EB-2019-0271

ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998, S. O. 1998, c. 15, Schedule B;

AND IN THE MATTER OF an application by Enbridge Gas Inc. To extend approved 2020 Demand Side Management Plan for one year into 2021

GEC Comments on Enbridge 2021 DSM Plan Proposal

Introduction

Enbridge has proposed that the OEB extend the current 2015-2020 DSM Framework through 2021. Specifically, the Company is requesting that the approved Enbridge and Union 2020 DSM plans, "including all programs, scorecards, and parameters (i.e., budget, targets, incentive structure)" be "rolled-forward" into 2021.[1]

Consistent with the comments provided by Environmental Defence, which we endorse, GEC is concerned that simply extending the status quo another year means missing an important opportunity to begin ramping up programs and laying the groundwork for both acquiring more cost savings for consumers and putting the utility on the path necessary to meet Ontario's greenhouse gas emission reduction goals. That said, we understand that the Board has conceptually endorsed the idea of a extending the current gas DSM framework and has asked parties to "focus their participation during this proceeding on ensuring that the OEB's previously-approved 2020 DSM plans will continue to deliver cost-effective savings in 2021…"[2] Thus, our comments are focused on the narrow issue of whether any element of a "roll-over" of Enbridge's (and Union's) 2020 DSM plans into 2021 would inappropriately lead the utility to pursue DSM in ways that could adversely affect the delivery of cost-effective savings.

Given that narrow focus – and given the limitation of available data – we find that most of Enbridge's proposal with respect to the continuation or rolling over of 2020 programs, budgets, performance metrics and other features of its current DSM plan into 2021 appear to be reasonable. There is only one significant exception to that conclusion. Specifically, the rolling over of both Enbridge's and Union's performance metrics for their residential retrofit programs is problematic because the metrics are

[1] EB-2019-0271, Exh. A, p. 4 of 6.
[2] EB-2019-0271 OEB Procedural Order, February 24, 2020, p. 3.

outdated given recent federal standards requiring the vast majority of new gas furnaces to have a minimum efficiency rating of 95%.

We request the adjustments outlined below with the aim that Enbridge would re-allocate resources that would otherwise be ineffectively spent on furnace incentives toward measures that will result in greater savings such as to other measures in the HER program and/or to other programs (e.g., by increasing prescriptive C&I rebates for measures with modest market uptake to date) which provide greater savings and are much more cost-effective.

Current Home Retrofit Program Performance Metrics

Summary

Under their Board-approved 2015 to 2020 DSM plans, both Enbridge and Union have a performance metric – and therefore the ability to earn shareholder incentives – for their residential home retrofit (HER) programs: what Enbridge called its Home Energy Conservation program and what Union called its Home Reno Rebate program.[3] Enbridge's metric is labeled the number of "Residential Deep Savings Participants"; Union's is called "Home Reno Rebate Participants (Homes)". In both cases, a participant is defined as a customer who installed at least two major measures. Also, in both cases, to earn an incentive the average gas savings must be at least 15% on average across all participants. It is worth noting that these metrics and their definitions have been around a long time. In fact, in Enbridge's case, they date as least as far back as its 2012 DSM plan.[4]

Definition of Major Measures

In its 2015-2020 DSM Plan, Enbridge defined major measures as follows[5]:

- Heating system replacement
- Water heating system replacement
- Wall insulation
- Basement insulation
- Attic insulation
- Air sealing (minimum of 10% leakage reduction as measured by a blower door)
- Exposed floor insulation
- Drain water heat recovery
- Windows

Union's 2015-2020 filed plan has a very similar measure list. It is different only in that it omits "exposed floor insulation", it provides more detail on heating system replacement (specifically referencing both furnaces and boilers, and it includes doors).[6]

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[3] Following the Enbridge-Union merger, the programs have been rebranded under a single program name of Home Efficiency Rebate (EB-2019-0271 Exh. I.EP.4)

[4] EB-2011-0295, Exh. B, Tab 1, Schedule 3, pp. 4-5 of 22.

[5] This list is from Enbridge's filed plan in EB-2015-0049, Exh. B, Tab 2, Schedule 1, p. 23 of 100. .

[6] EB-2015-0029, Exh A, Tab 3, Appendix A, p. 4 of 117.

Estimating Savings

For the purpose of estimating savings, and therefore determining whether the average 15% savings metric has been achieved, both Enbridge and Union rely on the HOT2000 building energy simulation software with inputs of building characteristics and efficiency levels input by certified home energy raters. In cases where a new furnace was installed, Union has historically required home energy raters to use a 90% efficient furnace as the baseline input into the HOT2000 software, as 90% was until recently the minimum efficiency permitted to be installed.[7] GEC is not clear on whether Enbridge has been doing the same (or whether it has been using the efficiency of the old furnace being replaced as the baseline from which savings are being calculated).

The Concern

Participant/Savings Definitions Don't Reflect New Canadian Furnace Efficiency Standards

Enbridge has not proposed any change to the definition of a participant in either home retrofit program for 2021. However, the definitions are now outdated. GEC has several concerns with them. However, we will focus our discussion on the most important and glaring of those concerns: (A) the potential for a gas furnace replacement to count as one of the two required "major measures" for a customer to be counted towards the utilities' participant goals; and (B) for those customers replacing a furnace, the potential for participant savings to be estimated based on an inappropriately low baseline furnace efficiency assumption.

The fundamental purpose of the utilities' home retrofit program performance metrics– including the definition of participants as customers installing at least two major measures and collectively achieving at least 15% savings – has always been to promote comprehensive, deep retrofits of existing homes. Counting a new furnace as a major measure may have made sense when the federal standard was 90% efficiency and a customer was persuaded to install a 95% or 96% efficient furnace. However, under current Canadian federal product efficiency standards, an "automatic operating gas-fired central forced air furnace"[8] manufactured after July 3, 2019 must have an AFUE (efficiency rating) of at least 95%.[9] The U.S. Energy Star program has a "most efficient" designation – the best of the best on the market. For 2020, that designation is applied to furnaces with an AFUE of 97% or higher.[10] In other words, while furnaces with efficiency ratings above the new Canadian minimum of 95% can be purchased, the incremental savings are very modest, in most cases just 1% or 2%. In this context, it no longer makes sense to treat a furnace replacement as a major measure in the utilities' residential retrofit programs.

Also, for those participants installing a new furnace, it no longer makes sense to estimate participant savings relative to an assumed baseline efficiency of 90% - or the old federal standard. Instead, all estimates of savings produced by each customer who replaced a furnace (whether as a result of the program or not) should be calculated relative to a home with a 95% efficient furnace.

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[7] EB-2019-0271, Exh I.STAFF.5, Attachment 1, p. 13.
[8] This represents the vast majority of furnaces sold.
[9] https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-regulations/guide-canadas-energy-efficiency/gas-furnaces/6879
[10] https://www.energystar.gov/products/most_efficient/furnaces

Substantial Implications for Shareholder Incentives

The implications of this concern are non-trivial. As Table 1 below shows, under the Board approved 2015 to 2020 DSM Plans, each utility's maximum shareholder incentive of $10.45 million is allocated to program categories in proportion to the approved budgets for each program category. In Enbridge's case, the approved Resource Acquisition budget for 2020 – and therefore the proposed budget for 2021 – is 67.1% of its total programs budget; in Union's case the Resource Acquisition budget approved for 2020 and proposed for 2021 is 61.9% of its total programs budget. That means the maximum shareholder incentive for Resource Acquisition program performance proposed for 2021 is $7.01 million for Enbridge and $6.46 million for Union. Under both the approved 2015 to 2020 DSM Plans and Enbridge's proposal for 2021, 20% of the weight of Enbridge's Resource Acquisition scorecard and 25% of Union's are attached to their performance on their residential retrofit programs.[11]

Table 1: Enbridge/Union Proposed Max Shareholder Incentives by Program Category for 2021

	Budget (millions $)		Budget %		Max Incentive (Millions $)	
Program Category	**Enbridge**	**Union**	**Enbridge**	**Union**	**Enbridge**	**Union**
Resource Acquisition	$ 42.91	$ 36.31	67.1%	61.9%	$ 7.01	$ 6.46
Large Volume	$ -	$ 4.00	0.0%	6.8%	$ -	$ 0.71
Low Income	$ 13.85	$ 15.01	21.7%	25.6%	$ 2.26	$ 2.67
Market Transformation	$ 7.18	$ 2.34	11.2%	4.0%	$ 1.17	$ 0.42
Performance-Based	$ -	$ 1.05	0.0%	1.8%	$ -	$ 0.19
Total	$ 63.94	$ 58.71	100.0%	100.0%	$ 10.45	$ 10.45

Put simply, it would be inappropriate for the company to be able to earn potentially millions of dollars in shareholder incentives based on either (A) promotion of a product whose efficiency is only marginally better than the minimum a customer could buy; or (B) for participants that do replace a furnace, an estimate of gas savings that is not real because it is based on old product efficiency standards rather than current minimum requirements.

Potential Cost-Effectiveness Concerns

Furthermore, it is doubtful that furnaces with an efficiency greater than the 95% AFUE federal standard are cost-effective. While GEC has not conducted a detailed assessment of cost-effectiveness given the limited scope of this proceeding, we note that one reputable source suggests that the incremental cost of just upgrading from 95% to 96% is on the order of $280 CDN.[12] In a home with annual heating consumption of 2200 m^3 per year,[13] that would translate to a levelized cost of nearly $1.00 per m^3 saved over the life of the furnace.[14] That is more than triple Enbridge's current average residential rates.[15]

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[11] Enbridge Application, Exhibit A, Attachment 1, p. 1 and Exhibit A, Attachment 2, p. 1.

[12] Illinois Technical Reference Manual, Version 8.0, Volume 3: Residential Measures, p. 108, estimates the incremental cost at $212 USD (https://s3.amazonaws.com/ilsag/IL-TRM_Effective_01-01-20_v8.0_Vol_3_Res_10-17-19_Final.pdf).

[13] The average post-treatment gas consumption of homes which participated in Enbridge's 2018 home retrofit program was 2917 m^3. If 75% of that consumption was for space heating, the average baseline for measuring gas savings from further upgrading furnace efficiency beyond 95% would be 2188 m^3.

[14] Calculated assuming a real discount rate of 4% (per Enbridge's avoided cost tables) and a furnace life of 18 years (per the Ontario TRM).

Moreover, given the most recent avoided costs available from Enbridge,[16] the 96% furnace would produce slightly more than $100 in net present value benefits and therefore fail cost-effectiveness with a benefit-cost ratio of between 0.3 and 0.4.

Implications for Program Design

We also have questions about the reasonableness of Enbridge's current offering of a rebate of up to $750 for a 96% furnace. We understand that the Company has relied on HVAC contractors to drive participation in its programs and the challenge of moving away from that model. It may even be reasonable to use such an incentive as a marketing tool – or a form of "loss leader" – to drive participation. However, there may be other, better ways to drive participation which this proceeding has not afforded us or other parties the time or opportunity to explore. Thus, we are not taking a position on the Company's program design. Instead, we are suggesting that it is important that the Board establish a 2021 performance metric that makes sense in light of the new Canadian furnace efficiency standards so that the Company can determine how to optimize its program design *with the right goals in mind*, rather than with the objective of meeting a goal that no longer makes sense given changes in federal efficiency standards. That may or may not cause the Company to change whether and/or how much of a rebate it offers for 96% furnaces.

Proposed Alternative

GEC continues to feel strongly that it is important for Enbridge to continue promoting the sealing and insulating of homes in its service territory. Indeed, experience across numerous jurisdictions suggests that the savings from such efforts are among the least likely to occur absent utility DSM programs. They are often among the most challenging savings to acquire, suggesting that it is appropriate to maintain a performance metric targeted to this market. Both Enbridge's residential retrofit program and its performance metric probably need a more comprehensive review and redesign than is contemplated for this proceeding. However, some modification to the performance metric for 2021 is necessary and cannot wait.

In the interest of simplifying the change for 2021, GEC proposes the following:

- no change to the allocation of weight to the metric,
- no change to basing the metric on "participants"
- modifying the current definition of participant as follows:
    - maintaining the requirement of average savings across all participants being at least 15%,
    - for customers who replace a furnace, modifying the calculation of percent savings so that it is based on a 95% efficient furnace as the "baseline" or "pre-treatment" condition; and

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[15] https://www.enbridgegas.com/-/media/Extranet-Pages/Understanding-gas-rates/Rates/Rate-1-System-English.ashx?la=en&hash=B574E2C18808C8E38440491CCD17F8C264FACB83

[16] For simplicity, we used the avoided costs for Enbridge's historic service territory from Enbridge Gas, DRAFT 2019 Demand Side Management Annual Report, May 29, 2020, Appendix A. Avoided costs in the historic service territory of Union Gas are very similar. We also assumed that their reported avoided carbon costs are additive to their reported avoided gas costs. If they are not, the benefit-cost ratios we estimate would be worse.

- modifying the current requirement for multiple "major measures" to either (A) multiple major measures, *not counting furnace replacements*; or (B) a single major measure with at least 7.5% savings.

- Establishing a new participant target based on the mid-point between the number of counted participants in 2018 and what the 2018 count would have been had heating system replacements not been allowed to count towards the minimum of two major measures. The result would be a goal of 9558 participants for Enbridge and 11,429 participants for Union.

The change in definition of a participant to one requiring two major measures, but excluding a furnace, will undoubtedly make achieving participation levels similar to those experienced in the past challenging. For example, as Table 2 shows, in 2018, the last year for which we have program data, Enbridge reported to the Evaluation Contractor that it had 14,428 participants with at least two major measures,[17] but our analysis of the data suggests that only 4688 of those had two measures without a heating system replacement. That almost certainly understates the number who would have qualified under GEC's proposed redefinition of a participant because it removes 2018 participants who replaced boilers rather than furnaces. Such customers would still count as participants under GEC's proposal, but we do not have a way to estimate how many of the heating system replacements in 2018 were boiler replacements. Also, it excludes customers who installed one non-furnace measure that achieved savings of at least 7.5% - GEC's proposed expansion of the participant definition – because we have no way to estimate how many more customers would have met that requirement. Of course, the Company can also modify its program design to better tailor it to the improved participant definitions we are recommending. For example, it could shift rebate dollars allocated to furnaces to increase incentives for air sealing and insulation measures.

Table 2: Proposed 2021 Participant Targets

Participant Definition	Enbridge	Union
2018 Participants Meeting Current Definition of 2 Major Measures	14,428	16,118
2018 Participants with 2 Major Measures Excluding Heating System	4,688	6,740
Mid-Point of Two Values	9,558	11,429

That said, even with such changes we suspect it would be extremely challenging to achieve 2018 participation levels. Thus, as noted in both Table 2 and the bullets above, in order to establish goals that are both sufficiently meaningful and achievable, we propose that the 2021 participation targets be set as the mid-point between the 2018 counted participants and the number of 2018 participants with two major measures other than a heating system replacement. Of course, the Company always has the flexibility to shift resources away from this program to boost results on its other performance metrics.

Conclusion

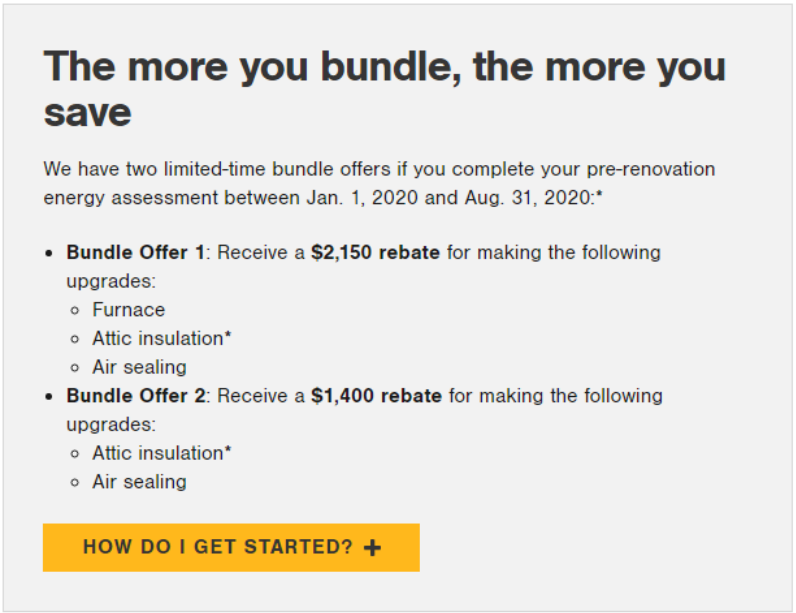
In its argument in chief, Enbridge resists any change to its programs or scorecards, essentially re-arguing the points it made in resisting GEC's motion for better interrogatory responses. Enbridge seems to ignore the fact that the Board granted part of GEC's request, clearly signifying that the Board has not ruled out limited changes if they are needed to ensure cost-effectiveness and maximization of results

[17] I.GEC.1 Updated Attachment 2. Note that the Evaluation Contractor eliminated 15 of those participants as non-qualifying in its annual verification process.

from the current offerings. As discussed above, the data GEC obtained reveals that cost-effectiveness and efficiency maximization are indeed in jeopardy in at least one program –the Home Efficiency Rebate ("HER") program offering (formerly EGD's Home Energy Conservation and Union Gas's Home Reno Rebate).

In paragraph 27 of its argument in chief, referring to the Home Energy Retrofit programs, Enbridge asserts that "*these program offerings remain cost-effective".* GEC submits that Enbridge's carefully chosen wording may be true for the program or programs ***overall*** but not for the vast majority of furnace replacements where the 1% improvement in efficiency that a higher than government standard furnace would provide would not justify the added costs.

This is not a small concern. The data provided following our motion reveals that nearly 27,700 of the approximately 30,500 HER participants in 2018 replaced heating systems.[18] Further, Enbridge is offering $750 customer rebates for furnace upgrades as is apparent from the difference between the two bundles in its current offering (https://enbridgesmartsavings.com/home-efficiency-rebate/home-energy-upgrades):



The more you bundle, the more you save

We have two limited-time bundle offers if you complete your pre-renovation energy assessment between Jan. 1, 2020 and Aug. 31, 2020:*

- **Bundle Offer 1**: Receive a **$2,150 rebate** for making the following upgrades:
  - Furnace
  - Attic insulation*
  - Air sealing
- **Bundle Offer 2**: Receive a **$1,400 rebate** for making the following upgrades:
  - Attic insulation*
  - Air sealing

HOW DO I GET STARTED? +

This would amount to up to nearly $21 million of program expenditure based on the 2018 participation data (28,000 participants X $750). As noted above, while we have our doubts about whether this is the best way for Enbridge to spend its DSM budgetary resources, we are not asking the Board to constrain the Company's program design options. Rather, we are asking the Board to change the way the HER performance metric is structured so that Enbridge can optimize its program design based on goals that make sense under current federal efficiency standards, rather than spending money to meet outdated

[18] Table 2 above suggests that 4688 Enbridge participants and 6740 Union participants in 2018 would have met a two major measure requirement even if a heating system replacement did not count as a major measure. Most of those customers did replace their heating system. It is just that they also installed at least two other major measures as well (i.e., most had three or more "major measures" under the 2018 program definition that includes heating system replacements).

goals. That may result in the Company redirecting the substantial budgetary resources it might otherwise spend on furnaces to other measures in the HER program and/or to other programs (e.g., by increasing prescriptive C&I rebates for measures with modest market uptake to date) which provide greater savings and are much more cost-effective.

Accordingly GEC submits that the Board should require changes to the HER programs and the associated scorecards as follows:

- Modifying the current definition of participant as follows:
    - maintaining the requirement of average savings across all participants being at least 15%,
    - for customers who replace a furnace, modifying the calculation of percent savings so that it is based on a 95% efficient furnace as the "baseline" or "pre-treatment" condition; and
    - modifying the current requirement for multiple "major measures" to either (A) multiple major measures, *not counting furnace replacements*; or (B) a single major measure with at least 7.5% savings.
- Establishing a new participant target based on the mid-point between the number of counted participants in 2018 and what the 2018 count would have been had heating system replacements not been allowed to count towards the minimum of two major measures. The result would be a goal of 9,558 participants for Enbridge and 11,429 participants for Union.

All of which is respectfully submitted, this 10th day of June, 2020.

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