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MANITOBA PUBLIC UTILITIES BOARD

**In the Matter of
Efficiency Manitoba
3-Year Energy Efficiency Plan (2020/23)
Submission**

Rebuttal Evidence of Efficiency Manitoba

With Respect to the Written Evidence of:

Patrick Bowman and Dale Friesen, Intergroup Consultants, on behalf of the Manitoba Industrial Power Users Group;

Jim Grevatt and Chris Neme, Energy Futures Inc. on behalf of the Consumers Coalition;

William Harper on behalf of the Consumers Coalition; and

Daymark Energy Advisors on behalf of the Public Utilities Board

January 2, 2020

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1. The application and allocation of Codes and Standards by Efficiency Manitoba is reasonable and supports an overall low-cost portfolio of energy savings..... 3

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6. The Efficiency Manitoba electric portfolio budget is lower than previously forecast within the DSM component of 2018 Manitoba Hydro Capital Expenditure Forecast and the near-term rate impact analysis prepared by Mr. Bowman has several shortcomings and should not be relied upon.12

7. Efficiency Manitoba is reasonably forecasting program participation within the Plan.15

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

3
4 The Consumer Coalition’s witnesses Mr. Jim Grevatt and Mr. William Harper both question the inclusion
5 of savings from codes and standards initiatives that were developed with contributions from Manitoba
6 Hydro. On page 19 of Mr. Grevatt’s evidence, he states

7 *“...it is interesting to note that EM appears to expect to count savings from codes and standards*
8 *towards its savings goals beginning in 2020/21— before it has taken any action to advance*
9 *codes and standards in the province. In fact, EM proposes to claim savings for activities that*
10 *were undertaken by Manitoba Hydro, and that occurred before EM began implementing any*
11 *programs.”*

12 Mr. Harper also questions this on page 20 of his evidence, *“However, it would seem*
13 *unreasonable for Efficiency Manitoba to include savings that contribute targets it is required to*
14 *meet unless Efficiency Manitoba itself has been involved in the achievement of those savings”.*

15 Section 8 (c) of the Regulation clearly states that savings that are reasonably attributable to a code,
16 standard, or regulation to which a material contribution has been made by Efficiency Manitoba or
17 Manitoba Hydro can be included as part of the savings targets. The origins of this attribution of codes
18 and standards can be traced back to the PUB NFAT Panel recommendation #7; *“The Panel recommends*
19 *that the Government of Manitoba mandate incremental annual Demand Side Management targets in*
20 *the order of 1.5% of forecast domestic load (including codes and standards) over the long term.”*¹

21 Despite questioning if these codes and standards savings should be included in the targets, Mr. Harper
22 acknowledges this fact on page 20 of his evidence. *“Efficiency Manitoba’s plans to include the*
23 *incremental savings attributable to Codes and Standards implemented prior to its creation and the*
24 *launch of its 2020/21 programs as contributing towards the achievement of its prescribed targets. The*
25 *Efficiency Manitoba Regulation does permit such savings to be included.”*

26
27 Efficiency Manitoba has included forecast energy savings from those codes and standards that Manitoba
28 Hydro or Efficiency Manitoba have or will materially contribute to. As outlined in the Plan, enabling
29 strategies such as work on the development of codes and standards are an important component of a

¹ *The Public Utilities Board Report on the Needs For And Alternatives To (NFAT) Review of Manitoba Hydro’s Preferred Development Plan – Final Report.* June 2014., Recommendation 7. page 251.
http://www.pubmanitoba.ca/v1/nfat/pdf/finalreport_pdp.pdf

1 long-term energy efficiency strategy. *“Paramount to achieving the longer-term cumulative energy*
2 *savings identified in the Act, Efficiency Manitoba included budget for enabling strategies to ensure long-*
3 *term success at Efficiency Manitoba for the benefit of Manitobans.”* (Plan, Section 3, p. 82 of 591, lines
4 115-117).

5 Utilities and program administrators are in a unique position to facilitate the advancement of energy
6 efficiency through the development of building energy codes and appliance and equipment standards.
7 Efforts to improve energy efficiency in building codes or product standards are long term strategies that
8 involve activities completed by staff dedicated to energy efficiency irrespective of their specific employ
9 or where these activities are undergoing a one-time a transfer of responsibility from Manitoba Hydro to
10 Efficiency Manitoba. Activities that Efficiency Manitoba will be undertaking in support of the evolution
11 of codes and standards within the Plan will improve the energy efficiency of buildings constructed and
12 appliances purchased in Manitoba in subsequent 3-Year efficiency plans.

13 It is critical to note that Efficiency Manitoba is not double counting or cumulatively accounting for prior
14 activities under that same building code, rather, it is only accounting for new in-year activities that have
15 been impacted by codes and standards. In addition, Efficiency Manitoba discounts energy savings based
16 on specific market factors that exist in Manitoba as discussed in the response in the following Section 2.

17 2. Efficiency Manitoba considers market conditions to accurately account for codes & 18 standards savings.

19
20 On page 3 of its Independent Expert Report, Daymark Energy Advisors raises the concern that:

21
22 *“A significant proportion of the savings projected by Efficiency Manitoba to meet savings targets*
23 *come from savings attributed to codes and standards. Our analysis suggests that these savings*
24 *may be overstated, if the intention is to capture accurately their true incremental energy*
25 *efficiency impact, taking into account the fact that some compliance with codes and standards*
26 *may be considered “naturally occurring” and that, over time, technology may overtake codes*
27 *standards, so that the codes and standards themselves, while still technically on the books, may*
28 *be largely irrelevant to behavior”*

29
30 Daymark’s Report on pages 127 and 128 provides an illustrative analysis undertaken to estimate the
31 potential impact of naturally occurring market adoption (NOMAD) and the aging of standards.

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

6 Daymark suggests that the codes and standards savings should be discounted but recognizes that
7 identifying the correct adjustment factors to use could be challenging. On page 129 Daymark suggests
8 the use of simpler options, *“...capping the share of the annual savings requirement that can be fulfilled*
9 *through codes and standards or putting a 10- year limit on savings time frames.”*

10 The use of free ridership rates from efficiency programs as a measure of NOMAD impacts is not
11 appropriate. These free ridership rates are based on participants installing higher efficiency technologies
12 that are incremental to the efficiency levels from codes and standards and thus are very different.
13 Capping the share of codes and standards savings or limiting the lifetime of codes and standards savings
14 are also inappropriate as the selection of the cap or limitation may itself be subjective and arbitrary.

15 Efficiency Manitoba employs a distinct methodology that considers market conditions that exist in
16 Manitoba in order to claim more accurate impacts for code activities. For commercial buildings, the
17 savings are discounted to account for a presumed level of construction that incorporated some energy
18 efficiency. To illustrate, the code that was adopted in Manitoba in 2014 represented a 25%
19 improvement over the original reference building (Model National Energy Code for Building 1997)
20 however Efficiency Manitoba only claims a 15% improvement assuming that approximately 10% of
21 those savings over the reference building would have occurred in the absence of the building code
22 requirements.

23 Efficiency Manitoba also discounts savings for known compliance issues in Manitoba with the
24 commercial energy code. In year 1 of the plan, the total number of newly constructed buildings in
25 Manitoba is discounted by 50% to conservatively represent buildings that may not be meeting the
26 energy code requirement (considered conservative given that failure to meet energy code does not
27 imply that all aspects of the requirements were not met). In years 2 and 3 of the plan, these discount
28 factors change to 75% and 85% respectively as result of compliance activities being introduced to the
29 market as per Daymark’s evidence on page 122 (PDF p. 127).

1 For residential buildings, the same level of compliance issues do not exist as the level of energy
2 efficiency requirement in current building code was very close to the energy efficiency levels required by
3 the previous version of Manitoba Hydro's new homes program thereby demonstrating the value of the
4 long term integrated and collaborative strategy for voluntary programs promoting levels of efficiency
5 leading up to building code requirements. Natural conservation however is incorporated into the savings
6 assumptions but at the measure level. For example, drain water heat recovery units were required in
7 the Manitoba amendment (April 1, 2016) even though, at the time, there was very low penetration of
8 this technology in either new construction or retrofits. As a result, 100% of the savings from DWHR units
9 are claimed for code savings in a new home. In contrast, technologies such as foundation wall insulation
10 were assumed to have experienced some level of naturally occurring installation in the absence of the
11 code and therefore savings for this measure are discounted by 10% prior to being claimed in a new
12 home.

13 Code savings calculations are carried out individually for each technology and for each iteration of code.
14 Due to the complexity of these calculations, they are often created first in separate support documents
15 with the results inputted directly into the market analysis tabs of the cost-benefit analysis models.
16 Unfortunately, the methodologies for discounting savings due to building codes were not addressed in
17 the technical discussions held between Efficiency Manitoba and Daymark which may explain why this
18 treatment was not readily apparent to Daymark.

19 As per the response to COALITION/EM I-71c and DAYMARK/EM I-88b, Efficiency Manitoba will be relying
20 on the third-party assessor to recommend the appropriate net savings and attribution rates for the
21 savings achieved through codes and standards initiatives.

22 3. Efficiency Manitoba benefits from decades of DSM experience that exists in Manitoba and 23 the transitional support afforded through Manitoba Hydro 24

25 Mr. Grevatt, on page 3 of his evidence, raises concerns about the risks facing Efficiency Manitoba as a
26 new entity:

27

28 *"There are significant risks to success of EM's Plan, however, EM fails to address such concerns,*
29 *appearing to simply assume that it will complete the myriad steps leading up to a plan launch,*
30 *full implementation, and the realization of participation and savings targets."*

31

1 Daymark Energy Advisors, in the second observation on page 2 of its Independent Expert Report,
2 expressed a similar concern:

3 *“We have some concerns about the ability of Efficiency Manitoba to deliver the volume of*
4 *services and to recruit the levels of customer participation that it projects in the Plan. On the one*
5 *hand, the fact that Efficiency Manitoba plans to continue a number of programs already being*
6 *operated by Manitoba Hydro may help it get off to a good start. However, in some cases,*
7 *Efficiency Manitoba is projecting customer participation rates significantly higher than those*
8 *achieved by Manitoba Hydro. In other cases, program delivery may be hindered by the fact that*
9 *all the third-party partners Efficiency Manitoba plans to work with are not yet on board. Finally,*
10 *Efficiency Manitoba’s Plan highlights the important role to be played by a new Customer*
11 *Relationship Management system that will ease the process of program sign up for customers.*
12 *However, a contractor for the system is not scheduled to be selected until 2020. Because*
13 *computer system development is notorious for delays, there may be a risk that a delayed CRM*
14 *roll-out will cause Efficiency Manitoba to miss its participation targets”*
15

16 The concerns raised by Mr. Grevatt and Daymark fail to recognize that although Efficiency Manitoba
17 may be a new organization, it is inheriting a long legacy of energy efficiency programming that was
18 started 30 years ago when Manitoba Hydro embarked on the Power Smart program in 1989. While it is
19 a new organization, with a new culture and a highly focused mandate for energy efficiency, it leverages
20 the strengths of the experienced staff and the knowledge of the Manitoba market that has been
21 established by Manitoba Hydro over the past three decades.

22
23 The transition of this DSM legacy is supported by Manitoba Hydro. Being the current sole funder of and
24 significant benefactor from Efficiency Manitoba’s efficiency plan, Manitoba Hydro has a vested interest
25 in supporting a smooth transfer of activities which may include the continuation of services until such
26 time as Efficiency Manitoba is fully operational. Mr. Grevatt’s concerns neglect several key facts
27 associated with the transition of DSM programming from Manitoba Hydro to Efficiency Manitoba.
28 Manitoba Hydro employees are currently supporting the transition of DSM to Efficiency Manitoba. As
29 per the Ministerial Mandate letter received by the Board Chair of Manitoba Hydro², Manitoba Hydro has
30 been and continues to provide support functions specifically in the areas of existing energy efficiency
31 program delivery, procurement, finance, regulatory information technology and creative services. The
32 support provided by Manitoba Hydro will continue as necessary beyond the April 1, 2020

² https://www.gov.mb.ca/asset_library/en/executivecouncil/mandate/hydro_mandate_letter.pdf

1 commencement date consistent with the mutual expectation that this support will gradually subside
2 once transitional activities are completed.

3
4 While Efficiency Manitoba has 5 employees, up to 60 additional Manitoba Hydro DSM staff resources
5 have continued to provide energy efficiency services in Manitoba while also being available to assist
6 with the development and readiness activities associated with anticipated Plan implementation. An
7 experienced, capable and available DSM workforce exists at Manitoba Hydro, and Efficiency Manitoba
8 understands the majority of this workforce is interested in employment with Efficiency Manitoba.
9 Efficiency Manitoba is currently working through arrangements to enable offers of employment to this
10 existing qualified workforce.

11
12 With regards to procurement, Mr. Grevatt specifically points to 21 of 32 contracts that need to be
13 executed prior to April 1, 2020. However, it should be noted that:

- 14 • Seven (7) will simply be transfers of the contracts from Manitoba Hydro to Efficiency Manitoba or
15 will include exercising options to extend as per the contract terms.
- 16 • Four (4) will not require formal request for proposals as they are for pre-approval/pre-qualification
17 of furnace and insulation contractors and can be executed on an ongoing basis.
- 18 • Six (6) of the identified contracts that are required for April 2020, may be covered under one service
19 provider/request for proposals for water and energy saving devices.
- 20 • In home and in-suite efficiency produce installation services may be covered under one service
21 provider / request for proposals.
- 22 • The service provider contract for the Small Business Program and Appliance Recycling will be
23 transferred from Manitoba Hydro until the contracts expire in July 2020 and October 2020
24 respectively. Preliminary work is currently underway and on schedule for a new tender in 2020.

25
26 With respect to the CRM/DSM Tracking System, while Efficiency Manitoba is undertaking the acquisition
27 of this system that is targeted to be in operation by the Fall of 2020, Manitoba Hydro is maintaining its
28 existing information systems and databases. This will enable Efficiency Manitoba to track activity in the
29 various program databases that have been created by Manitoba Hydro until such time as the new
30 CRM/DSM system is operational.

31

1 4. Efficiency Manitoba's approach to Cold Climate Air Source Heat Pump programming is
2 appropriate.

3
4 Mr. Neme, on page 19 of his evidence, makes the following recommendations with respect to cold
5 climate air source heat pumps:

6 *"2. Direct Efficiency Manitoba to increase its emphasis on heat pumps as an electric efficiency*
7 *measure promoted through its Home Renovations program. That should include increased*
8 *financial incentives.";*

9
10 *"3. Direct Efficiency Manitoba to offer heat pumps as an electric efficiency measure for*
11 *electrically heated low income customers eligible to participate in its Income Qualified program.*
12 *Such measures should be offered at no cost to the participating low income customers.*
13 *Furthermore, efforts should be made to ensure that such measures are installed in both single*
14 *family and multi-unit residential buildings." and;*

15
16 *"4. Direct Efficiency Manitoba to offer incentives for heat pumps to customers who currently (A)*
17 *use propane or fuel oil for space heating and (B) qualify for the Affordable Energy Fund."*

18
19 Efficiency Manitoba recognizes that Cold Climate Air Source Heat Pumps (ASHPs) are a promising
20 technology that have experienced an increase in adoption in several markets in the United States.
21 However, Efficiency Manitoba is concerned that there may be risks with the aggressive approach Mr.
22 Neme is suggesting with respect to air source heat pumps.

23
24 The 2017 Residential End Use Survey cites that currently only 0.2% of Manitoban's use an ASHP as their
25 primary space heating system (Section 2 Space Heating, Table 2.05b, page 31). The small size of the
26 existing market suggests that a province wide network of qualified installers capable of performing
27 installations and required maintenance does not yet exist. If a market lacks sufficient installation,
28 operational and maintenance expertise, the effective roll-out of a large scale ASHP program would be
29 made more difficult. The small market penetration noted above is indicative of the challenges that
30 ASHP's have in completely replacing existing installed heating systems in Manitoba's extreme climate.

31 The long-term reliability of ASHP systems in Manitoba's more extreme climate has not yet been clearly
32 established. In order to assess the operation of this technology under actual Manitoba conditions, it may
33 be preferable to undertake the limited program included by Efficiency Manitoba within the Plan,
34 specifically targeting the installation of a smaller number of these units before promoting their
35 widespread adoption.

1 With respect to Mr. Neme’s recommendation to offer ASHPs to Income Qualified Customers at no cost,
2 Efficiency Manitoba notes that the Income Qualified Program does not pay the full cost on any other
3 heating equipment. Currently these programs require a 13% customer co-payment for a standard
4 efficiency furnace upgrade; a 50% customer co-payment for a mid-efficiency furnace upgrade and a 65%
5 customer co-payment for a boiler upgrade. Offering ASHPs at no cost through the Income Qualified
6 Program would be inconsistent with other Efficiency Manitoba offerings and could create confusion with
7 customers about the terms of Efficiency Manitoba’s offerings.

8 Efficiency Manitoba recognizes that ASHP products have been growing in popularity in other
9 jurisdictions and would propose to promote ASHP technology within Manitoba and to do so in a manner
10 that:

- 11 • Affords Efficiency Manitoba the opportunity to determine the reliability and product life
12 implications (and associated program cost risk) associated with long-term exposure to Manitoba
13 winter operating conditions;
- 14 • Affords Efficiency Manitoba the opportunity to better quantify long-term energy savings, peak
15 demand impacts and overall economics associated with ASHP and system interactions with
16 backup winter heating systems;
- 17 • Provides Efficiency Manitoba the required time to engage with Manitoba contractors and to gain
18 insights into market barriers to the development of local trades with the experience installing,
19 operating and maintaining cold climate ASHP systems, and;
- 20 • Overall builds a foundation for continuous improvement that will support Efficiency Manitoba in
21 efforts to promote ASHP products judiciously.

22 5. Efficiency Manitoba supports the development of a standardized methodology for 23 consistently reporting on projected energy savings targets for use in future efficiency plans.

24

25 On pages 12 and 13 of his evidence Mr. Harper suggests the addition of several adjustments to be
26 considered in deriving Efficiency Manitoba’s electric energy savings targets. Mr. Harper suggests that
27 line losses, Station & Construction Power and unmetered sales to flat rate water heating and area &
28 roadway lighting customers all ought to be accounted for within the calculation.

29

1 Efficiency Manitoba has prepared the following tables in the determination of the reference electric
 2 load and Plan energy savings as a percent of this load to illustrate the minimal variability associated with
 3 Mr. Harper’s suggestions:

4 a) Resulting projected energy savings as a percentage of electric load in PUB/EM I-39R at generation
 5 using gross firm energy with no adjustment for station service / construction power:
 6

	2020/21	2021/22	2022/23	Average
Reference electric load (GWh)	26,047	26,029	25,928	-
Annual electric savings (GWh)	373	386	377	379
Savings as a percent of electric load	1.43%	1.48%	1.45%	1.46%

Note: Reference electric load and energy savings are at generation

7
 8 b) Resulting projected energy savings as a percentage of electric load excluding station service and
 9 construction power at generation:
 10

AT GENERATION	2020/21	2021/22	2022/23	Average
Previous Year’s Forecast - Manitoba Hydro 2018 Electric Load Forecast, Gross Firm Energy, Table 7.	26,237	26,528	26,759	
Less – Station Service / Construction Power	200	174	153	
Less 2018/19 DSM	355	355	355	
Less 2019/20 DSM	350	350	350	
Less EM Plan Cumulative Savings	-	373	759	
Plus 2018/19 Cumulative Codes & Standards	160	224	278	
Reference electric load (GWh)	25,492	25,500	25,420	
Target Savings 1.5% (GWh)	382	382	381	
Plan annual electric savings (GWh)	373	386	377	379
Savings as a percent of electric load	1.46%	1.51%	1.48%	1.49%

Note: Reference electric load and energy savings are at generation

11
 12 c) Resulting projected energy savings as a percentage of electric load determined at meter excluding
 13 unmetered loads such as flat rate water heating and area & roadway lighting customers.
 14
 15
 16

1

AT METER	2020/21	2021/22	2022/23	Average
Previous Year’s Forecast - Manitoba Hydro 2018 Electric Load Forecast, Total Sales, Table 6.	22,917	23,199	23,420	
Less – Roadway Lighting & Flat Rate Water Heating	91	91	89	
Less 2018/19 DSM	316	316	316	
Less 2019/20 DSM	310	310	310	
Less EM Plan Cumulative Savings	-	331	674	
Plus 2018/19 Cumulative Codes & Standards	140	196	244	
Reference electric load (GWh)	22,340	22,347	22,275	
Target Savings 1.5% (GWh)	335	335	334	
Plan annual electric savings (GWh)	331	343	335	336
Savings as a percent of electric load	1.48%	1.53%	1.51%	1.51%

Note: Reference electric load and energy savings are at meter

2

3 Re-evaluating the energy savings targets using the recommended alternate methodologies demonstrate
4 that accounting for these adjustments do not significantly alter the projected energy savings as a
5 percent of electric load.

6

7 As stated by Mr. Harper on page 16 of his evidence, “it is noted that for purposes of verifying whether
8 targets are met on an actual basis Efficiency Manitoba will be using actual weather normalized load and
9 the potential for overlap will not exist. What is important, for purposes of developing the target values
10 to be used in future Plans, is that a standard approach be developed and followed.” Efficiency Manitoba
11 supports the development of a standardized methodology for consistently reporting on projected
12 energy savings targets for use in future efficiency plans.

13

14 **6. The Efficiency Manitoba electric portfolio budget is lower than previously forecast within**
15 **the DSM component of 2018 Manitoba Hydro Capital Expenditure Forecast and the near-**
16 **term rate impact analysis prepared by Mr. Bowman has several shortcomings and should**
17 **not be relied upon.**

18

19 “Given the potential for a high-degree of rate impact in the first few 3-year EM programming
20 cycles, consideration should be given to targeting well below 1.5% savings in the early years
21 while marginal values for power are given time to increase”. Evidence of P. Bowman, Section
22 4.1, Recommendation 12.

1 Manitoba Hydro prepares financial plans and forecasts that form the basis for their general rate
2 applications. These financial plans include load forecasts, resource plans, capital investment forecasts
3 and a forecast of the overall cost of service. The sole responsibility for these matters resides with
4 Manitoba Hydro and have been determined to be out of scope for this proceeding as set out in items 2
5 a), b) and c) on page 29 of Order 162/19.

6
7 Efficiency Manitoba is strongly of the view that the analysis provided by Mr. Bowman in Section 4.1 –
8 Short – Term Rate Impacts (PDF pages 23 to 25 of his evidence) is out of scope for this proceeding.
9 However, if it is determined that Mr. Bowman’s analysis is found to be in scope, Efficiency Manitoba
10 would like to address the issues with the analysis provided by Mr. Bowman.

11
12 Mr. Bowman provides an incremental analysis of the impact of Efficiency Manitoba’s Plan on Manitoba
13 Hydro’s electric rates. His analysis includes a forecast cost of DSM programming, an estimate of the
14 reduction in utility revenues resulting from lost domestic load and an estimate of the incremental export
15 revenues from the incremental surplus energy. Mr. Bowman acknowledges that the estimation of
16 export revenues is difficult with the information available. His analysis also attempts to determine the
17 impact of the cost of the Plan on Manitoba Hydro debt and associated finance expense.

18
19 Efficiency Manitoba observes that it is extremely difficult to estimate the impact of DSM investment on
20 an incremental basis. For example, it is difficult to determine the impact on finance expense, as the
21 impact of an investment and its related depreciation and amortization, reductions in domestic load and
22 increases in surplus marketable energy are highly inter-related and more accurately dealt with by
23 Manitoba Hydro in its sophisticated financial planning models.

24
25 Mr. Bowman’s analysis calculates an estimated impact on Manitoba Hydro’s cost of service of \$37
26 million at the end of year 3. Mr. Bowman estimates an impact of 0.17 cents/kWh, or approximately a 3-
27 4% increase to rates for the General Service Large classes (PDF page 24 of his evidence). However, this
28 analysis seems to disregard the fact that some level of DSM investment would otherwise have been
29 made by Manitoba Hydro, in the absence of any programming provided by Efficiency Manitoba.

30
31 In his response to EM/MIPUG I-2 e), Mr. Bowman confirmed that if either Manitoba Hydro or Efficiency
32 Manitoba undertook DSM programming with an equivalent level of investment, finance expense, energy

1 reductions and incremental extra provincial revenues as in Mr. Bowman's example, that his analysis
 2 would result in generally the same impact on MH's cost of service of \$37 million. However, it is worth
 3 noting that Manitoba Hydro's own capital forecast included higher capital costs for DSM programming in
 4 the 2020/21 through 2022/23 period than that shown in Efficiency Manitoba's Plan.

5
 6 Manitoba Hydro's planned DSM expenditures were contained in its most recent Capital Expenditure and
 7 Demand Side Management Forecast for 2018/19 to 2027/28, (CEF18³) as filed in its 2019/20 Electric
 8 Rate Application. The expenditures shown in the table below have been adjusted to consider that the
 9 costs of the Curtailable Rates Program will reside with Manitoba Hydro and will not be part of Efficiency
 10 Manitoba's programming. Forecast DSM investment under the Efficiency Manitoba Plan are shown for
 11 comparison.

Forecast DSM investmest - EM Plan versus MH CEF18	Investment (\$ millions)		
	2020/21	2021/22	2022/23
Manitoba Hydro CEF18	88.9	86.9	66.5
Curtailable Rates Program (to remain with Manitoba Hydro)	6.6	6.8	6.9
Adusted DSM investment CEF18	82.3	80.1	59.6
Efficiency Manitoba Plan	44.55	51.15	50.98
Increase (decrease)	(37.75)	(28.95)	(8.62)

13
 14
 15 The table above shows that the capital investment associated with Efficiency Manitoba's Plan is forecast
 16 to be approximately \$75 million lower than the DSM investment forecast by Manitoba Hydro in CEF18.

17
 18 Mr. Bowman's analysis also does not appear to consider that previous DSM investments made by
 19 Manitoba Hydro in 2009/10, 2010/11 and 2011/12⁴ should be fully amortized in 2020/21, 2021/22 and
 20 2022/23 respectively and would no longer be amortized into the cost of service. A further refinement in
 21 his analysis would be required to account for the net effect to Depreciation and Amortization Expense of
 22 the full amortization of those past year's DSM investments.

³https://www.hydro.mb.ca/docs/regulatory_affairs/pdf/electric/electric_rate_application_2019/06_app_endix_6_-_capital_expenditure_and_demand_side_management_forecast_cef18.pdf

⁴ Manitoba Hydro had forecast DSM expenditures of \$40.3, \$43.0 and \$42.5 million in 2009/10, 2010/11 and 2011/12 from CEF09-1, Table 6.1.2, Tab 6, Manitoba Hydro's 2010/11 & 2011/12 General Rate Application. https://www.hydro.mb.ca/docs/regulatory_affairs/pdf/gra_2010_2012/Tab_6.pdf

1 In his response to PUB/MIPUG-17, Mr. Bowman refers to Manitoba Hydro’s response to PUB/MH I-
2 9(Updated) from the 2019/20 Electric Rate Application. In that particular response, Manitoba Hydro
3 noted the limitations and qualifications of the analysis sought in the information request. The response
4 to PUB/MH I-9(Updated) contains a table that shows additions to Amortization over a five-year period
5 but it does not address the total amortization of DSM for each of those years.

6
7 At the very least, the amortization of DSM in Mr. Bowman’s analysis should be adjusted to reflect the
8 lower level of investment associated with the Efficiency Manitoba Plan and should address the
9 expiration of the amortization of past amounts in the DSM regulatory account.

10

11 Efficiency Manitoba cautions that without fully and properly accounting for the different levels of
12 investment, domestic energy reductions, incremental export sales and related impacts on debt and
13 finance expense, it is not possible to know the overall near-term impact on rates with either Efficiency
14 Manitoba’s Plan or the DSM investment scenario as represented in CEF18. This analysis is most
15 appropriately addressed by Manitoba Hydro within future General Rate Applications.

16

17 7. Efficiency Manitoba is reasonably forecasting program participation within the Plan

18

19 The Daymark report (p. 29 to 44) attempts to assess deliverability of Efficiency Manitoba programming
20 by comparing to similar programs previously offered through Manitoba Hydro. This is summarized in
21 Table 11 in the Daymark report on Page 44.

22

23 Daymark’s misinterpretation of data leads to the conclusion that “*Efficiency Manitoba expects to meet*
24 *its savings deliverability target with a step change in estimated number of projects, for significant*
25 *portion of its overall plan, further illustrating the reasons for the deliverability concerns discussed*
26 *above*”. (p. 44).

27

28 The participant variations presented by Daymark in Table 11, and resulting conclusions are contradicted
29 by following:

- 30 • The Daymark reported differences in the market size (number of projects) of the Lighting Program,
31 between the 2018/19 plan and the EM plan, is a result of ongoing analysis of the market size and is
32 based on new technologies on the market, end of product life of older technologies in the market;

1 and opportunities that will be available to revisit customers who have already participated (for
2 example adding controls to an existing LED lighting system).

- 3 • The Daymark reported differences in the number of insulation (heating) projects within the
4 Renovation bundle appear to have used baselines from Manitoba Hydro's 2018/19 one-year DSM
5 Plan against an average of three years from Efficiency Manitoba's cost-benefit analysis for
6 commercial building envelope measures. In this example, Manitoba Hydro's planned number of
7 *projects* was compared against Efficiency Manitoba's *rebated sales*. Both Manitoba Hydro and
8 Efficiency Manitoba establish participation using rebated sales (i.e., 100 square meters of one
9 measure) and later convert those sales into projects, as it is possible for one project to include
10 multiple measures, for the plan. It should be clarified that instead of 2,122 projects, for Efficiency
11 Manitoba for this measure, it should be corrected in the Daymark report to read 247 projects to
12 provide the equitable comparison to the 270 projects identified for Manitoba Hydro (and no
13 resulting step change).