan are largely known in current day. A new, updated version of the New Buildings Program is planned in response to anticipated future building code requirements; however, increased savings from this new version are not realized within the time frame of this Plan.

c) Interactive effects as shown in the 2020/23 Efficiency Plan, Attachment 3 - Technical Tables, p.507 of 591, (negative gas savings) relate to interactions between efficient electric measures (e.g. lighting) and gas consumption, not between different gas efficiency measures.

d) The decrease in electric savings for the Renovation Program are due to an anticipated decrease in commercial lighting projects. Manitoba Hydro's existing Commercial Lighting Program already has great popularity in the market, which is expected to carry over to Efficiency Manitoba. With the popularity of LED for business customers having

been realized for a number of years, it is expected that the number of participants will gradually decline after the first year due to the saturation of the market which has been occurring over the last number of years.

e) Please see response to b) above.

f) Year 1 (2020/21) includes electric savings associated with the completion of a significant industrial plant expansion, plus other in-progress industrial applications. Year 2 and 3 program saving estimates are based on historical average participation numbers and savings. Year 2 and 3 does include savings for still-to-be defined significant industrial projects, and savings from the Strategic Energy Manager Cohort programs. It should also be noted that as a result of the lengthy lead time between planning for a larger commercial or industrial project through to completion (when savings are claimed), savings achieved during the entire time frame of the 2020/23 Efficiency Plan are largely known in current day.

REFERENCE:

8 (PDF 560) Appendix A,, Attachment 5

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 8, EM states that it will – "with the advice of the EEAG" – select one or more independent third party evaluators.

QUESTION:

a) Please elaborate on the role of the EEAG. Specifically, will it:
   I. Be provided draft scopes of work and/or draft RFPs for the solicitation of evaluators for comment and recommendations before they are issued?
   II. Be provided RFP responses from bidders and invited to "score" them as part of a selection process or "selection committee"?
   III. Once evaluators are selected, be invited to engage with EM and the evaluators in evaluation planning for the portfolio of EM programs, scoping of specific evaluation projects, and development of evaluation methodologies?
   IV. Be invited to review and provide feedback on draft evaluation work products produced the evaluators?
b) To the extent that the EEAG will not be asked to play any of the roles discussed in response to part "a" of this question, please explain why not?
c) How will the evaluators' work be managed so as to ensure true independence?
d) Has EM considered the possibility of providing the PUB staff, the EEAG and/or other parties a "veto" over selection of the independent evaluators as a means of ensuring their true independence? If so, what conclusion did it reach on those options? If not, would it consider such options? Please explain the rationale for the answer(s) provided.

RATIONALE FOR QUESTION:

To better understand the role of the EEAG as it relates to evaluation, any systems that will be in place to support true independence of the evaluators, as well as the process for the external evaluator's work to proceed.

RESPONSE:

a) Elaborated response below:
   I. As per the Efficiency Manitoba Act Section 27 (3) (b), the EEAG will provide advice to Efficiency Manitoba on the selection of the assessor and the terms of reference for the independent assessment.
   II. The establishment of a selection committee is a role that can be discussed with interested members of the EEAG.
   III. Evaluation planning and the development of evaluation methodologies is not likely something that Efficiency Manitoba will request of EEAG members. Providing meaningful input into very technical subject matter is an unreasonable expectation of EEAG members. The third-party evaluator will be selected for their experience and expertise and therefore Efficiency Manitoba will accept the recommendations made on both evaluation planning and evaluation methodologies.
   IV. Review and feedback on draft evaluation work products could be an additional role offered to the EEAG members.

b) Please see response to a) III above.

c) The assessor's work will be managed by the VP of Finance and Corporate Performance to be separate and distinct from the program design function of Efficiency Manitoba.

d) Given that the EEAG will be part of the selection process of the independent assessor as per a) I. above, Efficiency Manitoba does not believe that a veto from any party over the selection will serve to ensure independence, more so just delay the process of selection. Efficiency Manitoba is however, aware of one other Canadian jurisdiction who follows a process to provide an additional layer of independent verification which involves the

Public Utilities Commission hiring an independent expert to review the work of the third-party assessor. This additional layer comes with additional costs that have not been contemplated in the evaluation budget outlined on page 187 of the submission.

REFERENCE:

11 (PDF 563) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 11, EM states that for programs for which an impact evaluation has not been conducted in the first year of its three year plan, "a retrospective adjustment should be applied to previously verified savings…"

QUESTION:

a) Is EM aware of any other jurisdictions that take this approach for programs other than those performing custom savings calculations (e.g. C&I Custom or CHP programs), rather than just applying evaluation results to future years? If so, please identify all such jurisdictions.
b) This approach could mean that in the third year of the plan EM has found that it has acquired either significantly more or significantly less savings than previously assumed, with only a year to catch up if savings were overstated in previous years. How will EM manage the uncertainty inherent in this approach?

RATIONALE FOR QUESTION:

To better understand Efficiency Manitoba's proposed approach for evaluation for programs for which an impact evaluation has not been conducted in the first year of its three year plan.

RESPONSE:

a) Efficiency Manitoba is not aware of any other jurisdictions taking this approach. This situation is not very common as it only occurs in the first few years of an energy efficiency organization. Once every program has received one full impact evaluation there is no need to apply evaluation results retroactively; retroactive adjustments are only applied to program years prior to the first full program impact evaluation.

b) This retroactive adjustment will only occur prior to the first full impact evaluation, and Efficiency Manitoba will conduct a full impact evaluation during the first year of the Plan as much as possible. Programs with higher savings uncertainty or complex or custom savings calculation methodologies will have a full impact evaluation conducted in the first year. This will manage the uncertainty in this approach by minimizing the magnitude of retroactive adjustments. This overall approach was selected to balance the level of rigor and the cost-effectiveness of the evaluations.

REFERENCE:

12 (PDF 564) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 12, EM states that in evaluating the impacts of codes and standards it must first develop a "baseline".

QUESTION:

a) Would EM agree that such baselines should be the average level of efficiency of a product or building that would have been purchased absent the code or standard upgrade (rather than the lowest level of efficiency under previous codes or standards)? If not, why not?
b) If EM does not agree that such baselines should be the average level of efficiency of a product or building that would have been purchased absent the code or standard upgrade, what does EM believe, or assume, the baselines should be?

RATIONALE FOR QUESTION:

To clarify Efficiency Manitoba's proposed approach with respect to evaluating the impacts of codes and standards.

RESPONSE:

a) Efficiency Manitoba agrees that codes and standards baselines should be the average level of efficiency of a product or building that would have been purchased absent the code or standard upgrade. The codes and standards baseline will be determined by Efficiency Manitoba's independent assessor that will be selected through a tendering process as outlined in the response to PUB/EM I-36. The methodology used by the assessor to determine the codes and standards baseline will be based on industry-accepted protocols as outlined in the response to DAYMARK/EM I-52.

b) Not applicable.

REFERENCE:

12 (PDF 564) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 12, EM states that a "qualitative assessment of Efficiency Manitoba's or Manitoba Hydro's contributions should also be part of the codes and standards evaluation."

QUESTION:

a) Is it EM's position that Manitoba Hydro's engagement in codes and standards development, by itself, could be sufficient for EM to claim savings towards its goals? If so, what is the basis for that conclusion?
b) Does EM believe that it can claim savings from codes and standards that are already in existence prior to the launch of its 2020/21 program year? Or that it can only claim savings from new codes and standards whose development it helped influence?
c) To the extent that EM believes it can claim savings from codes and standards that are already in existence, under what conditions can such savings be claimed? Would EM have to demonstrate that it increased compliance with such codes and standards?
d) Is it EM's position that it can claim 100% credit or attribution for savings from new codes and/or standards as long as it had some material influence on the outcome, rather than claiming on a portion of the credit? If so, how is that consistent with the notion that EM's savings claims should be based on "net savings"?
e) How does EM define "material impact" for the purpose of determining whether it can claim savings from new codes and standards? Specifically, would EM's influence have to have been sufficient such that the code and standard would not have been put in place at the same efficiency level absent EM's influence?
f) How does EM expect that the qualitative assessment of its material impact will be undertaken?
g) When it has been determined that a material impact on the development or advancement of a code or standard has been achieved by EM, how will the evaluators determine the number of years (of new product sales or new building construction) for

which will EM be able to claim savings from such codes and standards?

RATIONALE FOR QUESTION:

To clarify Efficiency Manitoba's proposed approach with respect to savings achieved through codes and standards.

RESPONSE:

a) Efficiency Manitoba recognizes that the there is no one way that that has been accepted by program administrators universally on the approach to claiming savings from codes and standards. Efficiency Manitoba believes that Manitoba Hydro's past engagement in codes and standards development along with Efficiency Manitoba's ongoing efforts towards continued development, implementation and compliance is sufficient to claim savings due to new activity in the market (ie. New buildings constructed or new appliances purchased in the Plan years) towards its targets. This will be verified by Efficiency Manitoba's third-party evaluator.

b) According to the Efficiency Manitoba Regulation Section 8 part 1 (c), Efficiency Manitoba can claim savings towards its target from a code, standard or regulation to which Efficiency Manitoba or Manitoba Hydro has made a material contribution. Therefore, Efficiency Manitoba plans to claim new savings due to new activity in the market (ie. New buildings constructed or new appliances purchased in the Plan years) from codes and standards that Manitoba Hydro influenced prior to the launch of its 2020/21 program year.

c) Efficiency Manitoba will rely on its third-party evaluator to provide expertise on assessing Efficiency Manitoba's material contribution towards savings from codes and standards. However, in instances of known compliance issues, Efficiency Manitoba has pro-rated savings due to building codes to adjust the savings downward.

d) It is Efficiency Manitoba's position that the appropriate attribution level will be determined for each code and standard based on the expertise of its third-party evaluator. Also, see response to part c).

e) Please see response to part c).

f) The methodology of the qualitative assessment of "material impact" will be developed by Efficiency Manitoba's third-party evaluator.

g) Please see response to part c).

REFERENCE:

19 (PDF 571) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 19, Table 4 lists Residential General Service Lighting as a market area for which there is "high savings potential" from Codes and Standards changes.

QUESTION:

a) Is it EM's position that it could have a material impact on the adoption of residential lighting standards? If so, what is the basis for that position?
b) If it is EM's position that it could have a material impact on residential lighting standards, what might be the nature of that impact?
c) For how many years does EM believe that any impact it might have on residential lighting standards would last? What is the basis for that conclusion?
d) What is the current socket saturation of screw-based LED lamps in Manitoban households, as well as the socket saturation for any of the past five years for which data are available? Please provide the source for any values provided.
e) What is the current Manitoba market share for screw-based LED Lamps (relative to halogen, CFL and/or other residential lamp types), as well as the market share for any of the past five years for which data might be available? Please provide the source for any values provided.

RATIONALE FOR QUESTION:

To better understand Efficiency Manitoba's position that Residential General Service Lighting is a market area for which there is "high savings potential" from Codes and Standards changes.

RESPONSE:

a) Code & standards savings for residential lighting included in the plan are attributed to federal minimum energy performance standards (MEPS) for general service lamps that came into effect in 2014. Manitoba Hydro influenced the adoption of this standard through its participation in the Strategic Lighting Initiative Committee (SLIC) - a committee created by Natural Resources Canada to support the development and implementation of the minimum energy performance standards for lighting products.

b) The actual impact of MEPS on energy savings that will be attributed to Efficiency Manitoba will be determined by the independent assessment required under Section 16(1) of the Efficiency Manitoba Act. The forecasted savings attributed from the 2014 Residential General Service Lighting Standards are listed in Table A9.1 (2020/23 Efficiency Plan, Appendix A9, p. 435 of 591). High-savings codes and standards (including residential lighting) will be evaluated more frequently than low-saving codes. The official list of codes and standards to be evaluated will be determined prior to each evaluation cycle as described in the 2020/23 Evaluation, Measurement and Verification Framework and Plan (2020/23 Efficiency Plan, Attachment 5, p. 572 of 591).

c) Efficiency Manitoba expects to claim savings for MEPS annually until 2024/25. The forecast of MEPS savings resulting from annual conversions of incandescent to halogen lamps is based on the estimated number of incandescent lamps remaining in the Manitoba market. The impact of residential lighting standards on the market will be permanent in nature, however Efficiency Manitoba has assumed that savings from MEPS for general service lamps will persist for one year in order to provide conservative estimates. The persistence of savings from Efficiency Manitoba's impact on MEPS will be determined by the independent assessment required under Section 16(1) of the Efficiency Manitoba Act.

d) The estimated socket saturation of screw-based LED bulbs in Manitoban households is summarized in the following table for all years where data is available.

Survey Administration Date / Source	Estimated number of A-line LED bulbs installed per home	Estimated number of specialty LED bulbs installed per home	Estimated total number of LED bulbs installed per home	Estimated LED socket saturation
Jul 2014 Power Smart Residential Survey administered by NRG Research Group	n/a	n/a	1.6	5%
Nov 2015 Power Smart Residential Survey administered by NRG Research Group	4.4	1.9	6.3	19%
Jan 2017 Omnibus survey administered by Prairie Research Association	8.5	4.1	12.6	37%
Dec 2017 Omnibus survey administered by Probe Research	13.7	5.4	19.1	56%

The estimated socket saturation was computed by dividing the estimated total number of LED bulbs installed per home (determined via phone surveys administered by market research vendors on behalf Manitoba Hydro) by an estimated 34 sockets per residential dwelling (derived from Manitoba installed stock data from Natural Resources Canada, 2013).

e) The market share of installed residential lighting technologies was measured in Manitoba Hydro's 2014 Residential Energy Use Survey (2014 REUS) and Manitoba Hydro's 2017 Residential Energy Use Survey (2017 REUS). Please see below for the questions asked in the surveys as well as the results.

- A copy of the 2014 REUS is publicly available at the following link: https://www.hydro.mb.ca/docs/regulatory_affairs/pdf/electric/general_rate_application_2017/information_requests/pub-mh_i-125a-d_attachments.pdf

- Please see the response PUB/EM I – 8 for a link to the publicly available 2017 REUS.

2014 REUS: Question - Section 6, Question 5 (PDF page 208 of the 2014 REUS)

"What type and approximate percent of the following interior light fixtures are in your residence? (check one for each lighting type)"

	None	20%	40%	60%	80%	100%
Compact Fluorescent						
Halogen						
Incandescent						
LED						
Tube Fluorescent						

2014 REUS Results: Section 6, Question 5 (PDF pages 143-147 of the 2014 REUS)

Lighting Type	None		20%		40%		60%		80%		100%	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Compact Fluorescent	176,672	37.9%	141,063	30.2%	51,162	11.0%	36,196	7.8%	43,827	9.4%	17,478	3.7%
Halogen	333,439	71.5%	90,878	19.5%	20,306	4.4%	11,998	2.6%	6,774	1.5%	3,004	0.6%
Incandescent	152,076	32.6%	79,564	17.1%	56,164	12.0%	56,549	12.1%	95,053	20.4%	26,992	5.8%
LED	351,629	75.4%	60,360	12.9%	21,647	4.6%	15,851	3.4%	13,088	2.8%	3,823	0.8%
Tube Fluorescent	264,930	56.8%	163,826	35.1%	24,212	5.2%	8,920	1.9%	2,831	0.6%	1,680	0.4%

2017 REUS: Question - Section 6, Question 4 (PDF page 220 of the 2017 REUS)

"Approximately how many of each type of light bulbs do you have installed at this residence? (including exterior lights but excluding seasonal or holiday lights – check one for each lighting type)"

	None	1-5	6-10	10-20	20-30	30+
Incandescent						
Halogen						
Compact Fluorescent (CFL)						
Light Emitting Diode (LED)						
Tube Fluorescent						

2017 REUS Results: Section 6, Question 4 (PDF pages 98-102 of the 2017 REUS)

Lighting Type	None		1-5		6-10		11-20		21-30		31+	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Incandescent	156,473	32.3%	128,108	26.4%	86,192	17.8%	65,647	13.5%	36,734	7.6%	11,657	2.4%
Halogen	312,772	64.5%	110,292	22.7%	40,265	8.3%	15,899	3.3%	4,051	0.8%	1,532	0.3%
Compact Fluorescent (CFL)	282,370	58.2%	112,370	23.2%	55,612	11.5%	27,960	5.8%	4,681	1.0%	1,817	0.4%
Light Emitting Diode (LED)	134,918	27.8%	94,386	19.5%	76,053	15.7%	134,527	27.7%	27,957	5.8%	16,970	3.5%
Tube fluorescent	225,605	46.5%	198,320	40.9%	38,644	8.0%	17,614	3.6%	3,211	0.7%	1,418	0.3%

REFERENCE:

21 (PDF 573) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), p. 21, Table 5:

a) For programs not receiving a full impact evaluation in 2020/21, what assumptions will be used to generate the gross and net savings estimates that will be "verified"?
b) To the extent that planning assumptions for gross and net savings will be the basis for program impact verification efforts in 2020/21, please provide all such planning assumptions at the measure level, along with the basis for those assumptions.
c) Under which of the evaluations in the table would net-to-gross adjustments (or free rider and/or spillover estimates) be developed?

RATIONALE FOR QUESTION:

To seek further information regarding the Evaluation Framework & Planning Report and impacts on gross and net savings estimates.

RESPONSE:

a) For programs or measures that have not been evaluated previously for Efficiency Manitoba, the savings verification will involve validating that Efficiency Manitoba consistently applied the assumptions from its program documentation. For these programs and measures, verified savings will be based on Efficiency Manitoba's planning assumptions as well as data collected during program implementation (for example equipment specifications entered on application forms). For programs or measures that have been previously independently evaluated for Manitoba Hydro, these evaluation findings will be used for savings verification instead of planning assumptions.

b) Please see the attachments to DAYMARK/EM I-13de and COALITION/EM I-91.

c) Net-to-gross adjustments would be included as part of full impact evaluations.

REFERENCE:

25-26 (PDF 577-578) Appendix A, Attachment 5

PREAMBLE TO IR (IF ANY):

QUESTION:

Regarding Appendix A, Attachment 5 (Evaluation Framework & Planning Report), pp. 25-26, Table 6:

a) For programs not receiving a full impact evaluation in 2020/21, what assumptions will be used to generate the gross and net savings estimates that will be "verified"?
b) To the extent that planning assumptions for gross and net savings will be the basis for program impact verification efforts in 2020/21, please provide all such planning assumptions at the measure level, along with the basis for those assumptions.
c) Under which of the evaluations in the table would net-to-gross adjustments (or free rider and/or spillover estimates) be developed?

RATIONALE FOR QUESTION:

To seek further information regarding the Evaluation Framework & Planning Report and impacts on gross and net savings estimates.

RESPONSE:

a) Please see the response to COALITION/EM I-73 a).

b) Please see the response to COALITION/EM I-73 b).

c) Please see the response to COALITION/EM I-73 c).

REFERENCE:

4 of 40, lines 54-56 (PDF 207) Appendix A Section A2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that " It is important to understand where technologies reside on the market adoption curve and identify new and emerging technologies with limited availability in the Manitoba market."

QUESTION:

a) Please describe the process that Efficiency Manitoba carried out to accomplish the objective of identifying new and emerging technologies.
b) Please provide all data sources that Efficiency Manitoba reviewed and consulted to accomplish the objective of identifying new and emerging technologies.
c) Please explain the process that Efficiency Manitoba carried out to determine which of the new and emerging technologies it identified to include in its proposed programs.
d) Please identify any and all new and emerging technologies that Efficiency Manitoba identified, but did not include in its proposed programs.

RATIONALE FOR QUESTION:

Understanding how Efficiency Manitoba addressed new and emerging technologies is necessary to ensure that all relevant savings opportunities where addressed.

RESPONSE:

a) In order to identify new and emerging opportunities, design teams comprised of staff with diverse technical and marketing background worked together to identify and catalogue a list of emerging technologies that are either being utilized or under development in other jurisdictions. The list was then screened to determine applicability to the Manitoba market and specific customer segments.

b) Efficiency Manitoba monitors the energy conservation landscape to keep abreast of new technologies, strategies and trends. One way of identifying trends in the energy efficiency industry is by reviewing secondary research, such as webinars, conference presentations, white papers and newsletters, published by a variety of reputable organizations. As per page 425 and 426 of the Plan, several organizations that specialize in energy efficiency include E-Source, American Council for an Energy-Efficient Economy, Natural Resources Canada, Smart Electric Power Alliance, American Society of Heating, Refrigeration, and Air-Conditioning Engineers, and Association of Energy Service Professionals.

   Primary research was also conducted during analysis of the responses to the Stakeholder Engagement Survey (Efficiency Plan Section 3.3.2) and EEAG meeting notes (Efficiency Plan Section 3.3.1), as well as reviewing the direct feedback received through existing energy efficiency programs.

c) Upon creating a catalogue of new opportunities, Efficiency Manitoba researched which would be relevant to Manitoba's climate and energy consumption habits. Staff then liaised with industry on market readiness for new technologies, both from a supply and knowledge perspective. If relevant, staff also reviewed regulatory hurdles which may impede adoption of a technology based on the current regulatory environment. Technologies which remained after this preliminary screening were analyzed to determine the energy savings potential, costs, market adoption, product life span, etc. This information was input into a cost benefit analysis screening tool.

d) Technologies that were identified by Efficiency Manitoba however did not make it into the proposed plan include: small scale wind, dynamic glazing, real-time energy management, energy storage, solar pool heaters, solar thermal water heating, personal comfort systems, advanced rooftop units, solar air pre-heating, residential behavioural program and variable refrigerant flow systems.

REFERENCE:

5 of 40, lines 71-75 (PDF 208) Appendix A Section A2.1.2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Foundational to the success of Efficiency Manitoba is the procurement and implementation of a comprehensive customer relationship management and demand-side management (CRM/DSM) system. This is an integral and overarching strategy that will provide optimal performance of Efficiency Manitoba from both customer-facing and internal operations perspectives."

QUESTION:

When will the CRM/DSM system be fully implemented? Please provide the process and timeline that Efficiency Manitoba will carry out to procure and implement the CRM/DSM system.

RATIONALE FOR QUESTION:

Given the foundational need for the CRM/DSM system it is critical to understand when it will be fully functional and available for use by Efficiency Manitoba.

RESPONSE:

The procurement and subsequent implementation of a CRM/DSM system is currently underway.

Completed milestones include:

- development and issuance of a Request for Qualified Suppliers (RFQS) to procure the services of an external Information Technology Project Manager – June 2019;
- Information Technology Project Manager role awarded, and individual onboarded – August 2019;
- review and assessment of all current Manitoba Hydro Demand Side Management

Program databases and associated systems – September 2019;

- legal requirements review to support the 'to be developed' system purchase – September 2019;
- development and approval of Project Charter – September 2019;
- development of requirements documentation to support system purchase – October 2019;

Future targeted milestones include:

- finalize development and subsequent issuance of a system purchase and implementation Request for Proposal – December 2019;
- vendor evaluation and selection for system purchase and implementation – February 2020 (a formal shortlist of vendors will be identified following a review of all bids to the system purchase and implementation Request for Proposal during the vendor evaluation process);
- implementation work to commence – March 2020
- various features of the CRM/DSM system being implemented in a phased approach between August 2020 and November 2020.

REFERENCE:

7 of 40, lines 118-121 (PDF 210) Appendix A Section A2.1.3

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that it "made strategic choices on continuation of existing energy efficiency programs, offers, and initiatives. Where programs, offers, and initiatives will continue, enhancements will be incorporated to address improvement opportunities to capture additional energy savings where practical."

QUESTION:

What criteria, and with what weighting of the criteria did Efficiency Manitoba assess the strategic value of continuing existing programs?

RATIONALE FOR QUESTION:

Understanding how Efficiency Manitoba determined which programs to include, modify, or reject in its proposed plan will facilitate review of the reasonableness of the costs and savings projections.

RESPONSE:

Efficiency Manitoba's plan is based on innovative and new approaches which build upon the established programs that have shown to be successful in Manitoba (Section 3 of the Plan).

With innovative approaches such as customer segmentation, bundling, and enhancements (including but not limited to: inclusion of new measures, new delivery models, and a streamlined application process for both vendors and customers), Efficiency Manitoba is confident these approaches will be critical factors in meeting the mandated energy savings targets.

Many of the existing efficiency programs in Manitoba continue to experience high participation and energy savings. Efficiency Manitoba acknowledges these achievements and therefore plans to carry initiatives forward for sustained success of both Efficiency Manitoba and its industry partners working towards achievement of the legislated energy savings targets in a cost-effective manner.

Several quantitative and qualitative criteria were used to determine continuation of existing programs in Efficiency Manitoba's Plan. While there was no specific weighting applied, the following factors were considered:

- Contributing energy savings within a cost-effective Program Bundle.
- Contributing towards an inclusive and diverse efficiency portfolio that considers all customer segments.
- Contributing towards social, economic, environmental, and other non-energy benefits to Manitobans.
- Feedback received liaising with stakeholders and other program administrators across the country.

REFERENCE:

7 of 40, lines 118-121 (PDF 210) Appendix A Section A2.1.3

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that it "made strategic choices on continuation of existing energy efficiency programs, offers, and initiatives. Where programs, offers, and initiatives will continue, enhancements will be incorporated to address improvement opportunities to capture additional energy savings where practical. Efficiency Manitoba will also introduce new programs"

QUESTION:

a) Which programs, if any, did Efficiency Manitoba determine not to include in its proposed plan?
b) Which new programs does Efficiency Manitoba propose in its plan, and what criteria were used to determine which new programs to include

RATIONALE FOR QUESTION:

Understanding how Efficiency Manitoba determined which programs to include, modify, or reject in its proposed plan will facilitate review of the reasonableness of the costs and savings projections.

RESPONSE:

a) Please see response to DAYMARK/EM I-4 for programs that were offered by Manitoba Hydro but not continued for Efficiency Manitoba's plan.
b) The table provided below signifies all new offers within the overall Efficiency Manitoba portfolio. Several qualitative and qualitative criteria were used to determine which new offers to include in Efficiency Manitoba's Plan, including:
    - Contributing energy savings within a cost-effective Program Bundle.

- Contributing towards an inclusive and diverse efficiency portfolio that considers all customer segments.
- Contributing towards social, economic, environmental, and other non-energy benefits to Manitobans.
- Feedback received liaising with stakeholders and other program administrators across the country.

Residential Offers

BUNDLES	MEASURES	NEW OR CONTINUING OFFER
DIRECT INSTALL OFFERS	**Online Home Energy Questionnaire**	New Efficiency Manitoba offer
	Home Energy Check-Up	New Efficiency Manitoba offer
	Free basic energy-efficient upgrades: • Up to two energy-efficient showerheads (5.7 LPM) • Up to two energy-efficient bathroom aerators (5.7 LPM) • Up to five LED bulbs • Tier 2 advanced power strips *NEW • Window insulating kits *NEW • Weatherstripping *NEW • Outdoor car plug timers *NEW	Manitoba Hydro program with enhancements
	Incentive-based energy-efficient upgrades: • Heat recovery ventilator (HRV) controls • Smart thermostats *NEW	Manitoba Hydro program with enhancements
PRODUCT REBATE OFFERS	**Retail Rebates** • ENERGY STAR® certified LED bulbs • ENERGY STAR certified integrated LED fixtures • Lighting controls • Outdoor car plug timers & smart plugs • Energy-efficient showerheads (5.7 LPM) • Tier 1 advanced power strips • Weatherstripping • Window insulating kits	Manitoba Hydro program with enhancements

BUNDLES	MEASURES	NEW OR CONTINUING OFFER
	• ENERGY STAR certified clothes washers • ENERGY STAR certified clothes washer/dryer pairs • ENERGY STAR certified refrigerators • ENERGY STAR certified dishwashers ***NEW** • ENERGY STAR certified smart thermostats • Clotheslines (giveaways at select events)	
	Appliance Recycling Program • Refrigerators • Freezers • Dehumidifiers ***NEW** • Window air conditioners ***NEW** • Bar fridges ***NEW**	Manitoba Hydro program with enhancements
HOME RENOVATION OFFERS	**Home Energy Audit**	**New Efficiency Manitoba offer**
	Rebates: • Building envelope: insulation upgrades (attic, wall, foundation), windows & doors, air sealing ***NEW rebates for windows, doors, air sealing** • Appliances: clothes washers & dryers, refrigerators, dishwashers ***NEW as per product rebates** • Drain water heat recovery ***NEW** • HVAC: geothermal, HRV controls, smart thermostats ***NEW** • Pool pumps ***NEW** • Air source heat pumps ***NEW** • Bonus incentive (with Home Energy Audit) ***NEW**	Manitoba Hydro program with enhancements
	Loans: • Building envelope • Space and water heating • Ventilation • Emerging technologies • Custom energy efficiency projects	Manitoba Hydro program
NEW HOMES & MAJOR RENOVATION OFFERS	**New Homes** • Individual measures ***NEW** • Prescriptive Path	Manitoba Hydro program with enhancements

BUNDLES	MEASURES	NEW OR CONTINUING OFFER
	• Performance Path	
	Major Renovation	**New Efficiency Manitoba offer**
HOME ENERGY EFFICIENCY KITS & EDUCATION OFFERS	**Energy Efficiency Kits** • Up to two energy-efficient showerheads (5.7 LPM) • Up to two energy-efficient bathroom aerators (5.7 LPM) • Shower timer • Up to five LED bulbs • Tier 2 advanced power strip • Window insulating kit • Weatherstripping • Outdoor car plug timer	**New Efficiency Manitoba offer**

Income Qualified Offers

PROGRAM	MEASURES	STATUS
INCOME QUALIFED OFFERS	• Home Energy Check-Up • installation of free energy-saving and water-saving devices • air sealing measures • insulation upgrades • a gas furnace or boiler upgrade • a front load clothes washer ***NEW** • a smart thermostat ***NEW** • guidance and support to facilitate installation of qualifying measures and implementation of energy-efficient upgrades ***NEW**	Manitoba Hydro program with enhancements

Indigenous Offers

PROGRAM	MEASURES	STATUS
INSULATION AND DIRECT INSTALL OFFERS	**Home energy efficiency upgrades:** • Insulation • Direct install measures • Smart thermostats *NEW • ENERGY STAR® certified clothes washers *NEW	Manitoba Hydro program with enhancements
SMALL BUSINESS OFFERS	**Product rebates:** • Aerators and showerheads • Lighting • Smart / programmable thermostats	New Efficiency Manitoba offer
COMMUNITY GEOTHERMAL	**Geothermal heat pumps**	Manitoba Hydro program with enhancements
METIS INCOME QUALIFIED	**Home energy efficiency upgrades:** • Insulation • Natural gas furnace • Direct install measures • Smart thermostats • ENERGY STAR certified clothes washers	New Efficiency Manitoba offer

Commercial, Industrial, and Agricultural Offers

BUNDLES	MEASURES	STATUS
SMALL BUSINESS & APPLIANCES OFFERS	**Commercial Kitchen Appliances** ENERGY STAR® certified appliances listed below may qualify for rebates under this initiative: • Steamers • Fryers • Convection ovens *NEW • Dishwashers *NEW • Griddles *NEW • Hot food holding cabinets *NEW	Manitoba Hydro program with enhancements
	Commercial Refrigeration Equipment Products listed below may qualify for rebates under this initiative: • New vertical display case with standard doors	Manitoba Hydro program with enhancements

BUNDLES	MEASURES	STATUS
	• New vertical display case with special (heat free) doors • Anti-sweat heater (ASH) controls • Night covers • High-efficiency compressor • ECM evaporator fan motors • Strip curtains • Automatic door closers • LED display case and walk-in box lighting • Door gaskets • Evaporator efficiency controller	
	Small Business • Kitchen aerators • Bathroom aerators • Pre-rinse spray valves • A-line LEDs • Dimmer switches • T8 ballasts • LED T8 linear lamps • T8 energy-efficient lamps • T8 tandem fixtures • Specialty LED lamps • Exit signs • Showerheads ***NEW** • Smart thermostats ***NEW** • HVAC and controls offers ***NEW** • Cross promote renovation offers	Manitoba Hydro program with enhancements
IN-SUITE EFFICIENCY	**Energy-efficient upgrades installed at no charge include:** • Up to two energy-efficient showerheads (5.7 LPM) • Up to two energy-efficient bathroom aerators (5.7 LPM) • Up to nine LED bulbs	Manitoba Hydro program with enhancements
	Energy-efficient upgrades eligible for incentives: • Heat recovery ventilator (HRV) controls ***NEW** • Smart Thermostats ***NEW**	
RENOVATION OFFERS	**Lighting products** • LED lamps (screw-in T8, T5) • LED specialty lamps (HID ballast, line voltage) • LED fixtures	Manitoba Hydro program with enhancements

BUNDLES	MEASURES	STATUS
	• Backlit signage	
	Lighting controls • Occupancy sensors • Control systems	
	Building Envelope Products and Systems • Surface and cavity insulation for roof, attic, wall, and foundation applications ***NEW for foundation** • Window systems including punched, in-fill, curtain wall, and storefront • Glazed doors including overhead, single-swinging, sliding, and garden	Manitoba Hydro program with enhancements
	Building Envelope Financial Assistance • Incidental and dedicated air sealing ***NEW** • Blower door testing (for determining equivalent air leakage) ***NEW** • Building component energy modelling for designing energy-efficient curtain wall and storefront systems	
HVAC AND CONTROLS OFFERS	**Heating technologies** • Condensing gas boilers • Condensing gas water heaters • Unit heaters ***NEW** • Infrared heaters ***NEW** • Geothermal (ground-source heat pumps)	Manitoba Hydro program with enhancements and new offers
	Cooling technologies • Air cooled chillers ***NEW** • Geothermal (ground-source heat pumps)	Manitoba Hydro program with enhancements and new offers
	Ventilation technologies • CO_2 sensors • HRVs / energy recovery ventilators	Manitoba Hydro program with enhancements and new offers
	Other technologies • Variable frequency drives • Hotel occupancy sensors • Hotel packaged terminal heat pumps (PTHPs)	**New Efficiency Manitoba offer**
NEW CONSTRUCTION & HIGH-PERFORMANCE BUILDING OFFERS	**New Buildings**	Manitoba Hydro programs with enhancements
	Enhanced Building Operations	
	Manitoba Race to Reduce ***NEW for school sector**	
	Energy Scoping Audits	Manitoba Hydro program with enhancements

BUNDLES	MEASURES	STATUS
	Deep Energy Retrofits *NEW	**New Efficiency Manitoba offer**
CUSTOM OFFERS	**Industrial / Agricultural Custom**	Manitoba Hydro program with enhancements
	Energy Manager Initiative	Manitoba Hydro program with enhancements
	Strategic Energy Management Cohorts *NEW	**New Efficiency Manitoba offer**
	Commercial Custom	Manitoba Hydro program with enhancements
LOAD DISPLACEMENT OFFERS	**Load Displacement Program**	Manitoba Hydro program with enhancements

Emerging Technologies Offers

PROGRAM	MEASURES	STATUS
EMERGING TECHNOLOGY PROGRAMS	**Solar Energy Program**	**New Efficiency Manitoba offer**
	Customer Sited Bioenergy Program	Manitoba Hydro program with enhancements

REFERENCE:

8 of 40, lines 153-155 (PDF 211) Appendix A Section A2.1.3

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states as a benefit of measure bundling the "inclusion of measures or technologies that have higher acquisition costs but when bundled with other measures and technologies have improved performance metrics"

QUESTION:

a) Which measures or technologies with higher acquisition costs did Efficiency Manitoba assess for the appropriateness of bundling with other measures? What criteria were used to determine which measures or technologies with higher acquisition costs to include in measure bundles?
b) Which measures or technologies with higher acquisition costs did Efficiency Manitoba reject for bundling with other measures?
c) Which measures or technologies with higher acquisition costs did Efficiency Manitoba include for bundling with other measures?

RATIONALE FOR QUESTION:

Understanding how Efficiency Manitoba determined which measures or technologies to include in measure bundles will facilitate review of the reasonableness of the costs and savings projections.

RESPONSE:

a) As per Table 5.10 in the 2020/23 Efficiency Plan, Section 5.6, p. 146 of 591, Efficiency Manitoba conducted formal acquisition cost analysis by fuel, at the portfolio level. Formal acquisition cost analysis was not conducted at the measure level, however

Efficiency Manitoba deemed those measures with high levelized costs per kWh and m3, to have a corresponding high acquisition cost.

Bundling measures with high levelized costs per kWh and m3 with those with lower levelized costs per kWh and m3, was only one of many considerations when designing program bundles. A more detailed explanation of criteria used to create program bundles is found in the response to DAYMARK/EM 1-92a-c with key factors including but not limited to:

i. shared features such as similar technologies or technologies within the same industry trade;
ii. comparable delivery models;
iii. consolidation of opportunities across program bundles for select hard-to-reach customer groups including income qualified, Indigenous, and small business;
iv. considerations related to cost-effectively servicing all customer segments through an inclusive and diverse portfolio;
v. objectives related to identifying innovative approaches to better serve Manitobans while achieving the mandated energy savings; and
vi. objectives related to building and sustaining meaningful partnerships.

Additional considerations, in part leading to the development of program bundles as presented in the 2020/23 Efficiency Plan, can be viewed in PUB-EM 2b - Attachment 1 which includes memos produced for Efficiency Manitoba by Dunsky Energy Consultants in 2018.

b) Please see the response to PUB/EM I-1a for programs/measures that Efficiency Manitoba considered but did not put forth in the Plan due to numerous factors including but not limited to high levelized costs per kWh and m3.

c) Please see the response to part a).

REFERENCE:

9 of 40, lines 164-165 (PDF 212) 9 of 40, lines 164-165 (PDF 212)

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "many of the existing efficiency programs in Manitoba continue to experience high participation and energy savings."

QUESTION:

Which programs did Efficiency Manitoba consider to be experiencing high participation and energy savings, such that they should be continued? What criteria did Efficiency Manitoba use to make these determinations?

RATIONALE FOR QUESTION:

Understanding how Efficiency Manitoba determined which measures or technologies to include in measure bundles will facilitate review of the reasonableness of the costs and savings projections.

RESPONSE:

Many of the existing efficiency programs in Manitoba continue to experience high participation and energy savings. Efficiency Manitoba acknowledges these achievements and therefore plans to carry initiatives forward for sustained success of both Efficiency Manitoba and its industry partners working towards achievement of the legislated energy savings targets. Please see response to COALITION/EM I-92b which provides a table that shows continuing programs under the 'Status' column.

Bringing together existing high savings potential offers with innovative approaches such as customer segmentation; bundling; and enhancements including but not limited to: inclusion of new measures, new delivery models, and a streamlined application process for both vendors

and customers; will ensure that Efficiency Manitoba's Plan is positioned to meet the mandated energy savings targets.

Several quantitative and qualitative criteria were used to determine continuation of existing Manitoba Hydro Demand Side Management offers in Efficiency Manitoba's Plan, including:

- Contributing energy savings within a cost-effective Program Bundle.
- Contributing towards an inclusive and diverse efficiency portfolio that considers all customer segments.
- Contributing towards social, economic, environmental, and other non-energy benefits to Manitobans.
- Feedback received liaising with stakeholders and other program administrators across the country.

REFERENCE:

10 of 40, lines 196-197 (PDF 213) Appendix A Section A2.1.4

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Third party service providers will be procured to work on behalf of Efficiency Manitoba for a variety of key programming initiatives."

QUESTION:

a) Please list the specific programming initiatives for which Efficiency Manitoba expects to procure third party service providers.
b) Please provide a description of the process Efficiency Manitoba will use to procure the third-party service providers, as well as the expected timeline it will follow from the initiation of the procurement until contract execution.
c) Please explain the extent to which Efficiency Manitoba's ability to meet its first year savings targets will hinge on its ability to successfully procure the third party service providers within the expected timeline.
d) Please describe Efficiency Manitoba's contingency plans for meeting its first year savings targets in the event that it is not successful in procuring the required third party service providers.

RATIONALE FOR QUESTION:

Successful procurement of third-party providers will materially effect the success of the programs which require them.

RESPONSE:

a) Please see the response to DAYMARK/EM I-13b for a chart of the programming initiatives that will require Efficiency Manitoba to procure third-party service providers.

b) Please see the response to DAYMARK/EM I-13c for an overview of the process and timeline to initiate procurement of third-party services providers.

c) Efficiency Manitoba 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. Additionally, Manitoba Hydro's existing program delivery contracts have transferability clauses related to Efficiency Manitoba that can be executed as needed.

d) Formal contingency plans related to Efficiency Manitoba's first year savings targets and procuring third-party services providers are not in place at this time as many of the new initiatives are planned for commencement in years two and three of the plan and allow additional time for procurement of service providers.

REFERENCE:

35-36 of 40, lines 685-688 (PDF 238-239) Appendix A Section A2.3

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "refinements included rejection of individual technologies within a portfolio: adjustments to planned incentive levels; and adjustment to the targeted participation and resulting savings."

QUESTION:

Please list all individual technologies that were rejected as a result of the application of Efficiency Manitoba's multi-criteria analysis.

RATIONALE FOR QUESTION:

To ensure that Efficiency Manitoba did not inappropriately exclude applicable technologies.

RESPONSE:

Please see response to PUB/EM I-1a for individual technologies that were rejected from inclusion in the Plan.

REFERENCE:

6-8 of 38, Table A4.1 (PDF 278-280) Appendix A Section A4

PREAMBLE TO IR (IF ANY):

In Table A4.1 Efficiency Manitoba lists the measures that it proposes to include in its residential program offers

QUESTION:

Please provide a comparison of the assumed savings and installed/in-service rates for the measures that are listed for the Home Energy Check-Up program and the Energy Efficiency Kits program.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Below is a comparison of the assumed savings and installed/in-service rates (persistence) for the measures included in the Home Energy Check-Up and the Energy Efficiency Kits Program.

MEASURES	SAVINGS ELECTRIC (kWh)	SAVINGS NATURAL GAS (M3)	PERSISTENCE
Energy Efficiency Kits – School Education Kits			
· Up to two energy-efficient showerheads (5.7 LPM)	495	63	61%
· One energy-efficient kitchen aerator (5.7 LPM)	151	19	88%
· Up to two energy-efficient bathroom aerators (5.7 LPM)	151	19	88%
· Water heater pipe wrap insulation	31	4	100%
· Shower timer	238	30	10%
· Up to five LED bulbs	24	N/A	85%
· Tier 2 advanced power strip	62	N/A	80%
· Window insulating kit	237	27	48%
· Weatherstripping	106	12	48%
· Outdoor car plug timer	75	N/A	80%
Energy Efficiency Kits - Community Events			
· Up to two energy-efficient showerheads (5.7 LPM)	357	45	38%
· One energy-efficient kitchen aerator (5.7 LPM)	142	18	23%
· Up to two energy-efficient bathroom aerators (5.7 LPM)	142	18	23%
· Water heater pipe wrap insulation	31	4	34%
· Clotheslines	217	N/A	75%
· Shower timer	238	30	5%
Energy Efficiency Kits – Home Energy Check-Up Direct Install			
· Up to two energy-efficient showerheads (5.7 LPM)	495	63	61%
· One energy-efficient kitchen aerator (5.7 LPM)	151	19	88%
· Up to two energy-efficient bathroom aerators (5.7 LPM)	151	19	88%
· Water heater pipe wrap insulation	31	4	100%
· Shower timer	238	30	10%
· Up to five LED bulbs	24	N/A	85%
· Tier 2 advanced power strip	62	N/A	80%
· Window insulating kit	237	27	48%
· Weatherstripping	106	12	48%
· Outdoor car plug timer	75	N/A	80%

REFERENCE:

13 of 38, Table A4.2 (PDF 285) Appendix A Section A4.3

PREAMBLE TO IR (IF ANY):

In Table A4.2 Efficiency Manitoba projects that the Direct Install program will reach 800 houses in 2020/21, 1,200 houses in 2021/22, and 1,600 houses in 2022/23.

QUESTION:

Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Please see the response to Daymark/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

REFERENCE:

14 of 38, lines 183-187 (PDF 286) Appendix A Section A4.3.1

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that " Homeowners will be able to complete a simple online energy efficiency questionnaire through Efficiency Manitoba's online customer portal."

QUESTION:

Please provide a description of the process Efficiency Manitoba will follow to develop or procure the online energy efficiency questionnaire, along with a timeline showing the key milestones that must be met and the expected launch date of the questionnaire

RATIONALE FOR QUESTION:

The ability of Efficiency Manitoba to develop the online portal is fundamental to the success of the programs.

RESPONSE:

The development of the online questionnaire will be a project separate of the implementation of the Customer Relationship Management System and Demand Side Management Tracking System ("CRM/DSM system") and is therefore not dependent of the CRM/DSM System. The information gathered through the online questionnaire; however, will be integrated into the CRM/DSM system once it is deployed. Various features of the CRM/DSM system will go live in a phased approach between August 2020 and November 2020. The timeline of the deployment of the CRM/DSM system does not preclude the online questionnaire from being deployed at an earlier date.

Efficiency Manitoba will follow the process below to develop and procure an online energy efficiency questionnaire:

1. Conduct market and technical research to identify a questionnaire that will effectively collect information from customers to identify energy efficiency opportunities in their home (current and ongoing).

2. Issue a tender to procure a service provider who can develop and implement an online energy efficiency questionnaire (spring 2020).

3. Select a service provider to develop and implement the online energy efficiency questionnaire for a targeted rollout for fall 2020.

REFERENCE:

14 of 38, lines 183-187 Appendix A Section A4.3.1

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that " Homeowners will be able to complete a simple online energy efficiency questionnaire through Efficiency Manitoba's online customer portal."

QUESTION:

a) What is the expected level of effort from a participating customer in order to complete the questionnaire? How much time will it take a customer to complete the questionnaire? What information will a customer need to provide in order to complete the questionnaire?
b) Is completion of the questionnaire a required step in order for a customer to participate in the in-person Home Energy Check-Up?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) The questionnaire will collect information from the customer to identify energy efficiency opportunities in their home, outline current rebates and incentives available to the customer, and determine their candidacy for an in-person Home Energy Check-Up. Recognizing customers have varying degrees of knowledge, these questions will be presented with visual queues to assist customers through the questionnaire. Customers may be asked to provide information about their home including: the year the home was built, the square footage, the heating system, the number of LEDs in the home, type of windows in the home, etc. The questionnaire will be designed to be completed in five minutes on average.

b) To ensure customers are receiving recommendations for upgrades that are suitable for their home they will be required to complete the questionnaire to be eligible for the Home Energy Check-Up. If a customer is unable to access the online survey, a customer service representative will work with them to complete the survey over the phone.

REFERENCE:

14 of 38, lines 183-195 (PDF 286) Appendix A Section A4.3.1

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Once the customer has completed the Online Home Energy Questionnaire, they may opt to book an in-person Home Energy Check-Up."

QUESTION:

Are there any eligibility criteria that must be met in order for a customer to participate in the Home Energy Check-Up? Please explain and list any criteria that must be met.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Customers must be the owner of the home and must complete the Home Energy Questionnaire to be eligible for the Home Energy Check-Up. There will be a fee of $100[†] for the Home Energy Check-Up. Home Energy Check-ups are provided at no cost to low income customers who apply to the Income Qualified programs and meet the LICO 125 thresholds.

[†] Subject to change.

REFERENCE:

14-15 of 38, lines 196-208 (PDF 286-287) Appendix A Section A4.3.2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Homeowners may be eligible to have the following devices installed based on the results of the Online Home Energy Questionnaire or Home Energy Check-Up," and states that "Additional energy efficient upgrades eligible for incentives include: heat recovery ventilator (HRV) controls;, and a smart thermostat."

QUESTION:

a) Will the HRV controls and/or smart thermostat be installed at the time of the Home Energy Check-Up, or must they be scheduled with the customer for subsequent installation?
b) What level of investment will the customer be required to make for installation of the HRV controls and/or smart thermostat?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Certified installers are required to install HRV controls and/or smart thermostats. As a result, the installation of these measures must be scheduled for a later date.

b) The level of investment required by the customer will vary depending on the type of HRV control and/or smart thermostat they choose to have installed, their current furnace and HRV models, location of the equipment, contractor, etc. The average cost to purchase and install an HRV control through a contractor is $250. The customer would be eligible for an incentive of $150 which would be applied directly to the

customer's invoice. The average cost to purchase and install a smart thermostat through a contractor is $380. The customer would be eligible to apply for the online thermostat rebate of $50.

REFERENCE:

16 of 38, Table A4.4 (PDF 288) Appendix A Section A4.4.

PREAMBLE TO IR (IF ANY):

In Table A4.4 Efficiency Manitoba projects that the Product Rebate program will claim 354,000 products in 2020/21, 275,000 in 2021/22, and 195,000 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a listing of each measure category that is included in the number of products for each year, as well as the quantity of each measure by year and the assumed savings for each measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see COALITION/EM I-89a-b-Attachment 1 for a listing of each measure, quantity and savings.

	ELECTRIC					
	No. of products			Annual electric savings (GWh) (at generation)		
	Y1 - 2020-21	Y2 - 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 - 2021-22	Y3 - 2022-23
Retail Rebates						
ENERGY STAR® certified LED bulbs	270,833	203,277	135,722	3.15	2.04	1.14
ENERGY STAR certified integrated LED fixtures	36,959	32,031	27,102	1.07	0.84	0.64
Lighting controls	10,000	9,000	8,000	0.24	0.22	0.19
Outdoor car plug timers	4,000	3,600	3,240	0.22	0.20	0.18
Smart plugs	250	250	250	0.01	0.01	0.01
Energy-efficient showerheads (5.7 LPM)	300	270	250	0.11	0.10	0.09
Tier 1 advanced power strips	200	180	160	0.01	0.01	0.01
Weatherstripping	1,700	1,530	1,380	0.13	0.11	0.10
Window insulating kits	500	450	410	0.08	0.07	0.07
ENERGY STAR certified clothes washers & washer/dryer pairs	14,608	11,680	8,768	2.32	1.86	1.40
ENERGY STAR certified refrigerators	1,640	1,460	1,280	0.07	0.06	0.05
ENERGY STAR certified dishwashers	500	450	400	0.01	0.01	0.01
ENERGY STAR certified smart thermostats	2,740	2,280	n/a	1.15	0.95	n/a
Clotheslines (giveaways at select events)	3,000	3,000	3,000	0.45	0.45	0.45
Appliance Recycling Program						
Refrigerators	4,125	3,710	3,340	4.02	3.62	3.25
Freezers	1,375	1,240	1,120	1.11	1.00	0.91
Dehumidifiers	400	400	400	0.13	0.13	0.13
Window air conditioners	250	250	250	0.03	0.03	0.03
Bar fridges	410	370	330	0.02	0.02	0.02
Grand Total	**353,790**	**275,428**	**195,402**	**14.30**	**11.72**	**8.67**

Note: Values may not add up exactly due to rounding.

			NATURAL GAS					
Annual electric capactiy savings (MW) (at generation)			No. of products			Annual natural gas savings (million m3)		
Y1 - 2020-21	Y2 - 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 - 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 - 2021-22	Y3 - 2022-23
0.99	0.61	0.33	n/a	n/a	n/a	n/a	n/a	n/a
0.34	0.26	0.20	n/a	n/a	n/a	n/a	n/a	n/a
0.08	0.07	0.06	n/a	n/a	n/a	n/a	n/a	n/a
0.02	0.02	0.02	n/a	n/a	n/a	n/a	n/a	n/a
0.00	0.00	0.00	n/a	n/a	n/a	n/a	n/a	n/a
0.01	0.01	0.01	200	180	160	0.01	0.01	0.01
0.00	0.00	0.00	n/a	n/a	n/a	n/a	n/a	n/a
0.06	0.05	0.05	15,300	13,770	12,390	0.11	0.10	0.09
0.04	0.04	0.04	4,500	4,050	3,650	0.07	0.07	0.06
0.26	0.21	0.15	10,956	8,760	6,576	0.05	0.04	0.03
0.01	0.00	0.00	n/a	n/a	n/a	n/a	n/a	n/a
0.00	0.00	0.00	200	180	160	0.00	0.00	0.00
0.57	0.48	n/a	8,210	6,850	n/a	0.30	0.25	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
0.31	0.28	0.25	n/a	n/a	n/a	n/a	n/a	n/a
0.09	0.08	0.07	n/a	n/a	n/a	n/a	n/a	n/a
-	-	-	n/a	n/a	n/a	n/a	n/a	n/a
-	-	-	n/a	n/a	n/a	n/a	n/a	n/a
0.00	0.00	0.00	n/a	n/a	n/a	n/a	n/a	n/a
2.78	**2.11**	**1.19**	**39,366**	**33,790**	**22,936**	**0.55**	**0.47**	**0.19**

REFERENCE:

17 of 38, lines 237-241 (PDF 289) Appendix A Section A4.4.1.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Online rebates will [be] available on technologies with higher upfront costs including appliances and smart thermostats."

QUESTION:

a) What criteria did Efficiency Manitoba use in determining to provide online rather than instant rebates for these products?
b) What is the dollar value by measure for the rebates Efficiency Manitoba expects to provide for each measure for which it will employ online rather than instant rebates?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Four key factors were considered when determining which products should be eligible for online rebates instead of instant rebates: quality control and verification, data collection, purchasing behaviours, and retailer engagement.

   Quality control and verification - Perhaps the most significant consideration taken into account was the need to carefully monitor and control the implementation of the online rebates offer. Due to the high value of the rebates associated with each product, it will be especially important to ensure that all customers that apply for an online rebate are

eligible and adhere to the offer terms and conditions. For example, a customer can only claim a rebate for one product type per household. By asking for customer contact information, address, and purchase information through an online form, Efficiency Manitoba can ensure this condition is met for each participant.

Data collection - When providing rebates with a higher dollar value to customers (as is the case with appliances and smart thermostats), it is particularly important to understand specific details regarding who is claiming the rebate – and why. An online rebate allows for the collection of customer data, which provides Efficiency Manitoba with a deeper understanding of where appliances and smart thermostats are being installed, why customers chose to purchase the product, and other relevant information that will help to evaluate the success of the offer.

Purchasing behaviours - Online rebates will be offered year-round, whereas instant rebates are structured as limited time offers (i.e. two one-month periods each calendar year). This delivery method was chosen to better reflect the longer purchasing decision period required for higher-priced items.

Retailer engagement - Having customers fill out an online form lends itself better to a year-round offer, as it requires less buy-in and staffing resources from retailers. Structuring a year-round offer as an instant rebate would require frequent and consistent quality and compliance checks with retailers to ensure rebates are being properly applied at point-of-sale. This level of engagement would be costly and administratively burdensome for a year-round offer.

b) The rebate amounts for products included in the online rebates offer are as follows:

Product	**Rebate amount**
ENERGY STAR certified clothes washers & washer/dryer pairs	$100 (clothes washer only)
	$150 (clothes washer/dryer pair)
ENERGY STAR certified refrigerators	$25 for refrigerators at least 10% more efficient than federal standard
	$100 for refrigerators at least 15% more efficient than federal standard
ENERGY STAR certified dishwashers	$25
ENERGY STAR certified smart thermostats	$50

The total dollar amount of incentives by measure for each of the three plan years are as follows:

Product	**2020/21**	**2021/22**	**2022/23**
ENERGY STAR certified clothes washers & washer/dryer pairs	$1,186,900	$949,000	$712,400
ENERGY STAR certified refrigerators	$47,150	$41,975	$36,800
ENERGY STAR certified dishwashers	$12,500	$11,250	$10,000
ENERGY STAR certified smart thermostats	$547,500	$456,500	$0

REFERENCE:

23 of 38, Table A4.6 (PDF 295) Appendix A Section A4.5.

PREAMBLE TO IR (IF ANY):

In Table A4.6 Efficiency Manitoba projects that the Home Renovation program will complete 800 projects in 2020/21, 4,700 in 2021/22, and 3,900 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a breakdown of the number of projects that Efficiency Manitoba expects to complete in each sub-category of the Home Renovation offer (Home Energy Audit, Individual Projects, Home Energy Efficiency Loan) in each year.
c) Please provide a list of the measures that Efficiency Manitoba projected and based its costs and savings estimates on in each track, by year, along with the expected incentive costs and savings per measure.
d) Are customers that participate in either the Home Energy Audit or Individual Projects track eligible to also obtain a Home Energy Efficiency Loan?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I–13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) The follow chart provides a breakdown of the number of projects that Efficiency Manitoba expects to complete through the Home Renovation program in each year. Home Energy Audit and Bonus incentive participation represents the number of customers who completed multiple upgrades in the rebates category and an audit.

Measures	**Y1 – 2020-21 Participation**	**Y2 – 2021-22 Participation**	**Y3 – 2022-23 Participation**
Home Energy Audit and Bonus Incentive*	-	1,000	1,650
Rebates:			
· Insulation (attic, wall, foundation)	1,562	1,472	1,422
· Air Sealing	-	500	550
· Doors	-	2,438	2,413
· Windows	-	4,729	5,448
· Drain water heat recovery	-	20	21
· HRV Controls	200	539	906
· Smart thermostats	-	1,830	-
· Geothermal	-	55	80
· Pool pumps	257	643	643
· Air source heat pumps	-	3	4
· Clothes washers & dryers	-	4,088	3,080
· Refrigerators	-	290	260
· Dishwashers	-	126	112
Home Energy Efficiency Loan: · Building envelope, space and water heating, ventilation, emerging technologies, custom energy efficiency projects	4,400	7,500	7,426

*Home Energy Audit and Bonus incentive participation represents the number of customers who completed a combination of upgrades in the rebates category and an

audit. For example an audit and bonus incentive customer could include three rebate measures.

c) Please see Attachment 1 to this response for a listing of each measure as well as incentive costs and savings per measure.

d) Customers who participate in either the Home Energy Audit or Individual Projects track are also eligible to participate in the Home Energy Efficiency Loan if the customer and the measure meet eligibility criteria for financing through the Home Energy Efficiency Loan.

Products and measures eligible under the Home Energy Efficiency Loan include:

- Building envelope;
- Space and water heating;
- Ventilation;
- Emerging technologies; and
- Custom energy efficiency projects.

BUNDLES	MEASURES	CUSTOMER SEGMENT	ELECTRIC									NATURAL GAS					
			Incentive Costs			Annual Electric Savings (GWh) (at generation)			Annual Capacity Savings (MW) (at generation)			Incentive Costs			Annual Natural Gas Savings (million m3) (at generation)		
			Y1 - 2020-21	Y2 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 2021-22	Y3 - 2022-23	Y1 - 2020-21	Y2 2021-22	Y3 - 2022-23
DIRECT INSTALL OFFERS	**Online Home Energy Questionnaire**	Residential															
	Home Energy Check-Up																
	Free basic energy-efficient upgrades:																
	Up to two energy-efficient showerheads (5.7 LPM)	Residential	$10,093.48	$15,431.37	$20,970.84	0.27	0.41	0.55	0.02	0.03	0.03	$8,258.30	$12,625.67	$17,157.96	0.02	0.04	0.05
	One energy-efficient kitchen aerators (5.7 LPM)	Residential	$1,064.25	$1,627.07	$2,211.15	0.13	0.19	0.25	0.01	0.01	0.02	$870.75	$1,331.24	$1,809.12	0.01	0.02	0.02
	Up to two energy-efficient bathroom aerators (5.7 LPM)	Residential	$1,237.50	$1,891.95	$2,571.11	0.13	0.19	0.25	0.01	0.01	0.02	$1,012.50	$1,547.96	$2,103.63	0.00	0.00	0.00
	Water heater pipe wrap insulation	Residential	$1,361.25	$2,081.14	$2,828.22	0.03	0.04	0.06	0.02	0.03	0.03	$1,113.75	$1,702.75	$2,314.00	0.00	0.00	0.01
	Shower timer	Residential	$5,500.00	$8,408.65	$11,427.14	0.01	0.02	0.03	0.00	0.00	0.00	$4,500.00	$6,879.81	$9,349.48	0.01	0.02	0.03
	Up to five LED bulbs	Residential	$30,000.00	$45,865.38	$62,329.88	0.14	0.20	0.27	0.04	0.02	0.02	N/A	N/A	N/A	N/A	N/A	N/A
	Tier 2 advanced power strips	Residential	$160,000.00	$244,615.38	$332,426.04	0.09	0.14	0.18	0.01	0.02	0.03	N/A	N/A	N/A	N/A	N/A	N/A
	Window insulating kits	Residential	$5,600.00	$12,842.31	$17,452.37	0.10	0.23	0.31	0.05	0.12	0.16	$8,400.00	$19,263.46	$26,178.55	0.02	0.03	0.05
	Weatherstripping	Residential	$7,200.00	$11,007.69	$14,959.17	0.07	0.10	0.14	0.03	0.05	0.05	$10,800.00	$16,511.54	$22,438.76	0.01	0.02	0.02
	Outdoor car plug timers	Residential	$26,976.37	$41,242.72	$56,047.81	0.10	0.15	0.21	0.01	0.02	0.03	N/A	N/A	N/A	N/A	N/A	N/A
	Incentive-based energy-efficient upgrades:																
	Heat recovery ventilator (HRV) controls	Residential	$6,029.44	$9,218.09	$12,527.15	0.03	0.04	0.05	0.01	0.02	0.02	$9,044.16	$13,827.14	$18,790.72	0.00	0.01	0.01
	Smart thermostats	Residential	$8,618.89	$13,176.96	$17,907.15	0.13	0.20	0.26	0.07	0.10	0.10	$12,928.34	$19,765.44	$26,860.73	0.02	0.03	0.04
HOME RENOVATION OFFERS	**Home Energy Audit**	Residential															
	Rebates:																
	Insulation (attic, wall, foundation)	Residential	$689,666.00	$474,661.00	$449,924.00	2.44	2.27	2.11	1.07	1.00	0.93	$579,399.00	$574,371.00	$579,562.00	0.33	0.32	0.32
	Air sealing	Residential	$0.00	$35,673.00	$39,995.00	0.00	0.00	0.00	0.00	0.07	0.07	$0.00	$142,692.00	$159,980.00	0.00	0.06	0.06
	Doors	Residential	$0.00	$12,422.00	$12,534.00	0.00	0.03	0.03	0.00	0.02	0.02	$0.00	$111,797.00	$112,807.00	0.00	0.03	0.03
	Windows	Residential	$0.00	$306,744.00	$309,516.00	0.00	1.45	1.44	0.00	0.76	0.75	$0.00	$1,380,191.00	$1,671,428.00	0.00	0.70	0.82
	Drain water heat recovery	Residential	$0.00	$2,038.00	$2,285.00	0.00	0.01	0.01	0.00	0.00	0.00	$0.00	$2,038.00	$2,038.00	0.00	0.00	0.00
	HRV controls	Residential	$7,164.00	$19,679.00	$33,714.00	0.03	0.08	0.14	0.01	0.03	0.06	$22,836.00	$62,726.00	$107,463.00	0.01	0.03	0.04
	Smart thermostats	Residential	$0.00	$23,442.00	$0.00	0.00	0.19	0.00	0.00	0.10	0.00	$0.00	$69,817.00	$0.00	0.00	0.05	0.00
	Geothermal	Residential	$0.00	$165,115.38	$241,839.94	0.00	0.58	0.83	0.00	0.29	0.42	$0.00	$3,057.69	$6,232.99	0.00	0.00	0.00
	Pool pumps	Residential	$78,000.00	$196,609.62	$200,390.57	0.49	1.21	1.21	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Air source heat pumps	Residential	$0.00	$8,153.85	$11,240.16	0.00	0.02	0.03	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Clothes washers & dryers	Residential	$0.00	$193,450.00	$148,553.00	0.00	0.37	0.28	0.00	0.04	0.03	$0.00	$0.00	$0.00	0.00	0.01	0.01
	Refrigerators	Residential	$0.00	$8,498.00	$7,765.00	0.00	0.01	0.01	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Dishwashers	Residential	$0.00	$2,293.00	$2,078.00	0.00	0.00	0.00	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Bonus incentive (with Home Energy Audit)	Residential	$0.00	$382,212.00	$428,518.00	0.00	0.00	0.00	0.00	0.00	0.00	$0.00	$382,212.00	$857,036.00	0.00	0.00	0.00
	Loans:																
	Building envelope, space and water heating, ventilation, emerging technologies, (	Residential	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEW HOMES & MAJOR RENOVATION OFFERS	**New Homes**																
	Individual measures	Residential	$0.00	$26,601.92	$36,151.33	0.00	0.09	0.12	0.00	0.05	0.06	$0.00	$62,071.15	$84,353.11	0.00	0.02	0.03
	Performance Path and Prescriptive Path	Residential	$801,075.00	$816,480.00	$832,182.00	3.32	3.32	3.32	1.66	1.66	1.66	$210,541.00	$214,590.00	$218,716.00	0.07	0.07	0.07
	Major Renovation	Residential	$0.00	$107,144.00	$120,125.00	0.00	0.21	0.22	0.00	0.10	0.11	$0.00	$186,556.00	$209,158.00	0.00	0.07	0.08
HOME ENERGY EFFICIENCY KITS & EDUCATION OFFERS	**Energy Efficiency Kits**																
	Up to two energy-efficient showerheads (5.7 LPM)	Residential	$18,982.65	$23,421.58	$23,871.99	0.12	0.23	0.23	0.01	0.02	0.02	$16,609.81	$20,262.41	$20,652.07	0.01	0.02	0.02
	One energy-efficient kitchen aerator (5.7 LPM)	Residential	$1,032.00	$1,481.39	$1,509.88	0.03	0.08	0.08	0.00	0.01	0.01	$903.00	$1,271.81	$1,296.27	0.00	0.01	0.01
	Up to two energy-efficient bathroom aerators (5.7 LPM)	Residential	$1,200.00	$1,722.55	$1,755.68	0.03	0.08	0.08	0.00	0.01	0.01	$1,050.00	$1,478.85	$1,507.29	0.00	0.01	0.01
	Water heater pipe wrap insulation	Residential	$1,320.00	$1,894.81	$1,931.24	0.01	0.02	0.02	0.01	0.01	0.01	$1,155.00	$1,626.74	$1,658.02	0.00	0.00	0.00
	Shower timers	Residential	$4,000.00	$6,851.78	$6,983.54	0.01	0.02	0.02	0.00	0.00	0.00	$3,500.00	$5,837.64	$5,949.91	0.01	0.01	0.01
	Up to five LED bulbs	Residential	$0.00	$10,090.38	$10,284.43	0.00	0.05	0.05	0.00	0.02	0.02	$0.00	N/A	N/A	N/A	N/A	N/A
	Tier 2 advanced power strips	Residential	$0.00	$37,670.77	$38,395.21	0.00	0.03	0.03	0.00	0.00	0.00	$0.00	N/A	N/A	N/A	N/A	N/A
	Window insulating kit	Residential	$0.00	$1,883.54	$1,919.76	0.00	0.03	0.03	0.00	0.02	0.02	$0.00	$2,825.31	$2,879.64	0.00	0.01	0.01
	Weatherstripping	Residential	$0.00	$1,614.46	$1,645.51	0.00	0.02	0.02	0.00	0.01	0.01	$0.00	$2,421.69	$2,468.26	0.00	0.00	0.00
	Clotheslines	Residential	$20,000.00	$20,384.62	$20,776.63	0.37	0.37	0.37	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Outdoor car plug timer	Residential	$0.00	$9,073.40	$9,247.89	0.00	0.03	0.03	0.00	0.00	0.00	$0.00	N/A	N/A	N/A	N/A	N/A
INCOME QUALIFIED	**Single/Semi Detached**	Residential Income Qualified															
	Home Energy Check-Up (includes air sealing)	Residential Income Qualified	$48,130.72	$48,308.50	$48,475.32	0.02	0.02	0.02	0.00	0.00	0.00	$149,067.02	$149,769.01	$150,442.87	0.01	0.01	0.01
	Energy-saving and water-saving devices (no LED's)	Residential Income Qualified	$10,200.73	$10,249.00	$10,295.36	0.50	0.49	0.49	0.05	0.05	0.05	$10,853.69	$10,899.73	$10,958.60	0.06	0.06	0.06
	Air sealing measures (included in Home Energy Check-up)	Residential Income Qualified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	LED bulbs	Residential Income Qualified	$45,675.00	$45,911.00	$46,140.00	0.30	0.29	0.29	0.09	0.09	0.09	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Insulation upgrades	Residential Income Qualified	$580,356.00	$579,444.92	$574,182.87	1.30	1.27	1.24	0.65	0.64	0.62	$2,329,320.00	$2,309,731.85	$2,292,630.17	0.61	0.60	0.58
	Additonal basement upgrades (requiring extra assistance)	Residential Income Qualified	$125,000.00	$127,403.85	$129,853.92	0.21	0.21	0.21	0.11	0.11	0.11	$375,000.00	$382,211.54	$389,561.76	0.06	0.06	0.06
	One energy-efficient kitchen aerator (5.7 LPM)	Residential Income Qualified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$1,590,050.00	$1,459,742.31	$1,339,832.75	0.33	0.30	0.27
	Gas furance upgrade - from a mid efficient furnace	Residential Income Qualified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$0.00	$0.00	$691,861.69	0.00	0.00	0.07
	Boiler upgrade	Residential Income Qualified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$30,000.00	$30,576.92	$31,164.94	0.01	0.01	0.01
	Front load clothes washer	Residential Income Qualified	$0.00	$358,769.23	$365,668.64	0.00	0.17	0.17	0.00	0.02	0.02	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Smart thermostats	Residential Income Qualified	$0.00	$57,433.65	$57,810.97	0.00	0.04	0.04	0.00	0.00	0.00	$0.00	$197,272.12	$198,520.67	0.00	0.04	0.04
	MURBS																
	Air sealing measures	Residential Income Qualified	$1,004.50	$1,023.82	$1,043.51	0.01	0.01	0.01	0.00	0.00	0.00	$1,004.50	$1,023.82	$1,043.51	0.00	0.00	0.00
	Energy-saving and water-saving devices	Residential Income Qualified	$1,786.07	$1,820.42	$1,855.43	0.11	0.11	0.11	0.01	0.01	0.01	$765.46	$780.18	$795.18	0.01	0.01	0.01
	LED bulbs	Residential Income Qualified	$15,750.00	$16,052.88	$16,361.59	0.08	0.08	0.08	0.03	0.03	0.03	$0.00	$0.00	$0.00	0.00	0.00	0.00
FIRST NATIONS INSULATION AND DIRECT INSTALL OFFERS	**Home energy efficiency upgrades:**																
	Insulation	Indigenous	$56,500.00	$98,515.00	$107,104.00	0.11	0.23	0.25	0.06	0.12	0.13	N/A	N/A	N/A	N/A	N/A	N/A
	Bathroom aerators (5.7 LPM)	Indigenous	$75.00	$115.00	$156.00	0.01	0.01	0.02	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Kitchen aerator (5.7 LPM)	Indigenous	$75.00	$115.00	$156.00	0.01	0.01	0.02	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Showerhead standard (5.7 LPM)	Indigenous	$2,192.00	$3,351.00	$4,554.00	0.02	0.03	0.03	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Showerhead handheld (5.7 LPM)	Indigenous	$2,192.00	$3,351.00	$4,554.00	0.02	0.03	0.03	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	LED bulbs	Indigenous	$1,575.00	$2,408.00	$3,272.00	0.00	0.01	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Air sealing safety caps (1 pack)	Indigenous	$587.00	$897.00	$1,220.00	0.00	0.00	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Air sealing socket gaskets (12)	Indigenous	$587.00	$897.00	$1,220.00	0.00	0.00	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Air sealing window kits (3)	Indigenous	$587.00	$897.00	$1,220.00	0.00	0.00	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Pipe wrap	Indigenous	$83.00	$126.00	$171.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Smart thermostats	Indigenous	$0.00	$2,675.00	$3,636.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	ENERGY STAR® certified clothes washers	Indigenous	$0.00	$4,077.00	$6,649.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
INDIGENOUS SMALL BUSINESS OFFERS*	**Product rebates:**										N/A	N/A	N/A	N/A	N/A	N/A
	Kitchen aerators	Indigenous	$137.55	$140.20	$171.47	0.00	0.00	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Bathroom aerators	Indigenous	$290.31	$295.90	$361.91	0.01	0.01	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Pre-rinse spray valves	Indigenous	$437.50	$445.91	$545.39	0.01	0.01	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	A-line LED bulbs	Indigenous	$8,928.00	$9,099.69	$11,129.62	0.09	0.09	0.11	0.02	0.02	0.02	N/A	N/A	N/A	N/A	N/A	N/A
	Dimmer switches	Indigenous	$828.38	$844.31	$1,032.66	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	T8 ballasts	Indigenous	$42,975.00	$43,801.44	$53,572.53	0.03	0.03	0.04	0.01	0.01	0.01	N/A	N/A	N/A	N/A	N/A	N/A
	T8 LED linear lamps and T8 EE linear lamps	Indigenous	$64,982.67	$66,232.33	$81,007.24	0.09	0.09	0.11	0.03	0.03	0.03	N/A	N/A	N/A	N/A	N/A	N/A
	T8 tandem fixtures	Indigenous	$6,970.00	$7,104.04	$8,688.79	0.01	0.01	0.01	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Specialty LED lamps	Indigenous	$16,133.02	$16,443.27	$20,111.38	0.09	0.09	0.11	0.02	0.02	0.03	N/A	N/A	N/A	N/A	N/A	N/A
	Exit signs	Indigenous	$850.00	$866.35	$1,059.61	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Showerheads	Indigenous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Smart thermostats	Indigenous	$29,412.00	$29,977.62	$36,664.93	0.10	0.10	0.12	0.05	0.05	0.06	N/A	N/A	N/A	N/A	N/A	N/A
	Cross promote HVAC and controls offers	Indigenous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cross promote renovation offers	Indigenous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY GEOTHERMAL	**Geothermal heat pumps**	Indigenous	$245,000.00	$424,510.00	$432,673.00	0.77	1.24	1.24	0.38	0.62	0.62	N/A	N/A	N/A	N/A	N/A	N/A
METIS INCOME QUALIFIED	**Home energy efficiency upgrades:**																
	Home Energy Assessment	Indigenous	$4,842.00	$4,786.00	$4,878.00	0.00	0.00	0.00	1.68	1.63	1.63	$7,433.00	$7,441.00	$7,584.00	0.00	0.00	0.00
	Insulation	Indigenous	$59,220.00	$56,335.00	$57,418.00	0.13	0.12	0.12	0.07	0.06	0.06	$118,440.00	$116,694.00	$114,837.00	0.03	0.03	0.03
	Natural gas furnace or boiler	Indigenous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$83,850.00	$77,615.00	$71,108.00	0.02	0.02	0.01
	Energy-saving and water-saving devices	Indigenous	$580.00	$577.00	$588.00	0.03	0.03	0.03	0.00	0.00	0.00	$711.00	$710.00	$724.00	0.00	0.00	0.00
	LED bulbs	Indigenous	$2,804.00	$2,825.00	$2,814.00	0.02	0.02	0.02	0.01	0.01	0.01	N/A	N/A	N/A	N/A	N/A	N/A
	Air sealing measures (Included in Home Energy Assesment)	Indigenous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Smart thermostats	Indigenous	$0.00	$5,708.00	$5,817.00	0.00	0.00	0.00	0.00	0.00	0.00	$0.00	$9,988.00	$9,817.00	0.00	0.00	0.00
	ENERGY STAR certified clothes washers	Indigenous	$0.00	$23,646.00	$24,101.00	0.00	0.01	0.01	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
SMALL BUSINESS & APPLIANCE OFFERS**	**Commercial kitchen appliances**																
	Steamers	Commercial, Industrial, Agricultural	$31,429.00	$32,033.00	$32,723.00	0.16	0.16	0.16	0.05	0.05	0.05	$2,857.14	$2,912.09	$4,452.13	0.00	0.00	0.01
	Fryers	Commercial, Industrial, Agricultural	$3,714.29	$3,785.71	$3,873.36	0.03	0.03	0.03	0.01	0.01	0.01	$99,428.57	$101,340.66	$103,289.52	0.11	0.11	0.11
	Convection ovens	Commercial, Industrial, Agricultural	$8,666.67	$8,833.33	$9,037.83	0.06	0.06	0.06	0.01	0.01	0.01	$985.71	$1,004.67	$1,023.99	0.02	0.02	0.02
	Dishwashers	Commercial, Industrial, Agricultural	$20,911.89	$21,323.75	$21,793.04	0.56	0.56	0.56	0.06	0.06	0.06	N/A	N/A	N/A	N/A	N/A	N/A
	Griddles	Commercial, Industrial, Agricultural	$5,714.29	$5,824.18	$5,951.02	0.06	0.06	0.06	0.01	0.01	0.01	$2,160.00	$2,201.54	$2,243.88	0.02	0.02	0.02
	Hot food holding cabinets	Commercial, Industrial, Agricultural	$191,619.05	$195,304.03	$199,109.64	1.25	1.25	1.25	0.14	0.14	0.14	N/A	N/A	N/A	N/A	N/A	N/A
	Commercial refrigeration equipment																
	New vertical display cases with standard doors and anti-sweat heater (ASH controls)	Commercial, Industrial, Agricultural	$82,148.00	$87,914.00	$94,085.00	0.66	0.70	0.73	0.10	0.11	0.11	N/A	N/A	N/A	N/A	N/A	N/A
	New vertical display cases with special (heat free) doors, ECM evaporator fan motors, and evaporator efficiency controllers	Commercial, Industrial, Agricultural	$104,662.00	$112,008.00	$119,870.00	0.83	0.09	0.92	0.10	0.11	0.11	N/A	N/A	N/A	N/A	N/A	N/A
	Night covers	Commercial, Industrial, Agricultural	$37,658.00	$40,301.00	$43,130.00	0.72	0.75	0.79	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	High-efficiency compressors	Commercial, Industrial, Agricultural	$233.00	$250.00	$267.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Strip curtains and door gaskets	Commercial, Industrial, Agricultural	$151,776.00	$162,429.00	$173,831.00	5.01	5.26	5.52	0.71	0.74	0.78	N/A	N/A	N/A	N/A	N/A	N/A
	Automatic door closers	Commercial, Industrial, Agricultural	$6,173.00	$6,606.00	$7,069.00	0.67	0.71	0.74	0.10	0.10	0.11	N/A	N/A	N/A	N/A	N/A	N/A
	LED display cases and walk-in box lighting	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Small Business																
	Kitchen aerators	Commercial, Industrial, Agricultural	$3,012.40	$3,070.33	$3,129.37	0.10	0.10	0.10	0.02	0.02	0.02	$2,738.54	$2,791.21	$2,844.88	0.01	0.01	0.01
	Bathroom aerators	Commercial, Industrial, Agricultural	$6,357.88	$6,480.15	$6,604.77	0.24	0.24	0.24	0.04	0.04	0.04	$2,825.73	$2,880.07	$2,935.45	0.01	0.01	0.01
	Pre-rinse spray valves	Commercial, Industrial, Agricultural	$9,581.25	$9,765.50	$9,953.30	0.21	0.21	0.21	0.03	0.03	0.03	$5,748.75	$5,859.30	$5,971.98	0.11	0.11	0.11
	A-line LED bulbs	Commercial, Industrial, Agricultural	$195,523.20	$199,283.26	$203,115.63	1.77	1.77	1.77	0.39	0.39	0.39	N/A	N/A	N/A	N/A	N/A	N/A
	Dimmer switches	Commercial, Industrial, Agricultural	$6,854.02	$6,985.83	$7,120.18	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	T8 ballasts	Commercial, Industrial, Agricultural	$355,575.15	$362,413.13	$369,382.62	0.35	0.35	0.35	0.09	0.09	0.09	N/A	N/A	N/A	N/A	N/A	N/A
	T8 LED linear lamps and T8 EE linear lamps	Commercial, Industrial, Agricultural	$550,964.08	$561,559.55	$572,358.77	1.03	1.03	1.03	0.29	0.29	0.29	N/A	N/A	N/A	N/A	N/A	N/A
	T8 tandem fixtures	Commercial, Industrial, Agricultural	$57,669.78	$58,778.81	$59,909.18	0.07	0.07	0.07	0.02	0.02	0.02	N/A	N/A	N/A	N/A	N/A	N/A
	Specialty LED lamps	Commercial, Industrial, Agricultural	$133,485.00	$136,052.01	$138,668.40	1.09	1.09	1.09	0.27	0.27	0.27	N/A	N/A	N/A	N/A	N/A	N/A
	Exit signs	Commercial, Industrial, Agricultural	$7,032.90	$7,168.15	$7,306.00	0.02	0.02	0.02	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Showerheads	Commercial, Industrial, Agricultural	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Smart thermostats	Commercial, Industrial, Agricultural	$33,021.02	$33,656.04	$34,303.27	0.16	0.16	0.16	0.08	0.08	0.08	$99,063.05	$100,968.11	$102,909.80	0.04	0.04	0.04
	Cross promote HVAC and controls offers	Commercial, Industrial, Agricultural	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cross promote renovation offers	Commercial, Industrial, Agricultural	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IN-SUITE EFFICIENCY	**Energy-efficient upgrades installed at no charge include:**																
	Up to two energy-efficient showerheads (5.7 LPM)	Commercial, Industrial, Agricultural	$5,505.53	$8,417.11	$11,438.64	0.11	0.17	0.23	0.01	0.02	0.02	$12,846.24	$19,639.93	$26,690.16	0.03	0.04	0.06
	One energy-efficient kitchen aerator (5.7 LPM)		$580.50	$887.50	$1,206.08	0.05	0.07	0.09	0.00	0.01	0.01	$1,354.50	$2,070.82	$2,814.19	0.01	0.02	0.02
	Up to two energy-efficient bathroom aerators (5.7 LPM)	Commercial, Industrial, Agricultural	$675.00	$1,031.97	$1,402.42	0.05	0.07	0.09	0.00	0.01	0.01	$1,575.00	$2,408.00	$3,272.00	0.01	0.02	0.02
	Water heater pipe wrap insulation		$742.50	$1,135.17	$1,542.66	0.01	0.02	0.03	0.01	0.01	0.02	$1,732.50	$2,648.73	$3,599.55	0.00	0.01	0.01
	Up to nine LED bulbs	Commercial, Industrial, Agricultural	$37,800.00	$57,790.38	$78,535.65	0.30	0.45	0.61	0.10	0.14	0.19	N/A	N/A	N/A	0.00	0.00	0.00
	Energy-efficient upgrades eligible for incentives:		$0.00	$0.00	$0.00										0.00	0.00	0.00
	Heat recovery ventilator (HRV) controls	Commercial, Industrial, Agricultural	$5,148.00	$7,870.50	$10,695.81	0.02	0.03	0.04	0.01	0.01	0.02	$7,722.00	$11,805.75	$16,043.71	0.00	0.00	0.01
	Thermostats	Commercial, Industrial, Agricultural	$8,493.10	$12,984.64	$17,645.79	0.13	0.19	0.26	0.06	0.10	0.13	$12,739.65	$19,476.96	$26,468.69	0.02	0.03	0.04
RENOVATION OFFERS***	**Lighting products**																
	LED lamps (screw-in T8, T5)	Commercial, Industrial, Agricultural	$1,907,726.19	$1,782,185.67	$1,672,370.09	15.17	13.91	12.81	5.62	5.15	4.74	$0.00	$0.00	0.00	0.00	0.00	0.00
	LED specialty lamps (HID ballast, line voltage)	Commercial, Industrial, Agricultural	$19,656.57	$18,363.04	$17,231.54	1.62	1.48	1.36	0.60	0.55	0.50	$0.00	$0.00	0.00	0.00	0.00	0.00
	LED fixtures	Commercial, Industrial, Agricultural	$12,650,921.43	$11,818,410.30	$11,090,177.76	88.95	81.53	75.06	25.01	22.92	21.10	$0.00	$0.00	0.00	0.00	0.00	0.00
	Backlit signage	Commercial, Industrial, Agricultural	$312,835.45	$292,248.89	$274,240.96	1.70	1.56	1.43	0.34	0.31	0.28	$0.00	$0.00	0.00	0.00	0.00	0.00
	Lighting controls																
	Occupancy sensors & Control systems	Commercial, Industrial, Agricultural	$17,978.57	$16,795.47	$15,760.56	0.95	0.87	0.80	0.35	0.32	0.30	$0.00	$0.00	0.00	0.00	0.00	0.00
	Building envelope products and systems																
	Surface and cavity insulation for roof, attic, wall, and foundation applications; incidential and dedicated air sealing, blower door testing	Commercial, Industrial, Agricultural	$229,860.34	$372,418.44	$411,474.41	1.68	2.82	3.08	0.85	1.45	1.59	$1,083,035.71	$1,383,406.22	$1,568,928.50	0.66	0.87	0.98
	Window systems including punched, in-fill, curtain wall, and storefront; glazed doors including overhead, single-swinging, sliding, and garden; building component energy modelling for designing energy-efficient curtain wall and storefront systems	Commercial, Industrial, Agricultural	$171,547.58	$242,481.26	$263,200.67	0.66	0.89	0.96	0.26	0.36	0.39	$804,945.57	$527,949.21	$573,695.31	0.34	0.26	0.28
HVAC & CONTROLS OFFERS	**Heating technologies**																
	Condensing gas boilers	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$128,571.00	$131,044.00	$133,564.00	0.48	0.40	0.32
	Condensing gas water heaters	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$19,485.00	$21,710.00	$24,705.00	0.03	0.04	0.04
	Unit heaters	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$6,281.00	$7,427.00	$8,777.00	0.00	0.00	0.00
	Infrared heaters	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$21,429.00	$26,209.00	$31,165.00	0.03	0.06	0.09
	Geothermal (ground-source heat pumps)	Commercial, Industrial, Agricultural	$97,050.89	$98,917.26	$120,983.41	0.26	0.26	0.26	0.11	0.11	0.11	$38,820.36	$39,566.90	$40,327.80	0.02	0.02	0.02
	Cooling technologies																
	Air cooled chillers	Commercial, Industrial, Agricultural	$347,657.00	$413,400.00	$421,350.00	1.15	1.33	1.33	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Ventilation technologies																
	CO_2 sensors	Commercial, Industrial, Agricultural	$11,553.00	$11,776.00	$12,002.00	0.08	0.08	0.08	0.05	0.05	0.05	$62,581.00	$64,741.00	$66,976.00	0.04	0.04	0.04
	HRVs / energy recovery ventilators	Commercial, Industrial, Agricultural	$214,500.00	$235,022.00	$257,507.00	0.76	0.80	0.84	0.37	0.39	0.41	$255,450.00	$279,890.00	$306,668.00	0.19	0.20	0.21
	Other technologies																
	Variable frequency drives	Commercial, Industrial, Agricultural	$90,537.00	$88,587.00	$92,096.00	0.67	0.61	0.62	0.01	0.01	0.01	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Hotel occupancy sensors	Commercial, Industrial, Agricultural	$25,000.00	$25,481.00	$25,971.00	0.27	0.27	0.27	0.06	0.06	0.06	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Hotel packaged terminal heat pumps (PTHPs)	Commercial, Industrial, Agricultural	$23,810.00	$24,267.00	$24,734.00	0.12	0.12	0.12	0.03	0.03	0.03	$0.00	$0.00	$0.00	0.00	0.00	0.00
NEW CONSTRUCTION & HIGH-PERFORMANCE BUILDING OFFERS	**New Buildings**	Commercial, Industrial, Agricultural	$952,380.95	$1,213,369.96	$989,363.20	3.99	4.99	3.99	0.79	0.99	0.79	$1,428,571.43	$1,820,054.95	$1,484,044.80	0.45	0.56	0.45
	Enhanced Building Operations	Commercial, Industrial, Agricultural	$129,600.00	$250,939.95	$351,340.38	1.08	2.22	3.17	0.29	0.60	0.86	$129,600.00	$250,939.95	$351,340.38	0.09	0.18	0.26
	Manitoba Race to Reduce	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.93	1.53	0.00	0.11	0.07	0.00	$0.00	$0.00	$0.00	0.07	0.22	0.00
	Energy Scoping Audits	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
	Deep Energy Retrofits	Commercial, Industrial, Agricultural	$0.00	$0.00	$0.00	0.00	0.00	0.00	0.00	0.00	0.00	$0.00	$0.00	$0.00	0.00	0.00	0.00
CUSTOM OFFERS	**Industrial / Agricultural Custom**	Commercial, Industrial, Agricultural	$2,326,106.00	$1,826,520.00	$2,423,985.00	23.39	16.79	24.98	3.55	2.12	3.54	$1,515,521.00	$1,083,438.00	$1,025,157.00	5.10	3.68	3.52
	Energy Manager Initiative	Commercial, Industrial, Agricultural	$257,143.00	$234,667.00	$618,286.00	0.50	0.68	1.19	0.28	0.04	0.07	$20,057.00	$13,371.00	$20,057.00	0.07	0.05	0.07
	Strategic Energy Management Cohorts	Commercial, Industrial, Agricultural	$0.00	$0.00	$30,476.00	0.00	0.00	1.76	0.00	0.00	0.10	$0.00	$0.00	$7,429.00	0.00	0.00	0.26
	Commercial Custom	Commercial, Industrial, Agricultural	$76,190.48	$124,249.08	$174,127.92	0.29	0.46	0.63	0.03	0.05	0.07	$40,476.19	$66,007.33	$92,505.46	0.13	0.20	0.28
LOAD DISPLACEMENT OFFERS	**Load Displacement Program**	Industrial	$740,571.00	$5,342,069.00	$2,987,840.00	99.00	120.52	110.45	13.75	16.34	15.33	N/A	N/A	N/A	N/A	N/A	N/A
EMERGING TECHNOLOGY PROGRAMS	**Solar Energy Program**	All	$0.00	$0.00	$1,007,371.59	0.00	0.00	4.92	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A
	Customer Sited Bio-energy Program	All	$0.00	$147,305.00	$163,555.00	0.00	0.94	0.94	0.00	0.54	0.54	$0.00	$72,786.00	$98,103.00	0.00	0.17	0.17

Note: May not add up due to rounding.
* This bundle was designed in such a way that the electric interactive effects were applied at the bundle level. Table A6.4 on page 340 includes interactive effects, whereas the values in this spreadsheet do not. As a result, the numbers in this spreadsheet will appear higher than those listed in the plan.
** This bundle was designed in such a way that the electric interactive effects were applied at the bundle level. Table A7.2 on page 372 includes interactive effects, whereas the values in this spreadsheet do not. As a result, the numbers in this spreadsheet will appear higher than those listed in the plan.
*** In the Annual Capacity Savings (MW) (at generation) for all 3 years, there is a discrepancy between the plan table and this table at the hundredths decimal place. This discrepancy is due to a rounding error during the plan submission.

REFERENCE:

PDF 297, lines 383-385 Appendix A Section A4.5.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that the Individual Projects track is "designed for homeowners who have one or two specific energy efficiency projects in mind, as well as those who are energy-savvy or may not want to incur the expense of a Home Energy Audit"

QUESTION:

a) Please discuss the extent to which the Individual Projects track might divert customers from more comprehensive savings projects that would be completed if they participated instead in the Home Energy Audit track.
b) Does Efficiency Manitoba agree that it is relevant to attempt to maximize the savings that each participating customer obtains?
c) If the answer is yes, please describe how efficiency Manitoba will minimize the potential for the Individual Projects track to result in smaller savings per project than might occur if customers instead participated in the Home Energy Audit track. If no, please explain.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Offering the individual projects track will not likely divert customers from participating in the Home Energy Audit track. Customers participating in the Individual track tend to be more informed and more knowledgeable about energy efficiency and, in most cases, they may have a scope of work in mind such that the energy efficiency upgrade is complimentary to something they are already doing. For example, a customer may be residing the exterior of their home and is therefore interested in adding exterior wall

insulation under the siding when doing their residing project. It is estimated that the majority of these customers would not be swayed to participate in the Home Energy Audit program and therefore not offering a suitable option to participate would result in lost participation and savings to Efficiency Manitoba and the customer. Although Efficiency Manitoba will be encouraging all customers to achieve more energy savings through ongoing communication and promotion of its offers, it may not be a viable option for all customers to participate in the audit program for a variety of reasons such as they previously had an audit done on their home, cost, time, or lack of budget to perform more than one or two upgrades. Customers participating in the individual projects track can switch to the audit track if they so desire or they can continue to participate in individual rebate offers in the future when it makes sense for them to do so.

b) It is important to maximize the saving that each participating customer obtains as well as the number of participating customers which is why Efficiency Manitoba designed a flexible plan to meet the diverse needs of residential customers and maximize the number of participating customers as well as each customer's energy savings potential.

c) Efficiency Manitoba will not be minimizing the potential for any customers through either participation track as both participation streams target different customers and both steams offer different savings potential; a multi-measure potential and a single measure potential. It is important to maximize the potential savings for all customers rather than focusing on the needs of solely one segment of the population. Efficiency Manitoba recognizes that energy efficiency rebates and programs have been offered in the Manitoba market for many years through both Manitoba Hydro and the Federal government. Over the years, many customers have become knowledgeable about energy efficiency and many have previously participated in one or more energy efficiency programs. A number of residential customers have also previously had energy audits performed at their home through previous EcoENERGY programs initiated by the Federal government. As such Efficiency Manitoba feels it is important to offer a variety of flexible participation options to meet the different needs of customers, increase participation and achieve higher energy savings. Customers participating in the individual projects track can switch to the audit track if they so desire or they can continue to participate in individual rebate offers in the future when it makes sense for

them to do so. By offering two steams Efficiency Manitoba will avoid losing customers that otherwise would choose not to participate if the Home Energy Audit Track was made mandatory in order to access energy efficiency offers.

REFERENCE:

PDF 298, lines 403-407 Appendix A Section A4.5.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "The interest rate for the Home Energy Efficiency Loan will be determined by Manitoba Hydro and will be set at a rate that recovers all program administration costs. The methodology used, as confirmed by Manitoba Hydro, for calculating the interest rate is based on the aggregate of Manitoba Hydro's weighted average cost of capital (WACC), credit risk cost, and the average program administration cost."

QUESTION:

a) Please provide the estimated interest rate that participating customers will incur at each of the different loan terms that will be available.
b) Please provide the estimated monthly payment for a range of estimated project costs that would be associated with each interest rate/loan term pairing that will be available.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) It is estimated that the interest rate for the Home Energy Efficiency Loan will be set by Manitoba Hydro at a rate similar to the current rate of 4.8%. Customers will be eligible to choose a term of up to 5 years (15 years for natural gas furnaces, boilers and emerging technologies).

   The Home Energy Efficiency Loan interest rate is fixed over the specified term of the loan to a maximum of five years. Where applicable, at the end of the initial five-year term, the applicant is required to pay the principal amount remaining or refinance the

remaining principal over the remaining amortization period, at the prevailing Manitoba Hydro interest rate.

b) Please see the chart below for the estimated loan amounts, monthly payments and interest rates for a variety of projects eligible for financing under the Home Energy Efficiency Loan.

Customers are eligible to choose a loan term for up to 15 years dependent on the measure they are financing.

Project	Interest Rate	Loan Term	Average Loan Amount	Estimated Monthly Payment
High performance triple pane windows	4.8%	5 years	$5,176	$96.95
Insulation	4.8%	5 years	$3,850	$72.11
High efficiency natural gas furnace	4.8%	15 Years	$4,720	$36.58
Geothermal heat pump	4.8%	15 Years	$20,000	$156.02
Solar PV System	4.8%	15 Years	$20,000	$156.02

REFERENCE:

PDF 299, lines 417-418 Appendix A Section A4.5.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "The loan also supports emerging technologies where financial incentives are not offered."

QUESTION:

a) What criteria will Efficiency Manitoba use to determine if it is appropriate to include financing for an emerging technology in the Home Energy Loan?
b) Will Efficiency Manitoba require an estimate of the energy savings that emerging technology projects will produce?
c) If Efficiency Manitoba will require an estimate of the energy savings that emerging technology projects will produce, will it also require that emerging technology projects meet cost-effectiveness criteria?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) The Home Energy Efficiency Loan will work closely with Emerging Technology Programs to determine what emerging technologies are eligible for the loan. Efficiency Manitoba will rely on the work done through research and development and add to the eligibility listing once technologies have successfully entered the pilot project stage. Efficiency Manitoba will also finance emerging technologies through the custom energy efficiency project option, this will allow customers to bring forward new technologies that may not be on the eligible product listing but offer energy savings. The custom project option

allows Efficiency Manitoba to be as inclusive as possible with financing for emerging technologies.

b) With the exception of custom energy efficiency projects, Efficiency Manitoba will not require an estimate of the energy savings that individual projects will produce, as financing amounts are not based on monthly predicted energy savings; which was the procedure required for the Pay as You Save Program. Efficiency Manitoba will require eligible measures meet minimum efficiency levels and energy savings for these levels will be evaluated during the pilot project stage.

   Custom energy efficiency projects will require a technical assessment by an Efficiency Manitoba engineer to confirm the potential energy savings and to ensure the technology meets acceptable levels of safety and CSA standards where applicable.

c) Efficiency Manitoba will not require that emerging technology projects meet the same cost-effectiveness criteria as incentive programs in order to be eligible for financing. Financing is designed as an offer to support early adopters of emerging technologies that may save energy but have a higher capital cost.

REFERENCE:

PDF 300, lines 438-443 Appendix A Section A4.5.2.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba provides a list of products and measures that will be eligible under the Home Energy Efficiency Loan.

QUESTION:

a) What criteria, if any, will Efficiency Manitoba require be met for the listed products and measures in order to qualify for the Home Energy Efficiency Loan?
b) Will Efficiency Manitoba require an estimate of the energy savings that the listed products and measures will produce?
c) If Efficiency Manitoba will require an estimate of the energy savings that the listed products and measures will produce, will it also require that projects meet cost-effectiveness criteria?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) The Home Energy Efficiency Loan is a customer service initiative that supports energy efficient technologies and measures that improve the energy efficiency and comfort of a customers' home. The list of eligible measures includes a wide variety of products to be as inclusive as possible and to ensure there are opportunities for as many homeowners as possible. The listing of eligible measures is not a static document and Efficiency Manitoba may amend the list of eligible measures from time to time. However, in each case the eligible measures and products financed under the loan must become part of the asset (hard wired or products that become part of the home on install). Where

applicable, all electrical and natural gas work must be performed by licensed professionals.

b) Efficiency Manitoba will not require an estimate of the energy savings that an individual project will produce, as financing amounts are not tied to energy savings. Efficiency Manitoba will require products and measures to meet minimum efficiency levels of which the energy savings will have been previously determined.

c) Efficiency Manitoba will not require that products eligible for financing meet the same cost-effectiveness criteria as incentive based programs. Financing is offered to support technologies that may not meet these criteria while still providing customers energy savings and other benefits. Additionally, the Home Energy Efficiency Loan is a customer service initiative operated on a cost recovery basis by Manitoba Hydro. The program is not measured on cost-effectiveness criteria.

C b5REFERENCE:

PDF 302, Table A4.8 Appendix A Section A4.6.

PREAMBLE TO IR (IF ANY):

In Table A4.8 Efficiency Manitoba projects that the New Home & Major Renovation program will claim 430 projects in 2020/21, 440 in 2021/22, and 440 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Did Efficiency Manitoba consider the estimate of new homes that will be built in Manitoba in each of the program years when it determined the proposed participation numbers? How many new potentially eligible homes does Efficiency Manitoba expect will be built in each of the program years?
c) Please provide a listing of each measure category that is included in the number of projects for each year, as well as the quantity of each measure by year and the assumed savings for each measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Table A4.8 New Home & Major Renovation Energy & Greenhouse Gas Emissions Savings Summary (pdf page 302) should be revised as follows:

REVISED TABLE A4.8 NEW HOME & MAJOR RENOVATION ENERGY & GREENHOUSE GAS EMISSIONS SAVINGS SUMMARY

	2020/21	2021/22	2022/23
No. of houses or suites (electric)	275	415	450
Annual electric savings (GWh) (at generation)	3.32	3.63	3.67
Annual capacity savings (MW) (at generation)	1.66	1.81	1.82
No. of houses or suites (natural gas)	105	475	561
Annual natural gas savings (million m3)	0.07	0.16	0.17
Annual GHG emission reductions (tonnes CO_2e)	100	300	300

Highlighted sections have been revised.

a) Please see the response to DAYMARK/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Yes, Efficiency Manitoba considered the New Construction Forecast from Manitoba Hydro's 2018 Load Forecast to estimate the number of new homes built in Manitoba over each year of the plan. The forecasted numbers are provided in the following chart:

	Single Detached	Multi Attached	Total
2020/21	3,843	826	4,669
2021/22	3,699	795	4,494
2022/23	3,581	770	4,351

c) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 302-303, lines 479-482 Appendix A Section A4.6.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "builders, prime contractors, and/or customers will work either independently or with the energy advisor to design a new home that will perform at least 20 percent better than a comparable home built to minimum code requirements."

QUESTION:

a) Please provide any data showing the number of homes built in Manitoba in the recent past that achieved savings that were at least 20% better than code that Efficiency Manitoba considered in establishing the 20 percent better than code threshold.
b) Please provide any data showing the estimated incremental costs incurred for homes built in Manitoba in the recent past that achieved savings that were at least 20% better than code that Efficiency Manitoba considered in establishing the 20 percent better than code threshold.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Since the 2016/17 fiscal year, approximately 600 new homes in Manitoba applied for incentives from the New Homes Program and were built to the 20 percent better than code level, or beyond. The performance level of 20 percent better than code is consistent with eligibility levels for many other efficiency certification programs in Canada, such as ENERGY STAR® Certified Homes[1] and the CMHC Green Home mortgage insurance premium refund[2]. Current National energy performance standards for new homes begin at the 20 percent level[3].

The 20 percent minimum threshold also serves to ensure builders are taking a whole-home or systems approach to home design with energy efficiency as a specific goal. In certain cases, it is possible for new homes in Manitoba to achieve a 10 percent to 15 percent better than reference modelled energy performance score due to singular elements such as favorable site orientation or air tightness, without incorporating other aspects of energy efficiency into the design. Setting a minimum performance of 20 percent better than reference discourages applications of this type and reduces free ridership in the program.

During program development, 20 percent better than reference was determined as the level at which free ridership could be limited without consequently presenting an undue barrier to entry for builders and customers interested in energy efficient upgrading.

[1] https://www.nrcan.gc.ca/energy-efficiency/energy-star-canada/energy-star-new-homes/energy-starr-certified-homes/5057

[2] https://www.cmhc-schl.gc.ca/en/buying/mortgage-loan-insurance-for-consumers/cmhc-green-home

[3] https://www.bchydro.com/powersmart/residential/buying-a-home.html

b) The Prescriptive Path Technical Standard was formulated to generate an average 20 percent better than reference performance result across typical new home archetypes. As incentives are typically paid to builders, incremental costs for New Homes Program streams refer to the incremental cost to the builder rather than the cost to the customer. Below, please see the estimated incremental costs for each measure within the Prescriptive Path Technical Standard:

Prescriptive Path Technical Standard	
Measure	Incremental Cost
Attic insulation Effective R58	$ 300.00
Exterior above grade wall Effective R17	$ 800.00
Floor header (rim joist) insulation Effective R18	$ 300.00

Basement Insulation Effective R18	$ 800.00
Air tightness 1.5 ACH @50Pa	$ 500.00
Thermal Bridging Mitigation	$ -
Triple pane, Low-e argon, vinyl frame windows	$ 700.00
High efficient HRV SRE>64	$ 300.00
Advanced HRV Controller	$ 150.00
LED lighting	$ 500.00
Total	**$ 4,350.00**

REFERENCE:

PDF 304-305, lines 506-529 Appendix A Section A4.6.2.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba describes three participation tracks under the New Home and Renovation program, including Individual Measures, Prescriptive Path, and Performance Path.

QUESTION:

a) Please discuss the extent to which the Individual Measures track might divert customers from more comprehensive savings projects that would be completed if they participated instead in either the Prescriptive or Performance Path.
b) Does Efficiency Manitoba agree that it is relevant to attempt to maximize the savings that each participating customer obtains?
c) If the answer is yes, please describe how efficiency Manitoba will minimize the potential for the Individual Measures track to result in smaller savings per project than might occur if customers instead participated in the either the Prescriptive or Performance Path.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections

RESPONSE:

a) The New Homes Program was designed to operate primarily as a midstream incentive program, targeting and paying incentives to commercial homebuilders in Manitoba for the construction of energy efficient new homes. While awareness of the program is high, participation remains low among large, mid-range tract builders who collectively represent approximately 65 percent of the new home market in Manitoba. The Individual Measures offer is designed to remove barriers to entry for these builders,

who cite costs and complexity as their continued objections to participation in either stream of the current New Homes Program offer.

Builders who already participate regularly in the New Homes Program have a tendency to switch from the Prescriptive Path to the Performance Path over time. Builders have reported various reasons for this decision, including pursuit of larger incentives, increased organizational interest in EnerGuide labelling, and interest in experimenting with new and emerging technologies. It is predicted that by offering a simpler option to previously resistant builders, the New Homes Program can attract a meaningful number of new participants who will naturally progress toward higher performance targets and incentives over time.

While it may be possible that some participating builders may be initially diverted from the Prescriptive Path to the Individual Measures offer, the benefit gained by broader adoption of energy efficient measures in new construction is expected to significantly outweigh the impact of such attritions. The Prescriptive Path and Performance Path offer support to higher-efficiency projects. By providing a third, introductory-level option, it is anticipated that greater overall energy savings, particularly gas savings, will be achieved by the program.

b) Efficiency Manitoba agrees that maximizing the savings each participating customer obtains is a relevant objective; but also recognizes the benefits of introducing new technologies and construction practices in a new build where savings would have otherwise been non-existent.

c) At the bundle level, average savings per project may be slightly decreased when the Individual Measures offer joins the Prescriptive Path and Performance Path as part of the New Homes Program in 2021/22. However, as discussed in the response to a) and b), total energy savings and particularly natural gas savings achieved by the program are expected to be enhanced through the addition of this new offer. In order to further guard against participation regression, advertising and education initiatives for the Individual Measures offer will be focused toward mid-volume to high-volume tract builders who have never previously participated in the New Homes Program.

REFERENCE:

PDF 306, Table A4.10 Appendix A Section A4.7.

PREAMBLE TO IR (IF ANY):

In Table A4.10 Efficiency Manitoba projects that the Home Energy Efficiency Kits and Education program will reach 2,300 houses in 2020/21, 2,600 in 2021/22, and 2,600 in 2022/23.

QUESTION:

Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Please see the response to DAYMARK/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

REFERENCE:

PDF 307, lines 561-562, 565, 566 Appendix A Section A4.7.1.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "Home energy efficiency kits and resources will be distributed at community events throughout Manitoba" and "through schools throughout Manitoba."

QUESTION:

Please provide the number of projected houses that will be reached each year through community events and the number that will be reached through distribution in schools.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

The table below outlines the projected houses that will be reached though community events and schools each year.

Houses reached each year	**2020-21**	**2021-22**	**2022-23**
Community Events	3000	3000	3000
Schools	0	660	660

REFERENCE:

PDF 308, lines 577-585 Appendix A Section A4.7.2.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba lists a number of measures that may be included in Home Energy Efficiency kits.

QUESTION:

a) Has it been determined that the kits will include the measures that are listed, or are the measures that will be included still to be determined?
b) Please provide a listing of the measures that will be provided through the program for each year, including the quantity of each measure by year, the incentive cost, and the savings associated with each measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) The following devices may be included in the kits (please note not all customers will receive all items):
   - up to two energy-efficient showerheads (5.7 LPM)
   - one energy-efficient kitchen aerator (5.7 LPM)
   - up to two energy-efficient bathroom aerators (5.7 LPM)
   - water heater pipe wrap insulation
   - a shower timer
   - up to five LED bulbs
   - a tier 2 advanced power strip
   - a window insulating kit

- weatherstripping
- outdoor car plug timer

In addition, clotheslines will be available at select events where kits are distributed.

b) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 315, lines 44-45 and PDF 317, Table A5.1 Appendix A Section A5.1. and Section A5.2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "there are approximately 159,000 homes in Manitoba that fall below the LICO 125 threshold." In Table A5.1 Efficiency Manitoba projects that the Income Qualified program will reach 3,420 electric houses/suites in 2020/21, 3,160 in 2021/22, and 3,180 in 2022/23, and 3,600 natural gas houses/suites in 2020/21, 2,500 in 2021/22, and 2,400 in 2022/23.

QUESTION:

Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Table A5.1 Income Qualified Energy & Greenhouse Gas Emissions Savings Summary (2020/23 Efficiency Plan, Section A5.2, p.317 of 591) should be revised as per the table below. This table has been enhanced to provide more detail regarding the number of homes (i.e. houses or suites) participating in Income Qualified Offers, and the total number of retrofits taking place as part of Income Qualified Offers.

Please see the response to DAYMARK/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan. The goal is to ensure that each

house/suite completes all retrofits that it is eligible for to maximize the energy savings for each participating house/suite.

REVISED TABLE A5.1 INCOME QUALIFIED ENERGY & GREENHOUSE GAS EMISSIONS SAVINGS SUMMARY

	2020/21	2021/22	2022/23
No. of retrofits (electric) **No. of houses/suites (electric)**	3,420 500	3,990 500	3,950 490
Annual electric savings (GWh) (at generation)	2.53	2.70	2.65
Annual capacity savings (MW) (at generation)	0.94	0.95	0.93
No. of retrofits (natural gas) **No. of houses/suites (natural gas)**	3,240 1,300	3,700 1,280	3,900 1,270
Annual natural gas savings (million m^3)	1.08	1.07	1.09
Annual GHG emission reductions (tonnes CO_2e)	2,000	2,000	2,000

Highlighted sections have been revised.

One house/suite participating in Income Qualifying Offers may undergo one or more retrofit(s). One retrofit is defined as follows:

- Installation of water and energy savings devices (energy efficient showerheads and faucet aerators)
- Installation of LED bulbs
- Air sealing measures (window insulating kits, electrical socket draft stoppers and caps, and hot water tank pipe wrap)
- Insulation upgrades
- Standard efficiency furnace to high efficiency furnace upgrade
- Mid efficiency furnace to high efficiency furnace upgrade (considered for enhancement in 2022)
- Boiler upgrade
- Smart thermostat
- Front load clothes washer

The following tables have also been revised:

- Table 5.8 (2020/23 Efficiency Plan, Section 5.5.1, p.142 of 591)
- Table 5.9 (2020/23 Efficiency Plan, Section 5.5.2, p.142 of 591)
- Annual Natural Gas Participation and Annual Electric Participation (2020/23 Efficiency Plan, Attachment 3 – Technical Tables, pages 512 and 518 of 591)
    - Annual Natural Gas Participation (2020/23 Efficiency Plan, Attachment 3, p.512 of 591) – Please see the attachment to this response.
    - Annual Electric Participation (2020/23 Efficiency Plan, Attachment 3, p.518 of 591) – Please see the attachment to this response.

REVISED TABLE 5.1 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.

REVISED TABLE 5.2 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) $4,000 (carbon charge) $18,000
Income qualified		$290/house	$287,000 (natural gas) $82,000 (carbon charge) $369,000
Residential		$20/house	$426,000 (natural gas) $131,000 (carbon charge) $557,000
Commercial, industrial & agricultural	Small business	$70/business	$1,452,000 (natural gas) $567,000 (carbon charge) $2,019,000
	Suites	$20/suite	
	Other business	$3,800/business	
Emerging Technology Programs		< 10 projects	$23,000 (natural gas) $9,000 (carbon charge) $32,000
Total annual natural gas customer bill savings			**$3,000,000**

Highlighted sections have been revised.

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ATTACHMENT 3 - TECHNICAL TABLES

Annual Natural Gas Participation

		UNITS	2020/21	2021/22	2022/23
RESIDENTIAL PROGRAMS					
	Direct Install	No. of houses	1,200	1,800	2,400
	Product Rebates	No. of products	39,000	34,000	23,000
	Home Renovation	No. of projects	1,200	9,400	9,000
	New Homes & Major Renovation	No. of houses	300	300	300
	Home Energy Efficiency Kits & Education	No. of kits	700	1,100	1,100
INCOME QUALIFIED PROGRAMS					
	Income Qualified Offers	No. of retrofits	3,200	3,700	3,900
INDIGENOUS PROGRAMS					
	Metis Income Qualified	No. of retrofits	200	200	200
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS					
	Small Business & Appliances	No. of appliances	1,400	1,400	1,400
	In-Suite Efficiency	No. of suites	1,200	1,800	2,400
	Renovation	No. of projects	200	200	200
	HVAC & Controls	No. of units	200	200	200
	New Construction & High-Performance Buildings	No. of buildings	30	100	100
	Custom	No. of projects	20	20	30
EMERGING TECHNOLOGY PROGRAMS					
	Emerging Technology	No. of customers	< 10	< 10	< 10

Highlighted sections have been revised

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ATTACHMENT 3 - TECHNICAL TABLES

Annual Electric Participation

		UNITS	2020/21	2021/22	2022/23
RESIDENTIAL PROGRAMS					
	Direct Install	No. of houses	800	1,200	1,600
	Product Rebates	No. of products / ap	354,000	275,000	195,000
	Home Renovation	No. of projects	800	4,700	3,900
	New Homes & Major Renovation	No. of houses	400	400	400
	Home Energy Efficiency Kits & Education	No. of kits	2,300	2,600	2,600
INCOME QUALIFIED PROGRAMS					
	Income Qualified Offers	No. of retrofits	3,400	4,000	4,000
INDIGENOUS PROGRAMS					
	Insulation and Direct Install	No. of houses	100	150	180
	Small Business	No. of businesses	30	30	40
	Community Geothermal	No. of systems	50	90	90
	Metis Income Qualified	No. of retrofits	180	220	220
COMMERCIAL, INDUSTRIAL & AGRICULTURAL PROGRAMS					
	Small Business & Appliances	No. of applications	900	900	1,000
	In-Suite Efficiency	No. of suites	800	1,200	1,600
	Renovation	No. of projects	1,800	1,700	1,600
	HVAC & Controls	No. of units	800	800	800
	New Construction & High-Performance Buildings	No. of buildings	30	100	70
	Custom	No. of projects	80	80	100
	Load Displacement	No. of projects	< 10	< 10	< 10
EMERGING TECHNOLOGY PROGRAMS					
	Emerging Technology	No. of customers	0	< 10	220

Highlighted sections have been revised

REFERENCE:

PDF 317, Table A5.1 Appendix A Section A5.2

PREAMBLE TO IR (IF ANY):

In Table A5.1 Efficiency Manitoba projects that the Income Qualified program will reach 3,420 electric houses/suites in 2020/21, 3,160 in 2021/22, and 3,180 in 2022/23, and 3,600 natural gas houses/suites in 2020/21, 2,500 in 2021/22, and 2,400 in 2022/23.

QUESTION:

Please provide a list of the measures that Efficiency Manitoba projected and based its costs and savings estimates on in each track, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Please see the updated Table A5.1 provided in the response to COALTION/EM I-102 for a revised number of houses/suites projected to participate in Income Qualified Offers.

Please see the response to COALITION/EM I – 91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 319, lines 117-123 Appendix A Section A5.2.2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba provides a listing of several high efficiency natural gas furnace upgrade options, including a payment of $9.50 per month for five years when replacing a standard-efficiency natural gas furnace, and a payment of $36.67 per month for five years when replacing a mid-efficiency natural gas furnace.

QUESTION:

Please explain the derivation of and rationale for the two different payment structures. Please include any analysis conducted by Efficiency Manitoba regarding the energy savings that customers in each category might obtain, and how the bill savings that result will compare with the monthly payments.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

The Furnace Replacement Program was introduced in July 2008 as a result of PUB Board Order 99/07 to assist lower income homeowners in replacing their standard-efficiency natural gas furnace with a high-efficiency furnace. The program was offered as a subsidized loan with a customer monthly payment of $19.50 for a term of five years. Effective August 1, 2013, as per Order 85/13, this customer loan payment was decreased to $9.50 per month and this rate has remained in place since this time.

As detailed in PUB/EM-10a, the Furnace Replacement Program is being continued at the current rate for upgrading a standard efficiency furnace and introducing mid-efficiency upgrade

option in year three of the Plan as an enhanced measure to address the affordability and high upfront cost of a new furnace for a lower income customer.

The estimated energy and bill savings associated with each furnace upgrade are illustrated in the table below and can be explained as follows:

- The derivation of the monthly payment of $9.50 is from PUB Order 85/13 and the rational for continuing with this rate is detailed in the response to PUB/EM-10a. Maintaining this rate produces a net decrease in the customer's monthly bill. The total customer co-payment for this is estimated to be 13% of the total cost.

- The derivation of the monthly payment of $36.67 is based on a 50% co-payment cost by the customer. The rational for introducing a mid-efficiency furnace upgrade is to provide a solution for a lower income customer to install a high efficiency furnace who may not be able to otherwise afford an upgrade, while still achieving modest energy savings. This has been detailed in the response to PUB/EM-10a. It has been identified there is a need in the lower income market for a mid-efficiency furnace upgrade and the $36.67 monthly payment has been deemed a manageable amount for the customer to pay. The increased cost to the customer (monthly payment minus bill savings) is approximately $32 per month.

ESTIMATED SAVINGS	Estimated Average Annual Energy Savings*	Estimated NG Bill Savings**	Estimated Federal Carbon Charge Savings	Total Estimated Savings**	Customer Co-payment***
Standard Efficiency Furnace Upgrade	880 m^3	$151.89/year ($12.66/month)	$34.41/year ($2.87/month)	$186.30/year ($15.52/month)	$114.00/year ($9.50/month)
Mid-Efficiency Furnace Upgrade	250 m^3	$43.15/year ($3.60/month)	$9.78/year ($.81/month)	$52.93/year ($4.41/month)	$440.00/year ($36.67/month)

**Estimated energy savings are determined through engineering analysis of average consumption of heating systems, not including interactive effects.*

***Based on rates as of November 1st, 2019.*

****Based on analysis of furnace upgrades costs through the Affordable Energy Program, the average cost per replacement is $4,400.*

REFERENCE:

PDf 319, lines 126-130 Appendix A Section A5.2.2

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that beginning in year two of the plan, based on individual demographics of the home, customers may be eligible for a free front load clothes washer and/or a free smart thermostat.

QUESTION:

Please explain the relevant individual demographics of the home for each measure and include the derivation of and rationale for any applicable qualification criteria.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Front load clothes washers and smart thermostats are part of the enhanced Income Qualified Offers and are included to maximize energy savings that can be achieved in a lower income household. Their inclusion is based on the analysis of some key differences of a LICO 125 and non LCO 125 customer as observed from the 2017 Residential Energy Use Survey:

- Only 29% of LICO 125 customers operate a front load clothes washer compared to 48% of the non-LICO 125 market.
- 47% of LICO 125 customers are still using a manually controlled thermostat compared to 30% of the non-LICO 125 market, considering there is no difference between these two markets that have home internet access.

The eligibility for a front load clothes washer upgrade will be limited to households with four residents or more. The rationale for this is that the savings attributed to the replacement of a

top load under this scenario are estimated to be 25% higher than a home with fewer occupants. The participant would also have to be currently operating an inefficient top load clothes washer to be eligible for the upgrade. As a result, there are more energy savings to be realized by the upgrade, and thus improved cost effectiveness for the program bundle.

The be eligible for the smart thermostat upgrade the home must have Wi-Fi access. The 2017 Residential End Use Survey states that approximately 70% of low income households have home internet access. The type of thermostat installed will be according to individual customer preferences based on ability to use the technology. For example, some customers may prefer an upgrade from a manual to a programmable thermostat due to their age or their comfort level with technology. The upgraded thermostat must be compatible with the homes existing or upgraded heating system.

REFERENCE:

PDF 333, lines 92-98 Appendix A Section A6

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states "This initiative can enhance existing capacity by providing funding, technical, and other staff support towards a Community Energy Advocate who can focus on energy efficiency initiatives in the community and ensure programs and offers are accessed."

QUESTION:

a) Please list any pre-existing community energy plans that have either been completed, or the development of which is underway, of which Efficiency Manitoba is aware.
b) Please explain how the offer will complement or capitalize on any pre-existing community energy plans in eligible communities.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Efficiency Manitoba is aware of the Community Energy Plan pilot delivered in partnership by Manitoba Hydro and two communities: Dauphin and The Pas. Efficiency Manitoba is aware of intentions for Community Energy Plans for a few Northern First Nations communities as well as some rural communities. Efficiency Manitoba has yet to identify at what stage these communities are at for implementation.

b) The aim of the Community Energy Efficiency Plan offer will be to complement or leverage any pre-existing community energy plan where possible. How specifically that will be accomplished will need to be determined in coordination with the specific community.

REFERENCE:

PDF 336, Table A6.2 Appendix A Section A6.2.

PREAMBLE TO IR (IF ANY):

In Table A6.2 Efficiency Manitoba projects that the Indigenous Insulation and Direct Install program will reach 100 houses in 2020/21, 150 in 2021/22, and 180 in 2022/23.

QUESTION:

Please provide a list of the measures for each house that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 340, Table A6.4 Appendix A Section A6.3.

PREAMBLE TO IR (IF ANY):

In Table A6.4 Efficiency Manitoba projects that the Indigenous Small Business offers program will reach 30 buildings in 2020/21, 30 in 2021/22, and 40 in 2022/23.

QUESTION:

Please provide a list of the measures for each building that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 343, Table A6.6 Appendix A Section A6.4.

PREAMBLE TO IR (IF ANY):

In Table A6.6 Efficiency Manitoba projects that the Indigenous Community Geothermal program will reach 50 homes in 2020/21, 90 in 2021/22, and 90 in 2022/23.

QUESTION:

Please provide Efficiency Manitoba's assumptions for costs and savings per project, by year, including both incentive costs and estimated participant costs per project.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

As per the 2020/23 Efficiency Plan, Table A6.6 Appendix A Section A6.4, p.343 of 591, annual budget for the Community Geothermal Program, is estimated to be $323,000, $505,000, and $515,000 for each of the Plan years, respectively, with associated saving of 0.77 GWh (50 homes), 1.24 GWh (90 homes), and 1.24 GWh (90 homes). Budget and savings are summarized as follows:

Community Geothermal Program	2020/21	2021/22	2022/23
Participating Customers	50	90	90
Budget	$323,000	$505,000	$515,000
Budget per Participating Customer	$6,460	$5,611	$5,722
Savings (GWh)	0.77	1.24	1.24
Savings (kWh) per Participating Customer	15,400	13,777	13,777
Participant Cost per Project	$0	$0	$0

Incentive costs are detailed in the response to COALITION/EM I-91c. As per the response to COALITION/EM I-63, there is no cost to the participants.

REFERENCE:

PDF 346, Table A6.8 Appendix A Section A6.5.

PREAMBLE TO IR (IF ANY):

In Table A6.8 Efficiency Manitoba projects that the Metis Income Qualified program will reach 190 electric houses/suites in 2020/21, 190 in 2021/22, and 300 in 2022/23, and 180 natural gas houses/suites in 2020/21, 120 in 2021/22, and 120 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each house that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Table A6.8 Metis Income Qualified Energy & Greenhouse Gas Emissions Savings Summary (2020/23 Efficiency Plan, Section A6.5.1, p.346 of 591) should be revised as per the table below. This table has been enhanced to provide more detail regarding the number of homes participating in the Metis Income Qualified Program, and the total number of retrofits taking place as part of the Metis Income Qualified Program.

REVISED TABLE A6.8 METIS INCOME QUALIFIED ENERGY & GREENHOUSE GAS EMISSIONS SAVINGS SUMMARY

	2020/21	2021/22	2022/23
No. of retrofits (electric) **No. of houses (electric)**	180 30	220 30	220 30
Annual electric savings (GWh) (at generation)	0.18	0.19	0.19
Annual capacity savings (MW) (at generation)	0.08	0.07	0.07
No. of retrofits (natural gas) **No. of houses (natural gas)**	160 60	180 60	190 60
Annual natural gas savings (million m3)	0.05	0.05	0.05
Annual GHG emission reductions (tonnes CO2e)	100	100	100

Highlighted sections have been revised.

One house participating in Metis Income Qualified Offers may undergo one or more retrofit(s). One retrofit is defined as follows:

- Installation of water and energy savings devices (energy efficient showerheads and faucet aerators)
- Installation of LED bulbs
- Air sealing measures (window insulating kits, electrical socket draft stoppers and caps, and hot water tank pipe wrap)
- Insulation upgrades
- Standard efficiency furnace to high efficiency furnace upgrade
- Mid efficiency furnace to high efficiency furnace upgrade (considered for enhancement in 2022)
- Boiler upgrade
- Smart thermostat
- Front load clothes washer

The goal is to ensure that each house completes all retrofits that it is eligible for to maximize the energy savings for each participating house.

The following tables have also been revised:

- Table 5.8 (2020/23 Efficiency Plan, Section 5.5.1, p.142 of 591) – please see COALITION/EM I-102
- Table 5.9 (2020/23 Efficiency Plan, Section 5.5.2, p.142 of 591) – please see COALITION/EM I-102
- Technical Tables in Attachment 3:
    - Annual Natural Gas Participation (2020/23 Efficiency Plan, Attachment 3, p.512 of 591) – Please see the attachment to COALITION/EM I-102
    - Annual Electric Participation (2020/23 Efficiency Plan, Attachment 3, p.518 of 591) – Please see the attachment to COALITION/EM I-102

Please see the response to DAYMARK/EM I-13d for a description of how participation estimates were determined.

b) Please see the response to COALITION/EM I – 91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 372, Table A7.3 Appendix A Section A7.3.

PREAMBLE TO IR (IF ANY):

In Table A7.3 Efficiency Manitoba projects that the Small Business and Appliance program will reach 900 electric projects in 2020/21, 900 in 2021/22, and 1,000 in 2022/23, and 1,400 natural gas projects in 2020/21, 1,400 in 2021/22, and 1,400 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I – 13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALITION/EM I – 91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 374, lines 193-194 Appendix A Section A7.3.2.

PREAMBLE TO IR (IF ANY):

Regarding Commercial Kitchen Appliances, Efficiency Manitoba states that "ENERGY STAR certified appliances may qualify for rebates under this initiative."

QUESTION:

Did Efficiency Manitoba assess and consider whether any commercial kitchen appliances are available that are more energy efficient than ENERGY STAR? Did Efficiency Manitoba consider offering enhanced incentives for higher efficiency equipment, to the extent that such equipment is available?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

When determining eligible commercial kitchen equipment, Efficiency Manitoba used the ENERGY STAR certification test standard as the baseline, which is consistent among other jurisdictions. The program references ENERGY STAR equipment as eligible to help customers quickly determine product eligibility when faced with short decision cycles.

ENERGY STAR is a very recognizable brand and customers can be confident they are buying an efficient piece of equipment when it is ENERGY STAR qualified.

Efficiency Manitoba has considered that ENERGY STAR is a voluntary program and some manufacturers choose not to certify their equipment. For this reason, Efficiency Manitoba will honour incentives for non-ENERGY STAR certified equipment that meets the criteria of the ENERGY STAR test standard.

At this time Efficiency Manitoba has not considered offering enhanced incentives for higher efficiency equipment and plans to incent all equipment that meets the baseline ENERGY STAR test standard. Efficiency Manitoba staff will continually monitor equipment efficiency levels and will adjust incentive levels as needed to optimize participation and savings.

REFERENCE:

PDF 377, Table A7.4 Appendix A Section A7.4.

PREAMBLE TO IR (IF ANY):

In Table A7.4 Efficiency Manitoba projects that the In-Suite Efficiency program will reach 800 electric projects in 2020/21, 1,200 in 2021/22, and 1,600 in 2022/23, and 1,200 natural gas projects in 2020/21, 1,800 in 2021/22, and 2,400 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I–13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 379, Table A7.6 Appendix A Section A7.5.

PREAMBLE TO IR (IF ANY):

In Table A7.6 Efficiency Manitoba projects that the Renovation program will reach 1,800 electric projects in 2020/21, 1,700 in 2021/22, and 1,600 in 2022/23, and 160 natural gas projects in 2020/21, 170 in 2021/22, and 180 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I–13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 381, lines 287-289 Appendix A Section A7.5.2.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba indicates that lighting controls, including occupancy sensors and "control systems" will be eligible for financial incentives.

QUESTION:

Please describe, specifically, the types of lighting controls that will be eligible for incentives, the incentives that will be available for each type of lighting control, and the expected quantities of each type of lighting control, by year, that will receive incentives through the program.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

All lighting control systems will be considered for incentives, including:

- occupancy sensors,
- daylighting sensors,
- dimming systems,
- integrated controls, and
- network lighting controls.

The incentive rate for all control systems will be custom calculated up to $0.20 per kWh of annual savings, up to a maximum of 100% of material costs.

It is estimated that there will be 84 control projects in year 1, 77 in year 2, and 71 in year 3.

When creating the plan, the level of participation for each specific type of controls, was not identified, rather targets were set at the control category level. As a result of incentives being calculated using the same rate regardless of control type, and furthermore given equal savings generate an equal incentive, there is no change to project budget, savings, or cost-effectiveness by variations in which types of controls are installed.

REFERENCE:

PDF 383, Table A7.8 Appendix A Section A7.6.

PREAMBLE TO IR (IF ANY):

In Table A7.8 Efficiency Manitoba projects that the HVAC and Controls program will reach 770 electric projects in 2020/21, 770 in 2021/22, and 780 in 2022/23, and 200 natural gas projects in 2020/21, 210 in 2021/22, and 220 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I–13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALTION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 385, Table A7.10 Appendix A Section A7.7.

PREAMBLE TO IR (IF ANY):

In Table A7.10 Efficiency Manitoba projects that the New Construction and High Performance Building program will reach 30 electric projects in 2020/21, 100 in 2021/22, and 70 in 2022/23, and 30 natural gas projects in 2020/21, 100 in 2021/22, and 70 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I–13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 390, lines 443-445 Appendix A Section A7.7.3.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that it "will promote …an optional path to creating an overall energy efficiency plan for a facility."

QUESTION:

Please describe the specific attributes of such an overall energy efficiency plan: what will it include and address? Are there specific outcomes that Efficiency Manitoba expects to occur as a result of the development of the energy efficiency plans? Did Efficiency Manitoba estimate savings that will occur as a result of this program approach?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

Efficiency Manitoba will provide facility owners with resources for both Energy Screening Studies and Energy Scoping Audits.

Energy Screening Studies are provided by internal program staff and comprise of a relatively simple desktop review of a building's operations and energy consumption using Manitoba Hydro account information, historical meter data, and industry benchmarks. A site visit accompanies the screening study to help verify the in-house analysis, and customers are provided with a tailored energy efficiency plan upon completion.

Energy Scoping Audits will be provided by third-party engineering consultants and include a more detailed and standardized analysis of the facility and its energy-consuming systems. The

analysis will include a description of the current facility condition, mechanical and electrical systems, energy billing history, energy end uses, and a benchmark against similar facilities. Both the Energy Screening Studies and the Energy Scoping Audits will produce an energy efficiency plan for the facility in question. The plan that accompanies the Energy Screening Study will be simple and understandable and will focus its recommendations toward existing Efficiency Manitoba program offerings. The plan that follows the Energy Scoping Audit will include more detailed energy and financial analysis and can include recommendations that go beyond the scope of Efficiency Manitoba.

Specific attributes of the energy efficiency plan that is provided to participants at the conclusion of the more detailed Energy Scoping Audit include the results of the screening study / energy audit, and recommendations for energy-efficiency related upgrades to the facility. The recommendations will be prioritized based on the facility's needs and/or any specific requirements established by the building owner and will include details regarding the financial and energy impacts of the various recommended projects.

The energy efficiency plan will provide a high-level description of the current facility condition, mechanical and electrical systems, energy billing history, energy end uses, and a benchmark against similar facilities. Where applicable, the plan will describe potentially relevant Efficiency Manitoba offers and may reference other incentives, rebates, grants available through other sources. Energy-saving opportunities will be prioritized based on estimated payback and relevance to the customer.

The intent of the energy efficiency plan is to serve as tools to share greater awareness and exposure of available Efficiency Manitoba programs to a large segment of commercial buildings. It is envisioned that this greater awareness and exposure will lead to increased customer participation.

Efficiency Manitoba did not estimate savings that will occur as a result of this program approach, rather, this initiative will be used as a strategy to develop relationships with building owners by helping them overcome typical barriers that limit the implementation of energy efficient measures. Although Efficiency Manitoba did not estimate savings as a result of this program, this initiative is closely aligned with a number of key objectives including: supporting Efficiency Manitoba's strategic goal of transforming attitudes towards energy efficiency;

identifying innovative approaches to better serve Manitobans while achieving the mandated energy savings; and building and sustaining meaningful partnerships (third-party engineering consultants).

The Energy Screening Studies and Energy Scoping Audits provide a starting point for understanding current energy usage within a building, energy efficiency planning, an introduction to relevant Efficiency Manitoba offers, and a high-level map for energy-efficient measure implementation. No estimates were made to quantify the increase in program activity attributed directly to these studies and audits.

REFERENCE:

PDF 395, Table A7.12 Appendix A Section A7.8.

PREAMBLE TO IR (IF ANY):

In Table A7.12 Efficiency Manitoba projects that the Custom Offers program will reach 80 electric projects in 2020/21, 80 in 2021/22, and 100 in 2022/23, and 20 natural gas projects in 2020/21, 20 in 2021/22, and 30 in 2022/23.

QUESTION:

a) Please explain how the proposed participation numbers were determined, including a discussion of the range of participation that was considered before the proposed participation was reached.
b) Please provide a list of the measures for each project that Efficiency Manitoba projected and based its costs and savings estimates on, by year, along with the expected incentive costs and savings per measure.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

a) Please see the response to DAYMARK/EM I-13d for a description of how participation estimates were determined. Efficiency Manitoba did not undertake a formal sensitivity analysis for participation as part of the development of the Plan.

b) Please see the response to COALITION/EM I–91c for a listing of each measure as well as incentive costs and savings per measure.

REFERENCE:

PDF 397, lines 576-578 Appendix A Section A7.8.3.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "The Energy Manager Initiative will provide custom performance-based incentives, as well as funding for third party training and consulting services, for organizations to hire or appoint an embedded energy manager."

QUESTION:

Please provide an estimate of the number of customers that will participate in this initiative by year, the duration of the energy manager engagement, and the expected average FTE equivalent of each energy manager position.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

The Energy Manager Initiative is targeting large commercial and industrial customers with annual energy consumption greater than 50 gigawatt hours (GWh), thereby having the largest energy saving potential. There are 21 potential participants that meet this annual energy consumption criteria and Efficiency Manitoba has proposed to add one new Energy Manager Initiative participant during each year of the three year plan. The anticipated engagement period for each Energy Manager will be three years; however the term is subject to negotiation with each potential participant based on unique business needs. Each Energy Manager is to be a dedicated full-time (1 FTE) employee of the specific business taking part in the program, or a contractor hired for the term of the agreement. The Energy Manager will deliver energy management activities solely to the business who has hired them, so it is important that the Energy Manager have a good understanding not only of the energy use profile for the

respective customer, but also knowledge of the internal processes that will ensure changes persist beyond the engagement period.

REFERENCE:

PDF 398, lines 581-593 Appendix A Section A7.8.3.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba provides a general description of the Strategic Energy Management program.

QUESTION:

Please provide an estimate of the number of customers that will participate in this initiative by year, as well as the duration of the engagement.

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

The Strategic Energy Management Cohort is targeting one Strategic Energy Management Cohort to be under contract by year 3 -2022/23. The Strategic Energy Management Cohort is to provide energy management activities to between 8 and 12 separate participants. For program design purposes a value of 10 participants per Strategic Energy Management Cohort was used.

The engagement period for the Strategic Energy Management Cohort will be three years, and is subject to negotiation with each potential participant.

REFERENCE:

PDF 398, lines 589-590 Appendix A Section A7.8.3.

PREAMBLE TO IR (IF ANY):

Efficiency Manitoba states that "The Strategic Energy Management Program will allow smaller customers to engage in energy management."

QUESTION:

How are "smaller customers" defined in this context?

RATIONALE FOR QUESTION:

Understanding Efficiency Manitoba's assumptions in detail is necessary to assess the reasonableness of their program selections and projections.

RESPONSE:

The Strategic Energy Management Program is targeting business customers in Manitoba with annual energy consumption between 4 and 50 gigawatt-hours (GWh). The term “smaller” is as it relates to the Energy Manager Program discussed in response to COALITION/EM I-120.There are over 200 potential participants meeting this energy consumption criterion across all sectors in Manitoba, and each of these target customers has unique business processes and needs. The size of these customers may not warrant a full-time energy manager, and therefore the model proposed for this program will group customers into cohorts and commit participants existing staff part-time to energy management activities.

REFERENCE:

PDF 533 Attachment 4 Consultant memos

PREAMBLE TO IR (IF ANY):

Different jurisdictions include different programs in their portfolios, and relatively few include savings from Codes and Standards initiatives

QUESTION:

a) Which of the jurisdictions represented includes savings from Codes and Standards initiatives?
b) Please reproduce the graphic using Efficiency Manitoba's costs without the Codes and Standards initiative include.

RATIONALE FOR QUESTION:

Comparability of acquisition costs

RESPONSE:

a) Figures 4 and 5 on page 533 were generated using data from the ACEEE 2018 State Energy Efficiency Scorecard on ratepayer funded electricity and gas energy efficiency programs. The Report does not provide detail regarding which jurisdictions includes energy savings from Codes and Standards in their ratepayer funded program portfolios.

b) Efficiency Manitoba is unable to reproduce this graph without Codes and Standards for the reason stated in response to question (a). The first-year acquisition cost (at the generator level), excluding costs and savings associated with Codes and Standards, range from $0.15-$0.17/kWh for electricity and $59-68/GJ for natural gas, over the three-years of the plan.

REFERENCE:

9, line 76 (PDF 19)
15, figure 3.1 (PDF 90)
Section 1
Section 3

PREAMBLE TO IR (IF ANY):

As noted in Section 1, page 9, line 76, Efficiency Manitoba "developed a Stakeholder Engagement Model shown in the figure below."

QUESTION:

a) Please confirm which figure is being referenced in Section 1, page 9, line 76.
b) Is the figure referenced in Section 1 the same as Figure 3.1 (Section 3 page 15)?
c) Please identify where and how the public, including low income and First Nations Customers, were consulted under this model/strategy.

RATIONALE FOR QUESTION:

There is no appropriate figure in Section 1, Section 3, 3.3 (pp.9-10 of 32).

RESPONSE:

a) The figure referenced on line 76 of page 19 of the submission was inadvertently omitted from the document. It has been provided as Figure 3.1 on page 90 of the submission.

b) Confirmed. The figure on page 90 of the submission should have also been included on page 19 of the submission.

c) The public would be represented at the center of the Stakeholder Engagement Model which represents the Energy Efficiency Advisory Group (EEAG). Specific members that participated in the EEAG that brought forward the perspectives of low income and First

Nations customers were Green Action Centre, Consumer's Association of Canada (Manitoba Chapter), Manitoba Metis Federation, Manitoba Keewatinowi Okimakinak, and Southern Chiefs Organization.

REFERENCE:

Section 9 of The Efficiency Manitoba Act

PREAMBLE TO IR (IF ANY):

Section 9 of the Efficiency Manitoba Act, C.C.S.M. c.E15 identifies the information to be included in its 3 year plan. Subsection (h)seeks "a description of the input that Efficiency Manitoba received from stakeholders – including the stakeholder committee established under section 27 – and the public (emphasis added) in preparing the plan, and the process established for receiving feedback."

QUESTION:

a) Please indicate the feedback received from the public, as distinct from stakeholders, including low income and hard to reach customers in preparing the plan.
b) Please identify the process established to receive input from the public, including low income and hard to reach customers in preparing the plan.
c) Please identify the process which will be used to receive input from the public, including low income and hard to reach customers in preparing the plan once it is approved.

RATIONALE FOR QUESTION:

To understand how Efficiency Manitoba is meeting the requirement under section 9(h) of the Efficiency Manitoba Act.

RESPONSE:

a) Outside of the feedback received through EEAG members whom collectively represented all customer segments in the plan, there was no feedback received from the general public in advance of this first three-year Efficiency Plan (the Plan) being submitted to the Public Utilities Board (PUB).

b) The Plan will not be finalized until it is approved by the Minister. The PUB review of the Plan facilitates public review and participation including receipt of input from the public.

With regards to public participation as part of the public review process through the PUB, the following are excerpts from the PUB website:

- As an open and transparent body, the PUB welcomes and encourages public participation in its hearings.
- There are several ways for the public to become involved in any public hearing before the Board.
- Hearings allow the Board to make fully informed decisions with significant public input.

c) As a Crown Corporation there are several paths through which a customer will be able to provide feedback to Efficiency Manitoba including but not limited to direct contact with Efficiency Manitoba via its website contact information including social media; contact with the organization, its contractors and delivery partners in the course of considering and implementing energy efficient opportunities; the variety of stakeholder groups represented on Efficiency Manitoba's Energy Efficiency Advisory Group (EEAG) and more broadly through the organizations' stakeholder engagement model; and through future public meetings held in accordance with the Crown Corporations Governance and Accountability Act.

EFERENCE:

pp. 18-25 (PDF 93-100) Section 3

PREAMBLE TO IR (IF ANY):

A cornerstone of the customer-focused approach (p. 18 starting at line 295) appears to be engagement with the representatives of the Energy Efficiency Advisory Group (EEAG). A synopsis of member feedback is provided (p. 20 starting at line 345).

QUESTION:

Please identify how member feedback was incorporated in the Efficiency Manitoba Plan. Where feedback was not incorporated, please provide a brief explanation/justification of that decision.

RATIONALE FOR QUESTION:

To understand how the feedback received from the EEAG was incorporated or not in the Efficiency Manitoba Plan.

RESPONSE:

Efficiency Manitoba received feedback from the EEAG members through 6 group meetings and 4 member-specific meetings that were held between May and September of 2019.

In addition to the recommendations incorporated into the first 3-Year Efficiency Plan (the Plan) and detailed on pages 92 through 94 of the submission (continuity of programs, streamlined application process, new program requests, customer focused approach), Efficiency Manitoba also received suggestions that will be operationalized as the Plan is carried out. For example, both SCO and MKO recommended that meaningful two-way engagement be a priority in the implementation of the Plan.

The following lists recommendations that were made by EEAG members but were not able to be incorporated into the Plan or the Plan development process:

1. General public consultation to obtain input into the Plan was not possible due the time available for Plan development as well as the government and crown communication black out that was required from June to September under the Elections Communications Act.

2. Alternative DSM portfolios designs were not possible due to the time available for Plan development.

3. Strategies to encourage electric vehicles in Manitoba were not incorporated due to the absence of this activity in the Efficiency Manitoba Regulation 119/2019.

4. Per-unit energy savings (claiming savings based on a lower energy intensity for production even though overall energy increases) were not addressed as this was an unfamiliar concept to Efficiency Manitoba and required more investigation as to the plausibility of claiming savings in this scenario.

REFERENCE:

pp. 18 (line 295)-20 (line 331) (PDF 93-95) Section 3
A2.4.1
Attachment 2

PREAMBLE TO IR (IF ANY):

A cornerstone of the customer-focused approach (p. 18 starting at line 295) is engagement with the representatives of the EEAG. On pages 19-20, Energy Efficiency states that "[t]o ensure a transparent, impartial and thoughtful process, Efficiency Manitoba retained external services to facilitate the process."

QUESTION:

Please provide additional information about the methodology employed to structure the EEAG. This should include, but may not be limited to:

a) The direction provided to the external service;
b) The steps employed to ensure transparency, impartiality and thoughtfulness;
c) Consideration given to low income and hard-to-reach customer classes; and,
d) Deviations, if any, between the structure recommended by the external service and the existing EEAG.

RATIONALE FOR QUESTION:

To better understand the process employed to engage with the EEAG, which Efficiency Manitoba states is "[c]entral to the overall Stakeholder Engagement Model [...]" (p 19).

RESPONSE:

a) The performance expectations provided to the external consultant included the following mandatory expectations: foster the development of rapport and trust with the EEAG; ensure consistent, involved representation from all members of the EEAG;

provide expert advice on all aspects of the scope of work as proposed by Efficiency Manitoba; and maintain positive and transparent communications.

b) In addition to the written expectation of positive and transparent communications, the final selected consultant was chosen due to their demonstrated ability to build group cohesiveness and accommodate different styles of participation to ensure involvement from all members. They also held the IAP2 (Association for Public Participation Canada) certification.

c) The low income and hard-to-reach customer classes were given the highest consideration when selecting the make-up of the EEAG; with 50% of final membership speaking in part or in full on behalf of these two customer segments. The EEAG members that made up this component were Green Action Centre, Consumer's Association of Canada (Manitoba Chapter), Manitoba Metis Federation, Manitoba Keewatinowi Okimakinak, and Southern Chiefs Organization.

d) If the term "structure" means composition of the committee in this question, the consultant did not provide any input into the specific members to be invited to participate.

REFERENCE:

p. 25 (438-444) (PDF 100)
p.3 (39-46) (PDF 206)
pp.38-39 (746-758) (PDF 241)
Section 3.3.2
A2.1
A2.4.3

PREAMBLE TO IR (IF ANY):

In Section 3.3.2, p 25, Efficiency Manitoba states that it "surveyed stakeholders of Manitoba's energy efficiency programs to gain feedback on the programs and services offered as well as to generate ideas for future programming."

QUESTION:

Please explain the methodology employed in the stakeholder survey. This should include (but may not be limited to):

a) A copy of the survey;
b) A description of how the survey was distributed to respondents;
c) A description of the sampling method employed, with attention to modifications employed to ensure responses included representatives of contractors, suppliers, vendors, consultants, etc. with experience working with low-income and hard-to reach customer classes;
d) The response rate;
e) A detailed description of the confidence levels for the results;
f) An explanation of how the data were analyzed, including how the responses to the survey relate to the themes identified in Section A2.1 and Section A2.4.3;
g) An explanation of the relationship between the themes identified in Section A2.1 and A2.4.3; and
h) A short summary of themes derived from the survey which were not included Section A2.1.

RATIONALE FOR QUESTION:

To better understand the process and methodology employed by Efficiency Manitoba in its Stakeholder Engagement Survey.

RESPONSE:

a) Please see Attachments 1 and 2.
b) A link to the survey was distributed to the respondents via email.
c) The survey was distributed to 2,517 approved registered suppliers (including contractors, suppliers, vendors, consultants, engineering firms, architectural firms and associations) of Manitoba Hydro's energy efficiency programs with email addresses on file. Among those 2,517 approved registered suppliers are suppliers with experience working with low-income and hard-to reach customer classes.
d) We received responses from 392 respondents resulting in a response rate of 12%. Of those 392 responses, 234 (9%) were complete responses and 68 (3%) were partial responses.
e) The Stakeholder Engagement Survey was created with the intention of collecting qualitative feedback from registered suppliers who had experience working with existing energy efficiency programs; confidence levels have not been applied to the results.
f) The majority of the questions asked in the survey offered a finite list of answers respondents could choose from. As a result, staff was able to look simply at the frequency with which respondents selected specific answers. For example, when asked "Which of the existing energy efficiency programs offered at Manitoba Hydro are of interest to you?" over 100 respondents selected the Home Energy Efficiency Loan. For questions with open ended answers, answers were coded in order to observe response trends. For example, as outlined in Section A2.4.3 of the Plan, when asked to "Please elaborate on why you gave a score of less than 3 on any of the above features" responses such as "Too much paperwork and too complex", "Paperwork for some programs are extremely cumbersome and excessive", and "Paperwork instructions could be clearer" were all coded as "Paperwork is too onerous and not worth the customer or the contractor's time".

g) The themes identified in section A2.1 of the Plan are not directly related to the themes identified in the survey. The themes in section A2.1 refer to the broader engagement with stakeholders, customers, and the EEAG.

h) Please see Attachments 1 and 2 (summary of the additional survey results and themes).

Efficiency Manitoba

Partner Survey

Efficiency Manitoba is in the process of developing our first 3-Year Efficiency Plan for review at the Public Utilities Board in the fall of 2019. Following this public review and upon approval by the Minister of Crown Services, it is intended that the Plan will be introduced to Manitobans by April 1, 2020.

Collaborating with industry partners like you is an important step in the process. Your answers to the following questions will help shape future energy efficiency offerings in Manitoba.

What best describes your past involvement with Manitoba Hydro's energy efficiency programs? *

- [ ] Association representing businesses or consumers
- [ ] Association representing trades or other design professionals
- [ ] Consulting firm
- [ ] Contractor
- [ ] Social Enterprise
- [ ] Vendor or Supplier
- [ ] Other

Which sector(s) do you serve?
Select all that apply.

- [ ] Agricultural
- [ ] Commercial
- [ ] Industrial
- [ ] Residential

Which of the existing energy efficiency programs offered at Manitoba Hydro are of interest to you? *
Select all that apply.

- [ ] Affordable Energy Program (in-home reviews, insulation, water saver kits)
- [ ] Bioenergy Optimization Program
- [ ] Commercial Building Envelope Program
- [ ] Commercial HVAC Program
- [ ] Commercial Kitchen Appliances Program
- [ ] Commercial Lighting Program
- [ ] Commercial New Buildings Program
- [ ] Commercial Refrigeration Program
- [ ] Custom Measures Program
- [ ] Energy Finance Plan
- [ ] Enhanced Building Operations Program
- [ ] Geothermal Program
- [ ] Home Energy Efficiency Loan
- [ ] Home Insulation Program
- [ ] HRV Control Program
- [ ] Indigenous Program
- [ ] Lighting Program for Multi-Unit Residential Buildings (MURBs)
- [ ] Natural Gas Optimization Program
- [ ] Network Energy Management Program
- [ ] New Homes Program
- [ ] PAYS Financing
- [ ] Performance Optimization Program
- [ ] Refrigerator Retirement Program
- [ ] Residential Earth Power Loan
- [ ] Residential Lighting Program
- [ ] Small Business Program
- [ ] Water and Energy Saver Program
- [ ] Water and Energy Saver Program for Multi-Unit Residential Buildings (MURBs)
- [ ] None of the above

On a scale of 1 to 5, with 1 being extremely dissatisfied and 5 being extremely satisfied, how satisfied are you with the following features of Manitoba Hydro's current energy efficiency programs?

*

	1 (Extremely dissatisfied)	2	3	4	5 (Extremely satisfied)
Amount of paperwork	○	○	○	○	○
Complexity of application	○	○	○	○	○
Incentive amount	○	○	○	○	○
Overall quality of customer service	○	○	○	○	○
Overall quality of technical support	○	○	○	○	○
Timeliness of application approval	○	○	○	○	○

Please elaborate on why you gave a score of less than 3 on any of the above features.

Which of the following initiatives/technologies would you like to see Efficiency Manitoba support? *

- [ ] Additional areas for insulation
- [ ] Additional commercial kitchen appliances
- [ ] Agricultural equipment
- [ ] Air cooled chillers
- [ ] Air source heat pumps
- [ ] Air tightness & sealing
- [ ] Appliances
- [ ] Biomass systems
- [ ] Deep energy retrofits
- [ ] Design assistance
- [ ] Doors
- [ ] Drain water heat recovery
- [ ] Energy audits
- [ ] Energy Manager initiative
- [ ] Energy modelling
- [ ] Heat recovery ventilator controls
- [ ] Lighting controls
- [ ] Smart home products
- [ ] Solar photovoltaic panels
- [ ] Solar thermal water heaters
- [ ] Variable frequency drives
- [ ] Wind energy
- [ ] Windows
- [ ] Other

What services would be of most value to you? *
Please select two.

- [ ] Customer site visits
- [ ] Industry newsletter
- [ ] Online applications
- [ ] Online chat support
- [ ] Research and development support for new technologies
- [ ] Technical support

Please share any additional comments on Manitoba Hydro's energy efficiency programming and services.

Please share any additional comments or ideas for future Efficiency Manitoba offers and services.

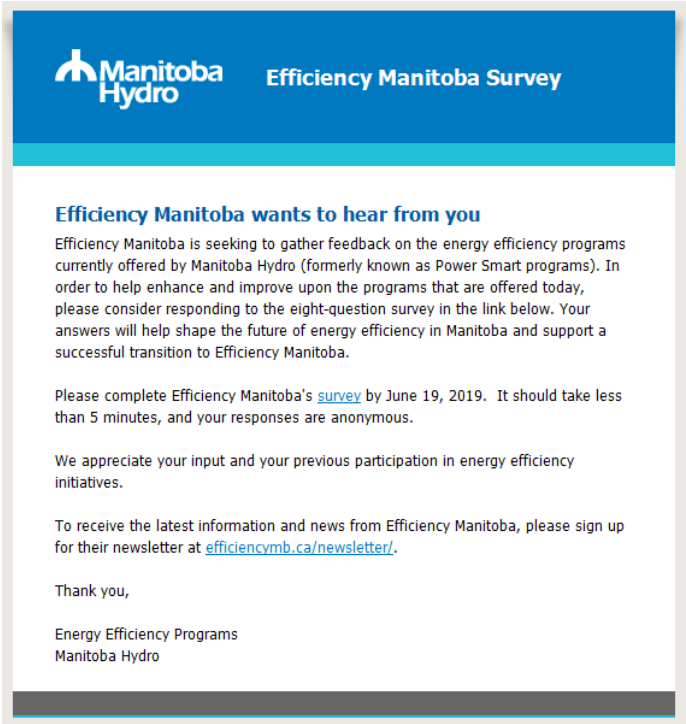
Efficiency Manitoba **Stakeholder Engagement Survey Results**

1

Survey Delivery

Survey Delivery

- The survey was sent to **2,517 contacts** via eCampaign on **June 11, 2019 at 11:00 AM**
- The 2,517 contacts included:
  - Contractors
  - Suppliers
  - Vendors
  - Consultants
  - Engineering firms
  - Architectural firms
  - Associations



Manitoba Hydro

Efficiency Manitoba Survey

Efficiency Manitoba wants to hear from you

Efficiency Manitoba is seeking to gather feedback on the energy efficiency programs currently offered by Manitoba Hydro (formerly known as Power Smart programs). In order to help enhance and improve upon the programs that are offered today, please consider responding to the eight-question survey in the link below. Your answers will help shape the future of energy efficiency in Manitoba and support a successful transition to Efficiency Manitoba.

Please complete Efficiency Manitoba's survey by June 19, 2019. It should take less than 5 minutes, and your responses are anonymous.

We appreciate your input and your previous participation in energy efficiency initiatives.

To receive the latest information and news from Efficiency Manitoba, please sign up for their newsletter at efficiencymb.ca/newsletter/.

Thank you,

Energy Efficiency Programs
Manitoba Hydro

eCampaign Results

- Emails sent: **2,480**
- Hard bounces: **28 (1.13%)**
- Open rate: **52.14%**
- Click rate: **24.88%**
- Unsubscribed: **2 (0.08%)**

2.

Survey Response Rate

Survey Responses

- Reponses received: **392 responses**
- Response rate: **12%**

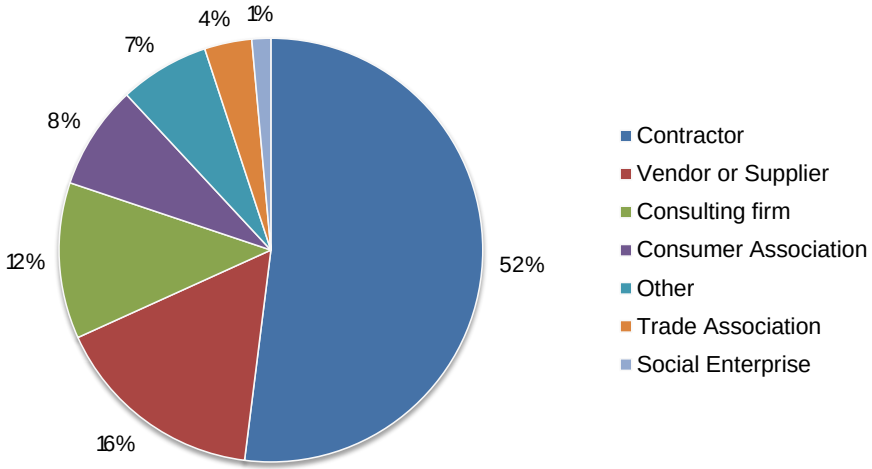
- There were **234 complete responses (9%)** and **68 partial responses (3%)**.

3.

Response Analysis

Q1

What best describes your past involvement with Manitoba Hydro's energy efficiency programs?



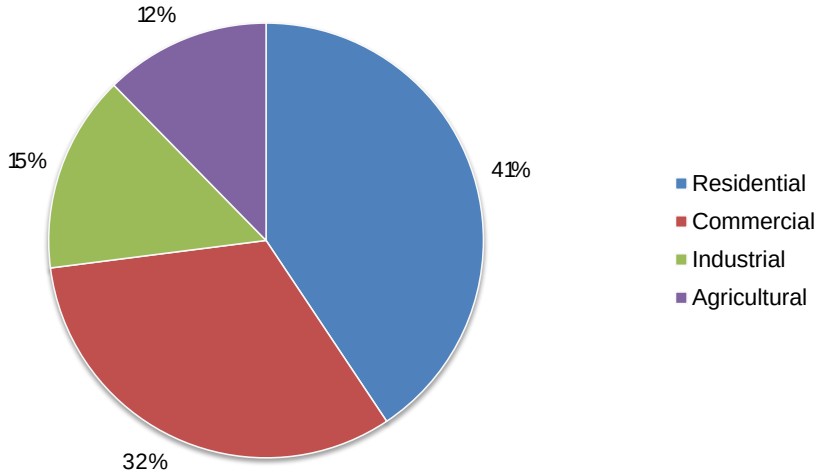
Q1

What best describes your past involvement with Manitoba Hydro's energy efficiency programs?

- "Other" includes:
  - Healthcare
  - Government Departments
  - Metis Government in Manitoba
  - Landlord
  - Client/Homeowner

Q2

Which sector(s) do you serve?



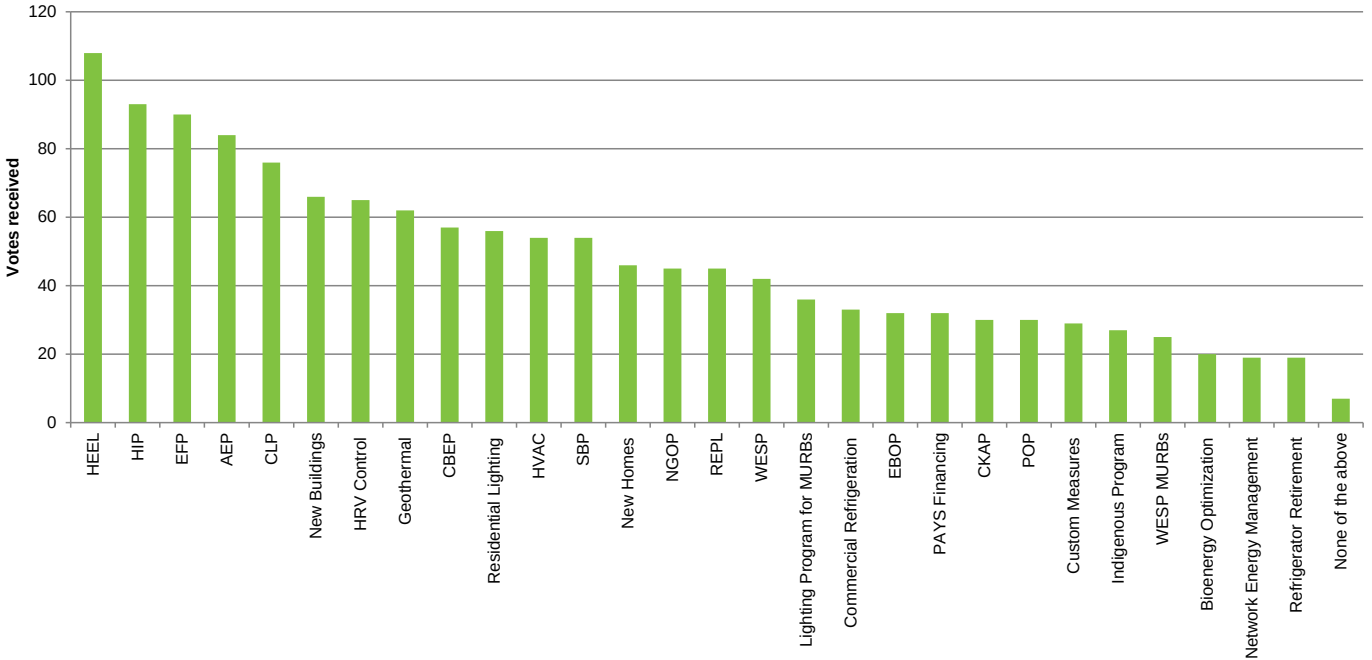
Q3

Which of the existing energy efficiency programs offered at Manitoba Hydro are of interest to you?

- The five programs that received the most "votes" (in order) are:
    1. Home Energy Efficiency Loan
    2. Home Insulation Program
    3. Energy Finance Plan
    4. Affordable Energy Program
    5. Commercial Lighting Program

Q3

Which of the existing energy efficiency programs offered at Manitoba Hydro are of interest to you?



Q4

How satisfied are you with the following features of Manitoba Hydro's current energy efficiency programs?

- The question was asked on scale of 1to 5, with 1 being extremely dissatisfied and 5 being extremely satisfied
- If the respondent scored any of the features as a "1" or "2", they were asked to "Please elaborate on why [they] gave a score of less than 3 on any of the above features"

Q4

How satisfied are you with the following features of Manitoba Hydro's current energy efficiency programs?

	1	2	3	4	5	Average
Amount of Paperwork	7%	17%	38%	27%	11%	**3.40**
Complexity of Application	6%	16%	35%	31%	11%	**3.46**
Incentive Amount	10%	14%	41%	24%	12%	**3.08**
Quality of Customer Service	4%	6%	22%	38%	30%	**4.47**
Quality of Technical Support	5%	6%	28%	35%	26%	**4.33**
Timeliness of Approval	4%	10%	27%	34%	24%	**4.37**

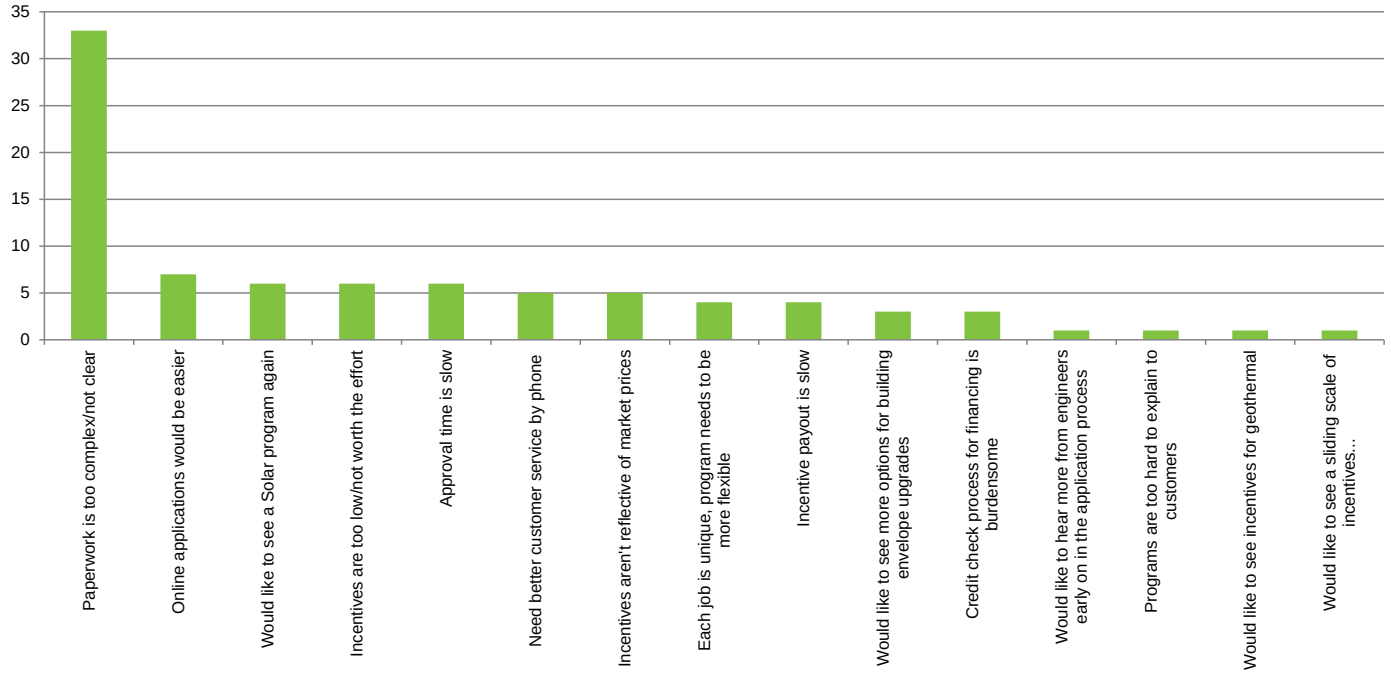
Q4

How satisfied are you with the following features of Manitoba Hydro's current energy efficiency programs?

- When asked to "Please elaborate on why [they] gave a score of less than 3 on any of the above features", the three most common answers were:
    1. Paperwork is too onerous and not worth the customer or the contractor's time.
    2. An online application process would be easier and less time-consuming.
    3. Solar rebates should be brought back.

Q4

Please elaborate on why you gave a score of less than "3" on any of the above features.



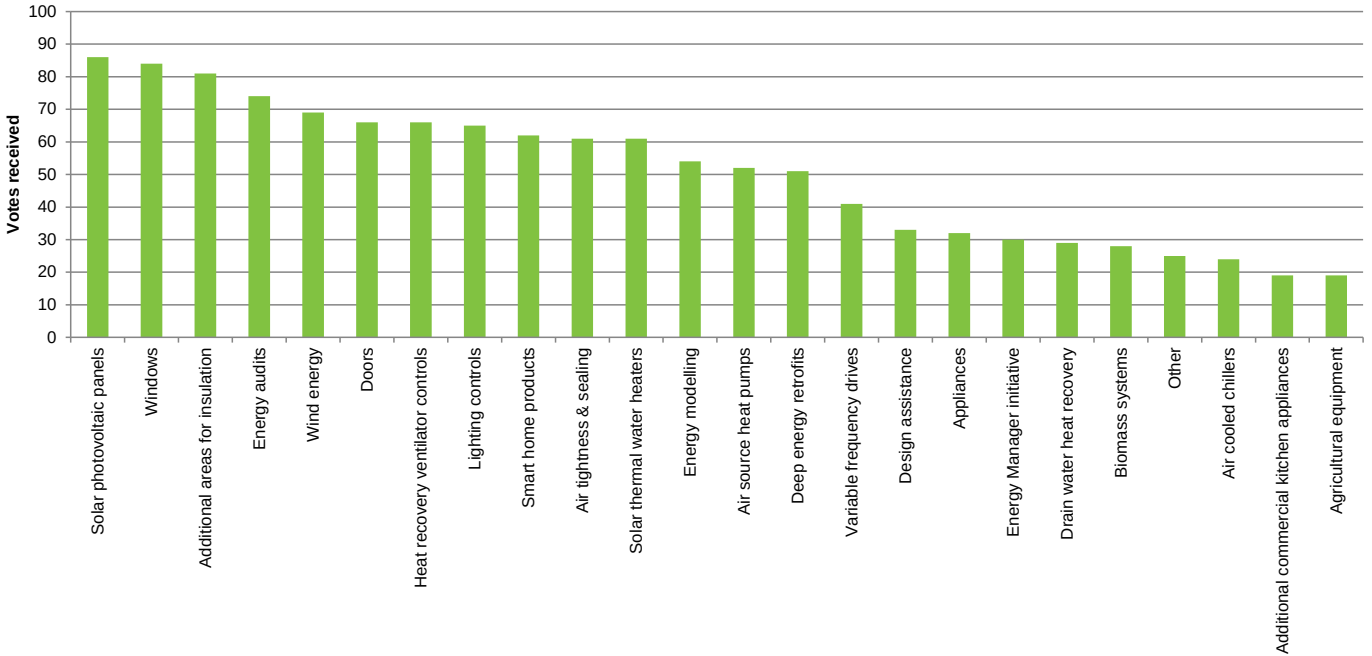
Q5

Which of the following initiatives / technologies would you like to see Efficiency Manitoba support?

- The five initiatives / technologies that received the most "votes" (in order) are:
    1. Solar PV panels
    2. Windows
    3. Additional areas for insulation
    4. Energy audits
    5. Wind energy

Q5

Which of the following initiatives / technologies would you like to see Efficiency Manitoba support?



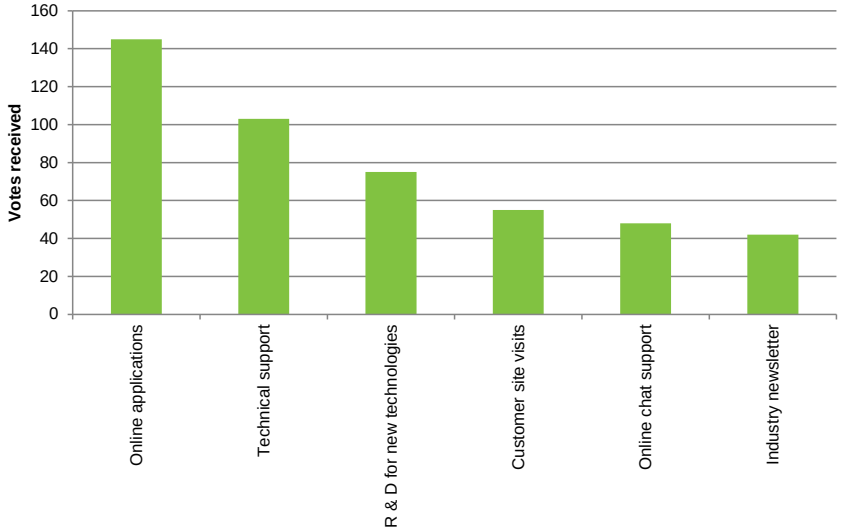
Q5

Which of the following initiatives / technologies would you like to see Efficiency Manitoba support?

- "Other" includes:
  - Passive house retrofits
  - Geoexchange systems
  - Heat recovery chillers
  - Residential furnace rebates
  - Water turbines
  - Revolving doors
  - Gas fireplaces
  - Gas tankless water heaters
  - Commissioning
  - Building maintenance studies

Q6

What services would be of most value to you? Pick two.



Please share any additional comments

Q7 & Q8

- The open-ended questions include:
  - Please share any additional comments on Manitoba Hydro's energy efficiency programming and services
  - Please share any additional comments or ideas for future Efficiency Manitoba offers and services
- The responses were sent to the respective programs which they referred to and will be used towards improving the customer experience and process improvements.


EFFICIENCY
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REFERENCE:

pp. 25-26 (445-458) (PDF 100-101)
p.39 (759-766) (PDF
3.3.2
A2.4.3

PREAMBLE TO IR (IF ANY):

In Section 3.3.2, p 25, it states that "Manitoba Hydro staff at the request of Efficiency Manitoba documented the many facets of public engagement with various stakeholders throughout spring of 2019."

QUESTION:

Please provide a copy of the information prepared by Manitoba Hydro Staff about the public engagement activities throughout the spring of 2019.

RATIONALE FOR QUESTION:

Requesting further details about the feedback and input received from stakeholders, which Efficiency Manitoba references in its application.

RESPONSE:

The chart below summarizes the information prepared by Manitoba Hydro staff regarding stakeholder engagement throughout the first half of 2019. This list is not exhaustive of all engagement, however, it identifies many examples of collaboration and discussion with industry partners.

Further information request/clarification:
COALITION/EM I-129 requested a copy of the information prepared by Manitoba Hydro staff about the public engagement activities throughout the spring of 2019. Efficiency Manitoba provided a table presenting a non-exhaustive list summarizing the information provided by

Manitoba Hydro staff. While one column is titled "Program Discussed / Feedback Received", Efficiency Manitoba has failed to include a description of any feedback received from stakeholders, instead limiting the information to the topic or issue discussed. Information about the feedback received is critical to meeting the legislative requirement under s 9(h) of the *Efficiency Manitoba Act*, as well as issue 3 in PUB Order 162/19.

Additional response from Efficiency Manitoba (December 5, 2019):

Energy Efficiency staff consider the input they receive from customers and stakeholders as part of their regular daily duties and therefore a method of centralizing feedback has not been established. The information below reflects a sample of the feedback received by staff, to the extent that it could be adequately recollected, during the specific activities listed in the chart below:

- Received positive feedback and requests for program continuation of Home Energy Efficiency Loan.
- Received positive feedback and requests for program continuation of Commercial Building Envelope Program.
- Representatives of the Manitoba Geothermal Energy Alliance consulted on program inputs including estimates of market size, incremental product cost, and average system size in residential market. Input was also provided on recommended program term, suggested rebate levels, and the implementation of a maximum number of annual participants was also recommended.
- Request to relaunch Parking Lot Controller program.
- Received feedback that retail rebate programs can be time consuming for participating retailers. Streamlining the amount of work required by retailers should be considered with future programming.
- Received positive feedback that an online home audit could be an effective tool.
- Request for technical assistance on revising product specifications for program qualification. Received positive feedback regarding programs.
- Customers and Contractors were unclear about the definitions of the CEC (Canadian Electrical Code) before 2015 and now after the alignment with the IEC (International Electrical Code) and how that potentially affects their projects and Commercial Lighting Program Incentive.

- Contractors, Wholesalers and Suppliers were unaware of the total potential for Energy savings that can be generated. Has resulted in an increase in "Controls" related CLP applications.
- Discussed at a high level what future appliance recycling initiatives may look like under Efficiency Manitoba. Discussed meeting participation targets and adding new appliances.
- Feel no customers should get declined (loan). Feedback that the amount of financing available through PAYS was not helpful. Too much paperwork.
- Very knowledgeable staff.

The following is a summary of feedback, grouped into themes, specific to the survey on line 49 of the chart below:

- Incentive levels should be reviewed more frequently to adapt to market conditions;
- Incentive levels should vary for more superior products;
- Application approval wait times are too long, and projects are often time sensitive;
- Incentive payment wait times are unacceptable from both the customer and contractor perspective;
- Too much paperwork, assistance is often required for the technical information;
- Lack of online resources including online applications and chat support;
- Technical staff are a great resource to discuss project ideas and validity of manufacturing claims;
- Increase the promotion of offers, customers are not aware of the opportunities;
- The spring rebate campaign should be year-round;
- There is currently nothing in place specific for the Metis community;
- Bring back the solar energy program incentive as well as education on solar and wind and;
- New programs require new training for contractors and customers.

Manitoba Hydro Energy Efficiency Programs Department Staff Stakeholder Engagement

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
1/30/2019	Service Provider	10	Residential Renovation and Low Income Program -opportunities for program enhancements -discussion of Efficiency Alberta Programs and lessons learned	In person meeting	Winnipeg
1/30/2019	Service Provider	6	Retail rebates – future program discussion	In person meeting	Winnipeg
2/6/2019	Supplier	20+	Industry presentation on CSC spray Foam – Residential and Commercial Building Envelope	Assocation luncheon	Winnipeg
3/8/2019	Service Provider	6	Online audit tool, digital marketing, online marketplace tool	In person meeting	Winnipeg
3/8/2019	Supplier	10+	Overview of financing programs and CBE Program	In person meeting	Winnipeg
3/12/2019	Service Provider	6	Residential Renovation, low income and First nations – Energy Audits, Hot 2000/xp software	In person meeting	Winnipeg
3/18/2019	Supplier	10	Residential and Commercial Building Envelope	Site meeting	Headingly
4/2/2019	Customer	1	Performance Optimization Program (POP)	Site meeting	Winnipeg

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
4/4/2019	Supplier	50	Commercial Lighting Program (CLP) / Inspection – Hazardous location Lighting	Lunch & Learn	Brandon
4/10/2019	Customer	1	POP – pump system	Site meeting	Winnipeg
4/11/2019	Contractor	1	Geothermal	Phone Call	
4/15/2019	Developer	3	New Buildings, Portfolio Manager	In person meeting	Winnipeg
4/16/2019	Other Utility	8	Residential Renovation - Home Energy Efficiency Program and Demo	Webinar	Winnipeg
4/16/2019	Association	40	Various	Association's "Spring Celebration"	Wpg Convention Centre
4/17/2019	Association	60	CLP – Selling Controls	Assocation luncheon	Winnipeg
4/18/2019	Association	20+	Overview of financing programs	Association Luncheon	Winnipeg
4/23/2019	Customer	4	Existing Building Optimization Program (EBOP) POP	In person meeting	Winnipeg
4/23/2019	Customer	3	POP Natural Gas Optimization Program (NGOP)	Site meeting	Winnipeg
4/24/2019	Service Provider	4	Residential Lighting - program evaluation methodology sharing	Phone Call	Winnipeg
4/24/2019	Association	2	DSM engagement	Phone Call	MH office – 1315 Notre Dame
4/25/2019	Association	50	Energy modelling and the code	Assocation luncheon	Winnipeg

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
4/25/2019	Service Provider	5	Retail rebates – future program discussion	Phone Call	Winnipeg
4/25/2019	Association	30	Manitoba Race to Reduce, Portfolio Manager, + various	Panel discussion and presentation	Winnipeg Conference
4/26/2019	Service Provider	9	Provided an overview of residential programs offered and coordinated nationally	In person meeting	Winnipeg
5/1/2019	Customer	8	New Buildings, Performance Optimization	Site meeting	Portage La Prairie
5/2/2019	Service Provider	1	New Buildings Program	In person meeting	Winnipeg
5/3/2019	Customer	6	POP NGOP	In person meeting	Winnipeg
5/7/2019	Contractor	5	Custom Measure EBOP	In person meeting	Winnipeg
5/10/2019	Contractor	5	NGOP/POP	In person meeting	Winnipeg
5/13/2019	Customer	1	All Commercial & Industrial programs	In person meeting	Winnipeg
5/13/2019	Service Provider	2	Smart home discussion	Phone Call	Winnipeg
5/13/2019	Customer	3	New Buildings, New Homes	Site meeting	Housing Co-op, Winnipeg
5/13/2019	Vendor	5	Various	In person meeting + web conference	MH office - 1315 Notre Dame
5/14/2019	Association	10	New Buildings Program – Energy Modelling Lessons Learned	Lunch & Learn	Winnipeg

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
5/16/2019	Customer	12	Building Envelope Custom Commercial EBOP HVAC Program Lighting Program Refrigeration Program	In person meeting	Winnipeg
5/21/2019	Vendor	1	POP – heat pads	Site meeting	Winnipeg
5/22/2019 to 6/30/19	Vendor	various	Retail Rebates	Home Depot, Costco, Canadian Tire and various other retailers	Vendor
5/24/2019	Customer	5	POP NGOP CLP	Site meeting	Winnipeg
5/30/2019	Distributor	1	Commercial HVAC & NGOP	In person meeting	Winnipeg
5/30/2019	Contractor	4	Refrigerator Retirement Program – future program discussion	In person meeting	Winnipeg
5/31/2019	Government ally	3	NRCan development of national RCx framework	In person meeting	MH office – 1315 Notre Dame
5/31/2019	Developer	2	New Buildings	In person meeting	Winnipeg
6/5/2019	Service Provider	4	All commercial & industrial programs	In person meeting	Winnipeg
6/5/2019	Service Provider	7	Online rebates – presentation of other utility programs	Phone Call	Winnipeg

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
6/7/2019	Vendor	1	All Commercial and Industrial Programs	In person meeting	Winnipeg
6/11/2019	Customer	2	POP NGOP	Site meeting	The Pas
6/12/2019	Customer	6	POP	Site meeting	Flin Flon Snow Lake
6/12/2019	Contractor	3	CLP program	In person meeting	Virden
6/12/2019	ALL	2500	All current programs	Survey	
6/18/2019	Association	20	Overview of residential programs	In person meeting	Winnipeg
6/19/2019	Customer	1	POP NGOP	Site meeting	Gimli
6/20/2019	Municipal government	2	City of Winnipeg/NRCan partnership for BLD, Portfolio Manager	Phone Call	MH office – 1315 Notre Dame
6/24/2019	Customer	1	EBOP	Phone Call	Winnipeg
6/24/2019	Policy Development consultant	2	NRCan development of national RCx framework	Phone Call	MH office – 1315 Notre Dame
6/27/2019	Vendor	4	Product pitch: new product offerings, DSM engagement	In person meeting	MH office – 1315 Notre Dame
6/27/2019	Service Provider	10	All commercial & industrial programs	In person meeting	Winnipeg
5/29/2019	Customer	2	CLP, EMI, General programs	In person meeting	Winnipeg (CME AGM)

Date	Stakeholder Type	Attendance	Program Discussed/Feedback Received	Method of Engagement	Location
6/26/2019	Customer	1	Energy Manager Initiative, Energy Efficiency Screening Studies, Industrial Programs	Phone Call	MH office – 1315 Notre Dame
6/25/2019	Other Utility	1	Affordable Energy Program eligibility, Efficiency Nova Scotia Home Warming program	Choose an item.	Email
7/3/2019	Association	4	Affordable Energy Program, Neighbourhood Energy Efficiency Project, some overview of other residential programs	In person meeting	Recreational Centre, Winnipeg
7/5/2019	Customer	2	POP	Site meeting	Portage La Prairie
7/11/2019	Customer	4	POP NGOP	Site meeting	Ste. Agathe
7/17/2019	Customer	2	POP NGOP	Phone Call	Winnipeg
7/18/2019	Customer	3	POP NGOP	Site meeting	Brandon

REFERENCE:

pp.39-40 (767-772) (PDF 242-243) Section 7
A.2.4.4

PREAMBLE TO IR (IF ANY):

In Appendix A, section A2, pp 39-40, it states: "In accordance with organizational guiding principles and following the overall stakeholder engagement model that was created, Efficiency Manitoba will continue to seek ways of engaging with stakeholders in order to be open, transparent and accountable. Executives will continue to meet regularly with the EEAG to discuss customer segment topics related to specific program delivery, achieved savings, investment, and overall evaluation."

QUESTION:

Please identify how the public (including both customers and non-participants) representing each of the consumer classes will participate in the evaluation and monitoring of Efficiency Manitoba's programming, outside of the work of the EEAG.

RATIONALE FOR QUESTION:

To understand how public engagement, and not only stakeholder engagement, will play a role in the evaluation and monitoring of Efficiency Manitoba's programming.

RESPONSE:

Please see response to COALITION/EM I-125 c).

REFERENCE:

Efficiency Manitoba Advisory Group Terms of Reference (starting at PDF 449) Attachment 2

PREAMBLE TO IR (IF ANY):

A cornerstone of the customer-focused approach is engagement with the representatives of the EEAG. The Terms of reference advises:

• The Intent of the EMAG includes "to ensure that the inaugural Plan that is brought before the Public Utilities Board represents the optimal compilation of actions and strategies while also meeting the mandated savings targets in a cost-effective manner"

• The guidelines specify the EEAG is designed to ""Ensure communication is two-way, and is proactive and responsive"; and

• Responsibilities of the EEAG include that "Advisory Group members are asked to help facilitate communication and engagement with your communities and/or networks", among others.

QUESTION:

Please describe the supports (e.g. technical, monetary, other) provided to members of the EEAG to allow the groups to solicit feedback from their constituencies.

RATIONALE FOR QUESTION:

To understand how it is ensured that the two-way communication is meaningful.

RESPONSE:

EEAG members were encouraged to share information provided during EEAG meetings with their constituents to solicit feedback and were offered support through the leadership team at Efficiency Manitoba to conduct tailored presentations upon request. Two EEAG members, Manitoba Industrial Power User's Group and Keystone Agricultural Producers, requested assistance from Efficiency Manitoba to deliver presentations for their member organizations. In this regard, technical support was provided.

Consumer's Association of Canada (Manitoba Chapter) requested that their independent expert consultant be permitted to attend the EEAG meeting when the topic of cost-effectiveness of the proposed Plan was scheduled to be discussed. This expert attended the June 27, 2019 meeting of the EEAG.

Manitoba Metis Federation, Manitoba Keewatinowi Okimakinak, and Southern Chiefs Organization all requested separate meetings in addition to the group EEAG meetings. Each of the meetings were held throughout the months of July and August.

Efficiency Manitoba offered to have a demand side management ("DSM") expert consultant present to the EEAG on the technical aspects of the DSM industry but it was not deemed by the EEAG to be necessary at the time.

No other forms of support were requested by EEAG members.