

**Enbridge Gas Inc.**

**Application for Multi-Year Natural Gas Demand Side  
Management Plan (2022 to 2027)**

**GEC CROSS COMPENDIUM**

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The Vice President, Business Development and Regulatory has the following goal statement for 2021 that tie to DSM.

- Deliver or exceed DSM incentive target of \$7.2M in 2021 and preservation of DSMI for 2022.
  - OEB Approval of an IRP framework and internal approval of a next gen DSM plan that preserve growth opportunities including in non-pipe alternatives
- c) Energy Conservation information about existing DSM programs including historical and projected results, incentive levels, and approved cost effectiveness screening requirements is provided to the Integrated Resource Planning group for the development of the IRP Framework. With the receipt of the recent IRP Framework decision, work on Integrated Resource Planning is underway and the Company is in the process of determining how to best address the development of appropriate programming for IRP that will be incremental to the DSM programming already in place. The audited results of the DSM programs are used by the Economic Evaluation and Forecast team as one of the inputs to the demand forecast for the Company. The resulting demand forecast is used by gas supply planning and system planning. DSM is not involved in the Company's low carbon transition efforts (Scope 1 and Scope 2 emissions) nor is it involved in new business ventures.
- d) There is no committee, working group or other body that reviews the plans, programs, offerings, or results of the DSM Programs outside of the OEB, EC, EAC and the Company staff within the DSM group.
- e) Confirmed. The DSM group and its executives do not report to an independent advisory or governance body outside of the utility (other than the EAC). Currently the governance and evaluation process is set out as filed in Exhibit C, Tab 1, Schedule 1, Appendix 1. If the OEB were to consider creating an independent advisory or governance body, Enbridge Gas would at that time engage with the OEB and provide suggestions and/or feedback based on the scope of any requested feedback. This being said, such feedback would necessarily be informed by the fact that the OEB has jurisdiction only over Enbridge Gas and that it is Enbridge Gas that is ultimately accountable to the OEB for its DSM activities, not some independent advisory or governance body. As a result, final decision making authority must remain with the Company in respect of all material matters.
- f) There are 3 primary mechanisms in place to ensure the success of DSM programming is not compromised. First, accountability for DSM is separate and distinct from accountability for distribution revenue. Executive accountability for Energy Conservation and the DSM programs is with the Vice President Business Development and Regulatory, whereas executive accountability for the distribution revenues is with the Vice President Customer Care. Secondly, the

ENBRIDGE GAS INC.

Answer to Interrogatory from  
Environmental Defence

Interrogatory

**Issue 2**

Reference:

EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87

Preamble:

In the previous DSM plan decision, the OEB directed Enbridge to present an analysis of net rate impacts. The direction reads as follows:

“The cost impact of DSM programs for a customer was discussed during the proceeding. Some parties suggested that this cost impact be shown as a net rate impact, and both the benefits and the costs of the DSM programs be included in the same calculation. The OEB suggests the gas utilities consider a net rate impact approach further. Some areas to consider include: the sample (e.g., years, participants, customers, etc.) required to reasonably consider the benefits and costs to customers, price forecasts used, demand reduction impact on price, among others. This analysis should be presented to the OEB as part of the gas utilities' next multi-year DSM plans.”<sup>1</sup>

Question(s):

- (a) Please provide a copy of the analysis that the OEB said should be presented as part of the gas utilities' next multi-year DSM plans in the above passage.
- (b) Please provide the avoided cost figures used by Enbridge for avoided in-franchise distribution and transmission costs (i.e. excluding upstream savings in shipping tariffs). Please provide the complete figures with a full breakdown by year, etc. It is not clear to us, but Enbridge may refer to these as avoided natural gas downstream infrastructure costs (per Exhibit C, Tab1, Schedule 1, Page 48).
- (c) Please describe what DRIPE is.

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<sup>1</sup> EB-2015-0029/0049, Decision and Order, January 20, 2016, p. 87.



- (d) Please provide Enbridge's best estimate of the price suppression effect of conservation savings in the Ontario market.
- (e) Please provide any studies that Enbridge has identified regarding the quantification of DRIPE / price suppression.
- (f) Please provide the marginal capital cost arising from an additional m<sup>3</sup> of design day demand in Enbridge's system. Please provide an average figure over the entire system. If it significantly varies from place to place, please provide location-specific figures.

### Response

- a) Enbridge Gas would like to correct the assertion in the question. The OEB clearly provided a suggestion for further consideration from a 2016 perspective. The suggestion would require definition of a number of variables and an appropriate analytical framework in order to consider what impact, if any, this might have on future DSM Plan development. Further, the context around the suggestion refers to the monthly bill impact, commonly referred to as the \$2/month residential rate impact. Subsequently, in the DSM Letter in 2020, the OEB clearly refers to the current budget levels, the fact that they had doubled from the previous term and then states, "*The OEB anticipates modest budget increases to be proposed by Enbridge Gas...*" In the OEB's most recent direction to the Company of submission of the next DSM Plan, there is no reference to the residential rate impact, only to the current, existing budgetary levels most recently approved by the OEB (2021 and since 2022) and the expectation of modest increases from these budget levels. Additionally, in the DSM Letter, the OEB mentioned a number of expectations and considerations for the DSM Plan development, however, net rate impacts was not one them. In the context, where Enbridge Gas was given only 5 months to develop, complete and file a DSM Plan application, the decision was made not to perform this analysis and therefore an analysis cannot be provided.
- b) Enbridge Gas avoided costs are broken out and quantified in the categories listed in evidence at Exhibit E, Tab 5, Schedule 1, page 5. Enbridge Gas is interpreting avoided in-franchise distribution and transmission costs (i.e. excluding upstream savings in shipping tariffs) to be the sum of the following avoided cost categories:
  - Avoided natural gas downstream infrastructure costs
  - Avoided unaccounted for natural gas fuel losses
  - Avoided natural gas seasonal storage costs (applicable to Union Rate Zones avoided costs only)

For the figures and breakdown by year for these avoided cost components, see the 'Avoided DS Infrastructure' and 'Avoided Unaccounted for Fuel Loss' tabs within Exhibit I.5.EGI.ED.16 Attachment 1 (EGD rate zone) and Exhibit I.5.EGI.ED.16, Attachment 2 (Union rate zones).

- c) DRIPE is described in evidence at Exhibit E, Tab 5, Schedule 1, Attachment 4, page 5, in the Guidehouse DSM Avoided Costs Study as follows:

"Demand reduction-induced price effects (DRIPE), also known as price effects – these are reductions in the wholesale price of the gas commodity based on structural changes in the market due to the load reduction caused by energy efficiency".

d - e)

Enbridge Gas does not have estimates or studies that quantify the price suppression effects of conservation in the Ontario market. In 2020 Enbridge Gas engaged Guidehouse Inc. to conduct a jurisdictional scan on industry best practices for avoided costs and found that 8 of 9 jurisdictions do not account for DRIPE (Exhibit E, Tab 5, Schedule 1, pages 5 to 7). The amount appears to be small as referenced in Exhibit E, Tab 5, Schedule 1, Attachment 4, page 20 for the only jurisdiction Guidehouse was able to find that utilized DRIPE.

- f) Enbridge Gas believes this is out of scope to the DSM proceeding as it is asking about system design which is a topic more suited to IRP. Please refer to Exhibit I.1.EGI.PP.5 for details on how Enbridge Gas will continue to integrate IRP into its planning and analysis processes.

- I expect to see the establishment of multi-year natural gas Demand Side Management (DSM) programming and the implementation of the OEB's Integrated Resource Planning framework for assessing demand-side and supply-side alternatives to pipeline infrastructure in meeting natural gas system needs. I would like to express my strong interest in a framework that delivers increased natural gas conservation savings and reduces greenhouse gas emissions. Conservation is a strong driver for cost savings for ratepayers, and with the introduction of carbon pricing, conservation can also transform homes and help protect ratepayers from the impact of the carbon tax. Natural gas conservation programs have delivered continued value for money for ratepayers – based on OEB-verified results for 2019, every dollar spent on natural gas DSM has resulted in up to \$3 in participant and social benefits.
- With regard to the next multi-year DSM programming period, it is important that the regulatory processes are optimized to increase efficiency so that they do not hinder Ontarians' access to the real savings that result from these programs. It is also important that the DSM Framework be implemented in a way that enables customers to lower energy bills in the most cost-effective way possible, and help customers make the right choices regardless of whether that is through more efficient gas or electric equipment. I also wish to stress the continued need to foster integration and alignment between natural gas and electricity conservation programs to find efficiencies and to facilitate a streamlined customer experience, where feasible. That said, I am pleased to see the continued collaboration between the IESO Conservation and Demand Management (CDM) and DSM programs in the low-income space and encourage further collaboration, as appropriate. Likewise, as communicated in a recent letter from the Ministry to the federal government encouraging collaboration between DSM and the new Canada Greener Homes Program, it is important that the OEB considers how to use Ontario's DSM programs to leverage these federal funds to benefit Ontario ratepayers.
- The *Supporting Broadband and Infrastructure Expansion Act, 2021* (Bill 257) received Royal Assent on April 12, 2021. This Act contains amendments to the *Ontario Energy Board Act, 1998* that, when proclaimed into force, would establish new authorities in support of the use of and access to electricity infrastructure for non-electricity purposes. As ENERGY considers how these authorities can support the government's objectives for rural broadband expansion, continued consultation and collaboration with the OEB will be essential.
- Modernizing and streamlining processes to reduce regulatory burden is vitally important to the work of an efficient and effective regulator. I am pleased that the OEB has taken steps in this direction in response to the 2020 Mandate Letter, including reviewing how filing requirements can be tailored to LDC size, releasing the Chief Commissioner's Plan with initiatives to enhance adjudicative processes and launching a review of the Reporting & Record-keeping Requirements.

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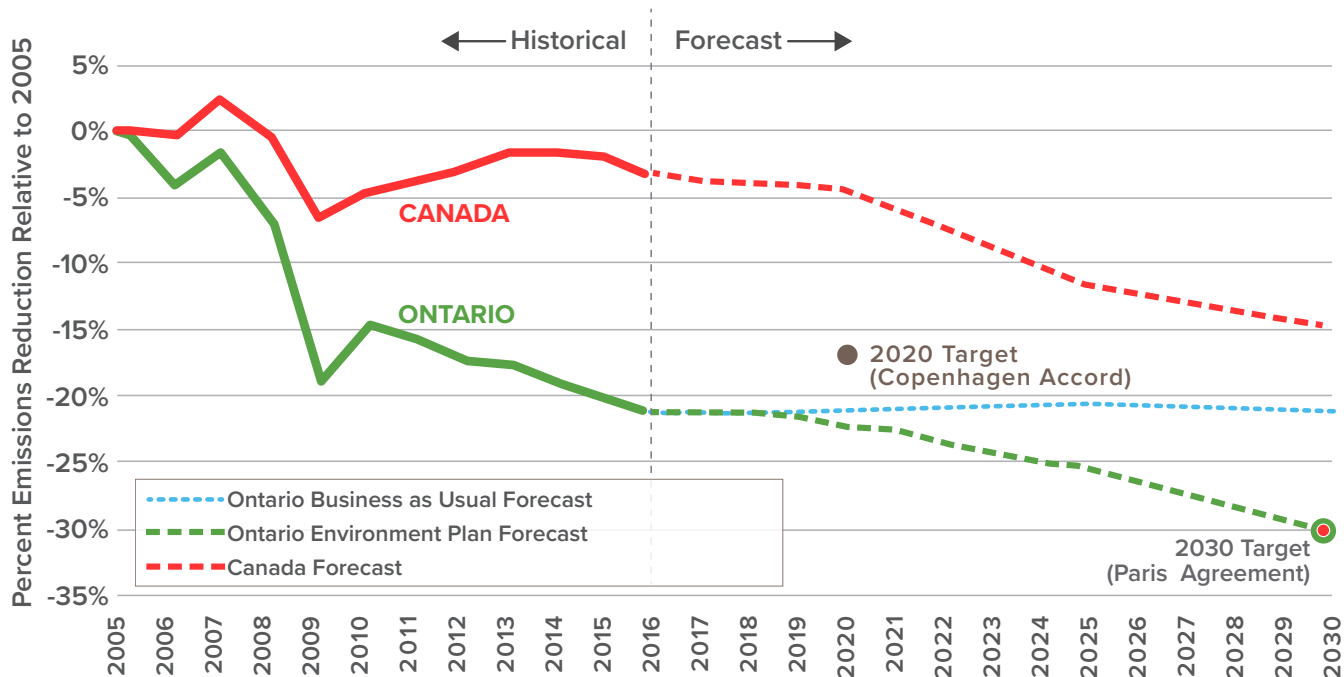
This target takes into consideration the commitment the people of Ontario have already shown in reducing emissions, as well as our commitment to growing Ontario's economy while doing our part to tackle climate change.

There has been a steep decline in emissions from 2005, driven in large part by improvements in the electricity sector, including closing coal-fired

electricity generation. As a result, we are on track to do better than the federal 2020 target set under the Copenhagen Accord in 2010.

The following graph shows our 2030 target is achievable. The policies within this plan will put us on the path to meet our 2030 target, and we will continue to develop and improve them over the next 12 years. This plan will be reviewed and revised on a four-year basis.

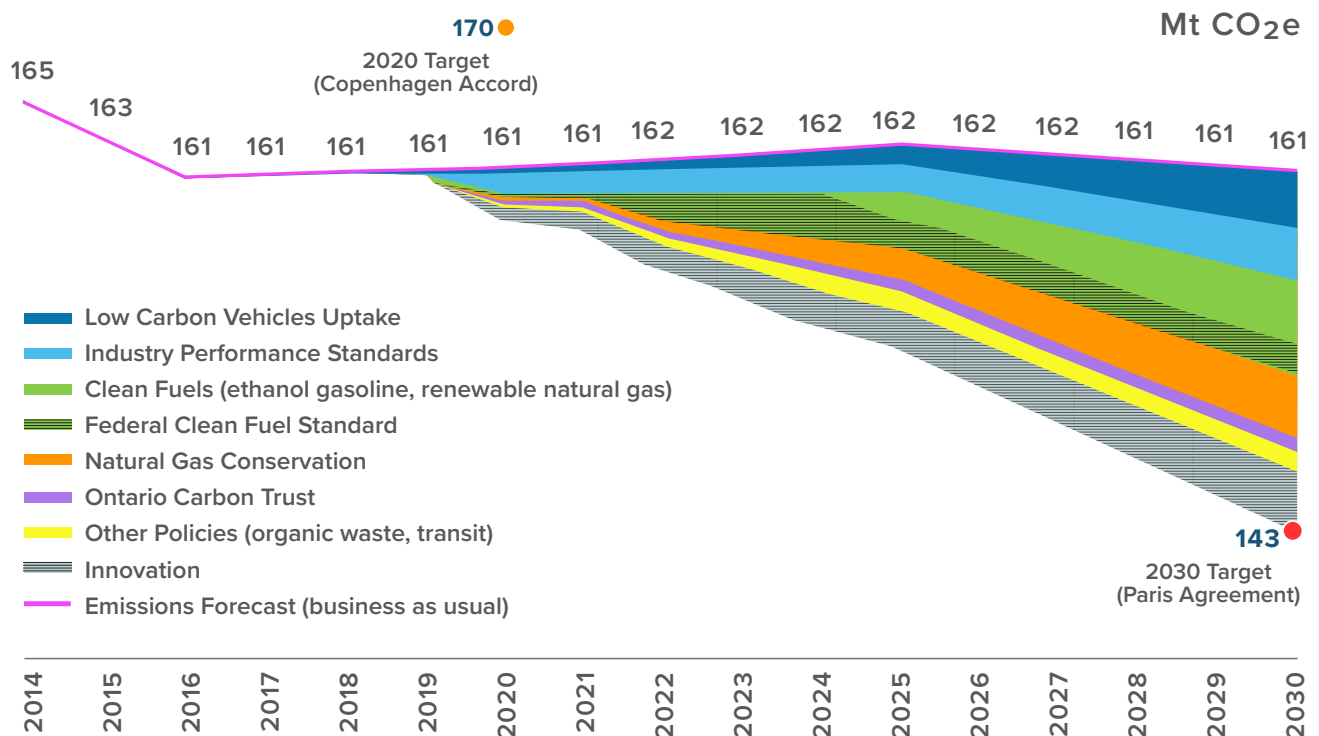
### Past and Projected Greenhouse Gas Emission Reductions for Canada and Ontario



Source: Environment and Climate Change Canada (2018) National Inventory Report 1990-2016: Greenhouse Gas Sources and Sinks in Canada. Canada 2017 Biennial Report and internal Ontario modelling.



## Path to Meeting Ontario's 2030 Emission Reduction Target



The chart above shows where we expect Ontario's emissions to be if we take no action (161 megatonnes) compared to where we expect our emissions to go if we take actions in specific sectors. Our target is equivalent to 143 megatonnes in 2030 and we will need reductions in key sectors identified in the graph to get there.

The coloured portions of the chart above refer to emissions reductions we expect to see from actions in this plan and the shaded portions represent the potential we have to enhance some of those actions.

The actual reductions achieved will depend on how actions identified in our plan are finalized based on feedback we get from businesses and communities. The estimated reductions are explained in more detail below.

The **Low Carbon Vehicles** uptake portion refers primarily to electric vehicle adoption in Ontario and in small part to the expansion of compressed natural gas in trucking.

**Industry Performance Standards** refer to our proposed approach to regulate large emitters of greenhouse gas emissions, as described later in this plan. The final impact of this approach will depend on consultation with industry partners.

**Clean Fuels** refer to increasing the ethanol content of gasoline to 15% as early as 2025, and encouraging uptake of renewable natural gas and the use of lower carbon fuels.

The Federal **Clean Fuel Standard** is an estimate of the additional impact of the proposed federal standards, which could expand the use of a broad range of low-carbon fuels, energy sources and technologies, such as ethanol, renewable natural gas, greener diesel, electricity, and renewable hydrogen.

**The Natural Gas Conservation** action reflects programs that are well established in Ontario to conserve energy and save people money. This case assumes a gradual expansion of programs delivered by utilities, which would be subject to discussions with the Ontario Energy Board.

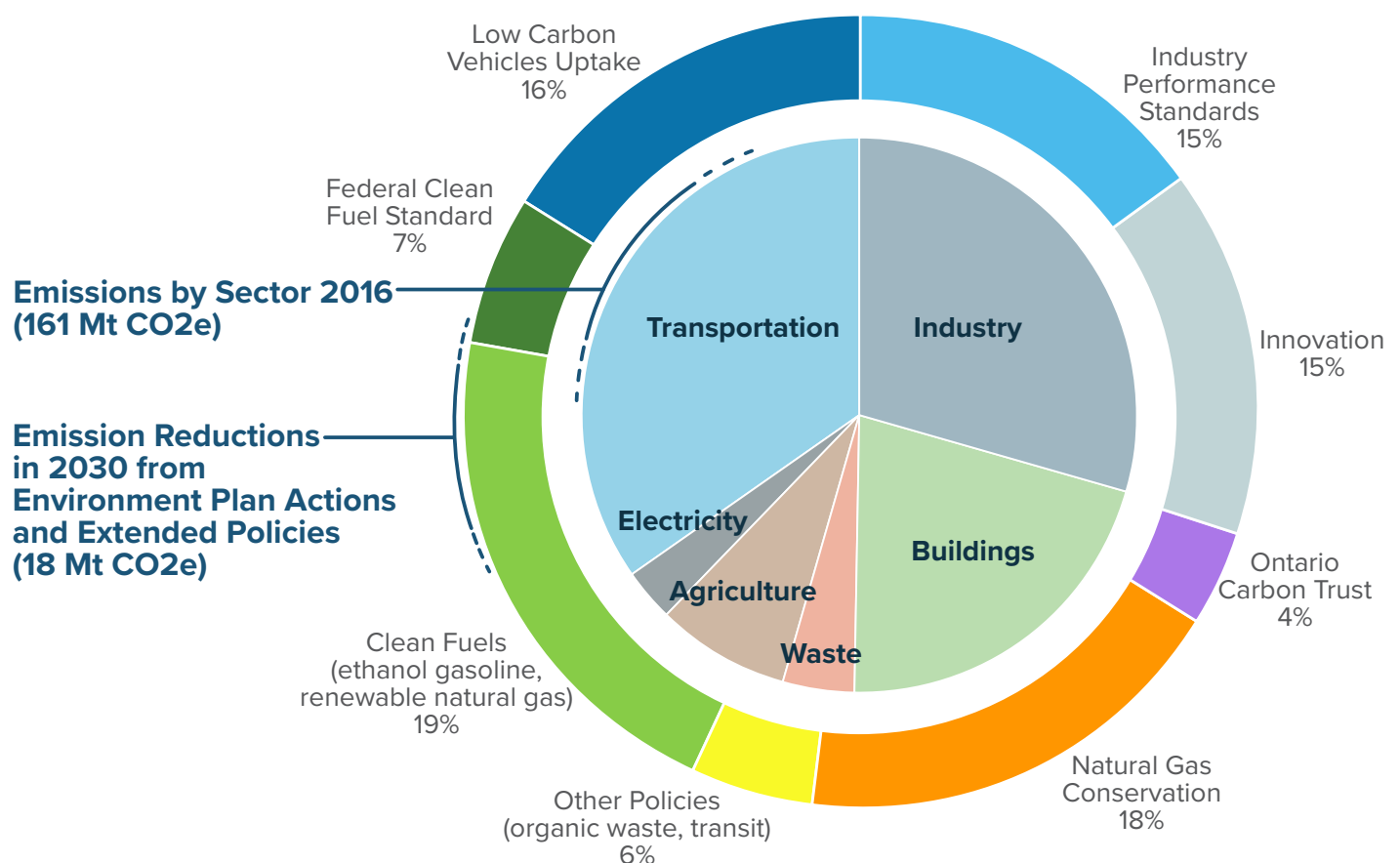
■ The **Ontario Carbon Trust** is an emission reduction fund that will use public funds to leverage private investment in clean technologies that are commercially viable. For this action we estimate a fund of \$350 million will be used to leverage private capital at a 4:1 ratio. Estimates will depend on the final design and mandate of the trust. The estimates also include the potential emission reductions associated with a \$50 million Ontario Reverse Auction designed to attract lowest-cost greenhouse gas emission reduction projects.

■ **Other policies** include the emission reductions associated with investments in public transit, and our commitment to improve diversion of food and organic waste from landfills, as described later in this plan.

■ **Innovation** includes potential advancements in energy storage and cost-effective fuel switching from high intensive fuels in buildings to electricity and lower carbon fuels.

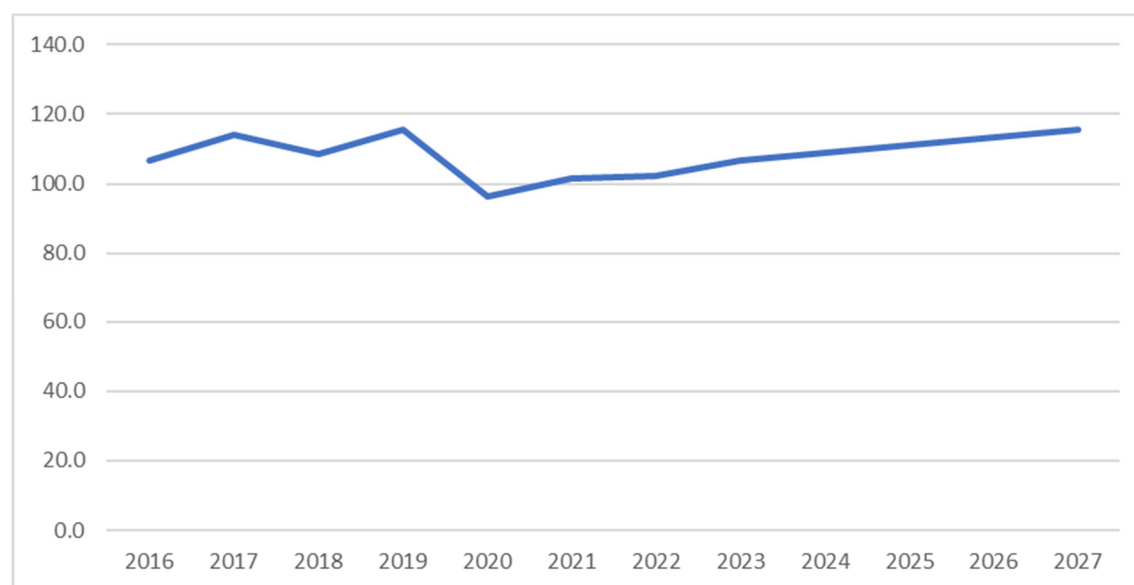
As part of our commitment to transparency, the government is committed to updating and reporting on these estimates once program details are finalized to ensure we are making progress to the 2030 targets.

## Planned Emission Reductions in 2030 by Sector



The chart above shows how the plan is tailored to address Ontario's greenhouse gas emissions. The inner pie shows the breakdown of Ontario's 2016 greenhouse gas emissions by sector. The outer ring colours show the policies from the environment plan that are targeted at reducing emissions in each sector.

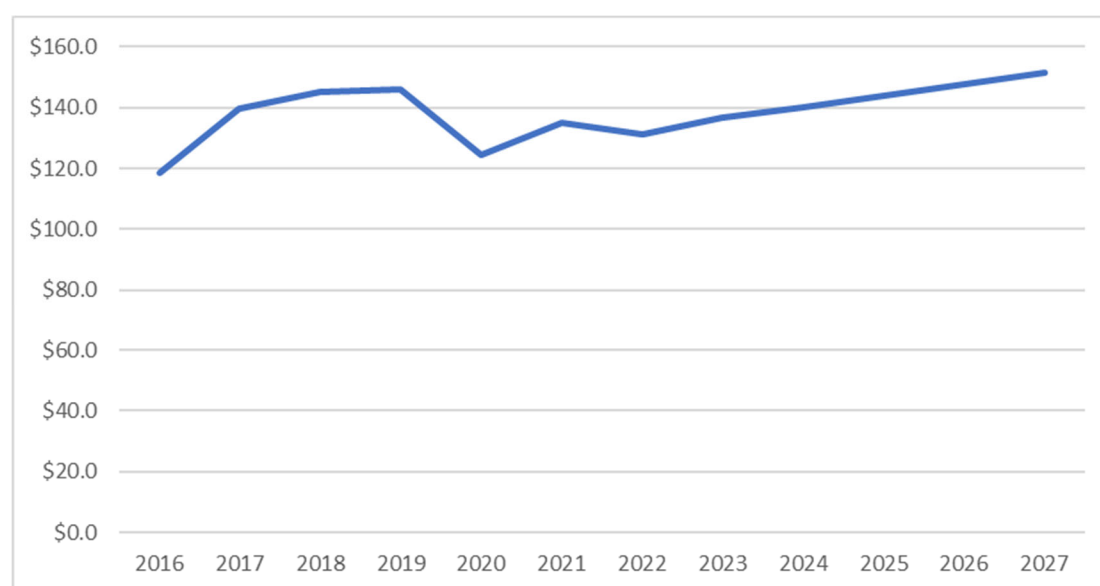
Figure 1: Enbridge Historic and Forecast Annual Gas Savings (Million m3)<sup>10</sup>



## B. Spending Trends

Enbridge has proposed to spend \$142.3 million on its DSM programs in 2023, increasing to \$170.5 million in 2027. As Figure 2 shows, in inflation-adjusted terms, the 2023 spending level is actually lower than the Company's actual DSM spend in 2018 and 2019. The Company's planned spend does not reach the 2019 levels until 2026. The 2027 value is about 4% higher than 2019.

Figure 2: Enbridge Historic and Planned DSM Spending (Millions of 2021 \$)<sup>11</sup>



<sup>10</sup> Response to 1.CCC.3 for all but 2021 and 2022 values. 2021 and 2022 savings values from response to 2.ED.8; 2021 and 2022 spending from response to 6.Staff.13.

<sup>11</sup> Response to 1.CCC.3 for all but 2022 values. 2022 values from response to 6.Staff.13a. Inflationary adjustments based on Bank of Canada inflation calculator (<https://www.bankofcanada.ca/rates/related/inflation-calculator/>).

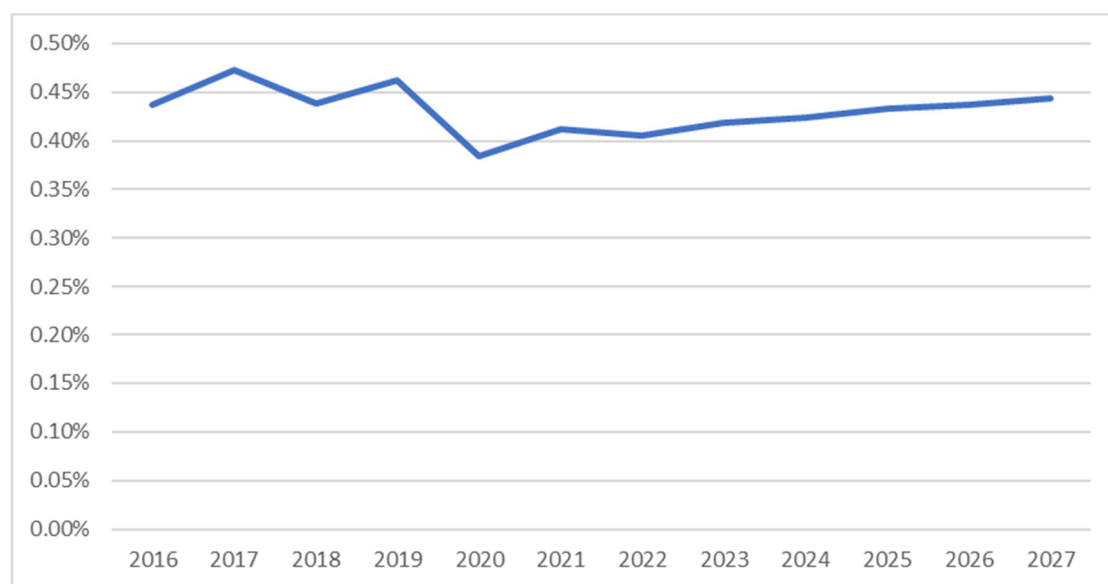


Not only is the overall budget lower than historic spending levels in the first several years of the plan, the level of investment in dedicated low-income programs is also declining. In 2019 and 2020, Enbridge spent 19.5% of its total expenditures on low-income programs. However, for 2023-2027, Enbridge plans to spend 15% to 16% of its total budget on low-income programs. The level of investment in low income programs is discussed further in Section III of this report.

## 5. Enbridge Savings Relative to Leading Gas Utilities

A common metric for benchmarking savings across multiple utilities is to divide the level of savings achieved or projected by that utility's total eligible sales.<sup>12</sup> Eligible sales are used to normalize the data across utilities of various sizes and regions. As shown in Figure 3, Enbridge's DSM Plan savings are equal to approximately 0.42% of forecast sales in 2023, increasing to 0.44% in 2027. In every year of the plan term savings are lower than the 2017 to 2019 average of 0.46%.

Figure 3: Enbridge Historic and Planned Savings as a Percentage of Eligible Sales<sup>13</sup>



Enbridge's savings rates, both historically and as planned for 2023 to 2027, are substantially lower than those of leading gas DSM utilities. Table 1 shows the actual 2019 net gas savings for the six large gas utilities in Massachusetts, Rhode Island, Michigan and Minnesota. In all six cases, annual savings were greater than 1.0% of eligible sales; in a couple of cases they were as high as 1.3%. In other words, leading gas DSM utilities are achieving annual savings on the order of two and a half to three times as great as Enbridge is planning for 2023 to 2027. The difference between Enbridge and leading gas utilities is a little smaller when measured in lifetime savings than when measured in first year savings because

<sup>12</sup> Eligible sales include usage from customers that are eligible to participate in the DSM programs.

<sup>13</sup> Historic and forecast sales from Attachment 1 to 5.GEC.3, excluding sales to customers in Enbridge rate classes 125, 200 and 300, as well as Union rate classes 25, M9, M10 and T3 (all of which are assumed to not be eligible for DSM programs).



by leading gas DSM utilities in other jurisdictions are also achievable in Ontario. That is despite the fact that market potential studies are inherently conservative. That is both our personal experience – both generally and with respect to the 2019 Ontario study – as well as perspective of other industry experts. For example, in a meta-analysis of both electric and gas efficiency potential studies, the American Council for an Energy Efficient Economy (ACEEE) concluded that such studies typically use a “generally conservative approach” which means that “...there is likely a great deal of additional cost-effective savings available beyond what is identified.”<sup>21</sup>

## 7. Enbridge Planned Savings Relative to Ontario Environment Plan Goals

As previously noted in Section II of this report, the OEB’s December 1, 2020 guidance to Enbridge in the development of its DSM plan stated that the plan should be informed by, among other things, “...the government’s policies and commitments in the Environment Plan as they continue to evolve...”<sup>22</sup> The Environment Plan state articulated a goal of reducing Ontario’s GHG emissions by 18 million tons of CO<sub>2</sub>e between by 2030, with 18% of that reduction coming from “natural gas conservation.”<sup>23</sup> As Enbridge itself has noted in quoting the 2019 Energy Conservation Progress Report produced by the then Environment Commissioner, the 3.2 million tons of emissions reductions ‘are incremental to what would be achieved by existing gas conservation programs continuing at their current level of spending.’<sup>24</sup> The Environment Commissioner’s report also stated:

“MECP advises that the estimate of a 3.2 Mt CO<sub>2</sub>e emissions reduction from natural gas conservation programs by 2030 is the difference between the ‘unconstrained’ and ‘constrained’ lines in the OEB’s Achievable Potential Study.”<sup>25</sup>

The potential study referenced in this statement is the 2015 study rather than the more recent 2019 study. The 2015 study doesn’t provide annual savings values for the 2023 to 2027 time period covered by Enbridge’s plan. However, it does provide values for 2020, 2025 and 2030. Extrapolating from those five year increments, we estimate that the 2015 constrained potential was approximately 628 million m<sup>3</sup> of annual savings between 2023 and 2027 and the unconstrained potential was approximately 1527 million m<sup>3</sup> of annual savings.<sup>26</sup>

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<sup>21</sup> For example, in a meta-analysis of both electric and gas efficiency potential studies, the American Council for an Energy Efficient Economy (ACEEE) concluded that such studies typically use a “generally conservative approach” which means that “...there is likely a great deal of additional cost-effective savings available beyond what is identified.”

<sup>22</sup> OEB Letter, Dec. 1, 2020.

<sup>23</sup> Ontario Ministry of Environment, Conservation and Parks, *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan* (<https://prod-environmental-registry.s3.amazonaws.com/2018-11/EnvironmentPlan.pdf>).

<sup>24</sup> Response to 2.ED.9(d and e).

<sup>25</sup> Environmental Commissioner of Ontario, *A Healthy, Happy Prosperous Ontario: Why we need more energy conservation*, 2019 Energy Conservation Progress Report, March 2019, p. 65 ([https://www.auditor.on.ca/en/content/reporttopics/envreports/env19/2019\\_EnergyConservationProgressReport.pdf](https://www.auditor.on.ca/en/content/reporttopics/envreports/env19/2019_EnergyConservationProgressReport.pdf))

<sup>26</sup> The difference between 2020 and 2025 Constrained potential is 494 million m<sup>3</sup>, or 99 million m<sup>3</sup> per year. The difference between 2030 and 2025 Constrained is 829 million m<sup>3</sup>, or 166 million m<sup>3</sup> per year. Three years at 99 million m<sup>3</sup> per year plus two years at 166 million m<sup>3</sup> per year is equal to 628 million m<sup>3</sup> over five years. Similar calculations were performed to estimate that unconstrained level of savings over the same five year period. Data

By comparison, Enbridge is forecasting that it will achieve 555 million m3 from 2023 to 2027. In other words, Enbridge's plan would not even achieve the level of annual savings assumed to be the baseline in the Environment Plan. Thus, not only would the Company's plan not be part of the solution to achieving the 3.2 million tons of incremental CO2e emission reductions from natural gas conservation, it would represent a step backwards – essentially requiring greater than 3.2 million tons of emission reductions from all other gas conservation initiatives. It is hard to see how that could be interpreted as consistent with the expectations of the Environment Plan.

## 8. Potential Rate Impact Concerns

For Enbridge to increase savings to levels much closer to those of gas industry leaders and/or the requirements of the provincial Environment Plan – while maintaining a portfolio of programs serving all customer groups – would require additional budgetary resources. Enbridge, some stakeholder groups and the OEB have – currently and/or in the past – expressed concern about the potential for undue rate impacts if annual DSM spending were to become too great. That raises at least three questions:

- What are the underlying concerns with respect to rate impacts?
- What is an undue rate impact?
- Are there other ways to mitigate concerns about rate impacts?

### A. Reasons for Concern about Rate Impacts

Efficiency program participants typically see their energy bills go down substantially. That is because their energy savings are substantially larger than any net increase in rates caused by efficiency programs. Thus, concerns about rate impacts are really concerns about impacts on those customers who do not participate in efficiency programs. In other words, concerns about rate impacts are typically concerns about equity between participants and non-participants.

It is important to recognize that this issue is not unique to efficiency programs. Consider, for example, cases in which a gas utility needs to make a capital investment to upgrade the capacity of its transmission and/or distribution (T&D) system in response to growing peak demand on part of its service territory. The growth in peak demand is never universally attributable to all customers. In fact, it is almost always driven by a small subset of new customers added to the system and/or existing customers who have increased their consumption. However, all customers – even customers whose peak demands have gone down and even customers not served by the T&D system component being upgraded – typically pay for the upgrades. When regulators approve such capital investments and any rate increases that result, they do so on the grounds that the total system benefits of increased reliability are worth the inequities between “participants” (customers whose peak demands are driving the need for the capital investment) and “non-participants” (customers not contributing to the need). Regulators may also be considering the potential for future upgrades in different locations that be driven by a different set of customers.

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from Exhibit ES 3 in ICF, *Natural Gas Conservation Potential Study*, submitted to the Ontario Energy Board, updated July 7, 2016 ([https://www.oeb.ca/sites/default/files/uploads/ICF\\_Report\\_Gas\\_Conservation\\_Potential\\_Study.pdf](https://www.oeb.ca/sites/default/files/uploads/ICF_Report_Gas_Conservation_Potential_Study.pdf)).

a) & c)

		GHG <sup>7</sup> Reductions: Environment Plan vs. DSM Plans (t CO2e – Persisting Annual)										
		2020 <sup>3</sup>	2021 <sup>4</sup>	2022 <sup>5</sup>	2023	2024	2025	2026	2027 <sup>6</sup>	2028	2029	2030
GHG Savings from Natural Gas Conservation Consistent with Environment Plan (Incremental) <sup>1</sup>	Annual Increase	-	320,000	320,000	320,000	320,000	320,000	320,000	320,000	320,000	320,000	320,000
	Persisting Since 2020	-	320,000	640,000	960,000	1,280,000	1,600,000	1,920,000	2,240,000	2,560,000	2,880,000	3,200,000
GHG Savings from Natural Gas Conservation Assuming 2020 Status Quo Gas Savings Continue to 2030 <sup>2</sup>	Annual Increase	Cannot be provided										
	Persisting Since 2020											
GHG Savings from Natural Gas Conservation DSM Plans	Annual Increase	180,351	194,104	178,277	199,914	204,049	208,359	212,049	216,290	-	-	-
	Persisting Since 2020	180,351	374,455	552,732	752,646	956,695	1,165,055	1,377,104	1,593,393	-	-	-
GHG Savings from Natural Gas Conservation Incremental to 2020 Status Quo per DSM Plans	Annual Increase	-	13,753	2,075	19,563	23,698	28,008	31,697	35,938	-	-	-
	Persisting Since 2020	-	13,753	11,678	31,241	54,939	82,947	114,644	150,583	-	-	-

		table a) converted to m3										
		2020 <sup>3</sup>	2021 <sup>4</sup>	2022 <sup>5</sup>	2023	2024	2025	2026	2027 <sup>6</sup>	2028	2029	2030
GHG Savings from Natural Gas Conservation Consistent with Environment Plan (Incremental) <sup>1</sup>	Annual Increase	-	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737	170,757,737
	Persisting Since 2020	-	170,757,737	341,515,475	512,273,212	683,030,950	853,788,687	1,024,546,425	1,195,304,162	1,366,061,900	1,536,819,637	1,707,577,375
GHG Savings from Natural Gas Conservation Assuming 2020 Status Quo Gas Savings Continue to 2030 <sup>2</sup>	Annual Increase	Cannot be provided										
	Persisting Since 2020											
GHG Savings from Natural Gas Conservation DSM Plans	Annual Increase	96,238,682	103,577,367	95,131,628	106,677,914	108,884,161	111,184,344	113,153,031	115,416,091	-	-	-
	Persisting Since 2020	96,238,682	199,816,049	294,947,677	401,625,591	510,509,752	621,694,096	734,847,127	850,263,218	-	-	-
GHG Savings from Natural Gas Conservation Incremental to 2020 Status Quo per DSM Plans	Annual Increase	-	7,338,685	1,107,054	10,439,232	12,645,479	14,945,662	16,914,349	19,177,409	-	-	-
	Persisting Since 2020	-	7,338,685	6,231,631	16,670,864	29,316,343	44,262,005	61,176,354	80,353,763	-	-	-

<sup>1</sup> Assumes 3.2 MT CO2e referenced in the Environment Plan are realized equally from 2021-2030

<sup>2</sup> Enbridge Gas cannot estimate GHG Savings from Natural Gas Conservation Assuming 2020 Status Quo Gas Savings Continue to 2030 as explained in the interrogatory response to Exhibit I.2.EGI.ED.9, Enbridge Gas does not have the information to determine what percent of the 3.2 MT CO2e is forecast to be attributed to utility delivered natural gas DSM programs

<sup>3</sup> 2020 DSM Plan values are draft audit net annual m3

<sup>4</sup> 2021 DSM Plan values represent a forecasted net CCM value divided by the 2020 average measure life to get to net annual m3

<sup>5</sup> 2022 DSM Plan values represent achievement of 100% of the 2022 TAM determined targets based on 2021 forecast results divided by 2020 average measure life to get to 2022 net annual m3

<sup>6</sup> 2027 is the final year of the proposed 2022-2027 DSM plan application and Enbridge Gas will not speculate on a forecast beyond 2027

<sup>7</sup> Conversion factor for t CO2e = (1.874/1000) \* m3

In working towards the primary objective, Enbridge Gas's future ratepayer-funded DSM plan should also consider the following secondary objectives:

- Help lower overall average annual natural gas usage
- Play a role in meeting Ontario's greenhouse gas reductions goals
- Create opportunities to defer and/or avoid future natural gas infrastructure projects<sup>1</sup>

These secondary objectives balance input received from stakeholders and refine the objectives included in the former 2015-2020 DSM framework. The OEB is of the view that these secondary objectives are important considerations that a well-planned and effectively implemented DSM plan can help achieve.

Over the course of the 2015-2020 term, annual OEB-approved natural gas conservation budgets have doubled from the previous levels approved for the 2012-2014 term, up to approximately \$140 million per year by the end of the current term. With COVID-19 creating many financial hardships, energy conservation has a role in helping to reduce energy costs and assist customers in managing their energy bills. The OEB anticipates modest budget increases to be proposed by Enbridge Gas in the near-term in order to increase natural gas savings, and expects Enbridge Gas to seek to improve the cost-effectiveness of programs. However, the appropriate level of ratepayer funding expended for DSM programs must weigh the cost-effective natural gas savings to be achieved against both short-term and long-term customer bill impacts.

The OEB expects that all requests for ratepayer-funding to support DSM programs be accompanied by detailed evidence that shows how the programs will benefit Ontario's natural gas customers, help reduce overall natural gas usage and costs, and contribute towards meeting the Government's goals to reduce greenhouse gas emissions.

## DSM Programs

Based on the OEB's evaluated results of the 2015 to 2018 DSM programs, while still cost-effective, the level of natural gas savings achieved through DSM programs for each dollar spent has been decreasing. This may be related to Enbridge Gas striving to

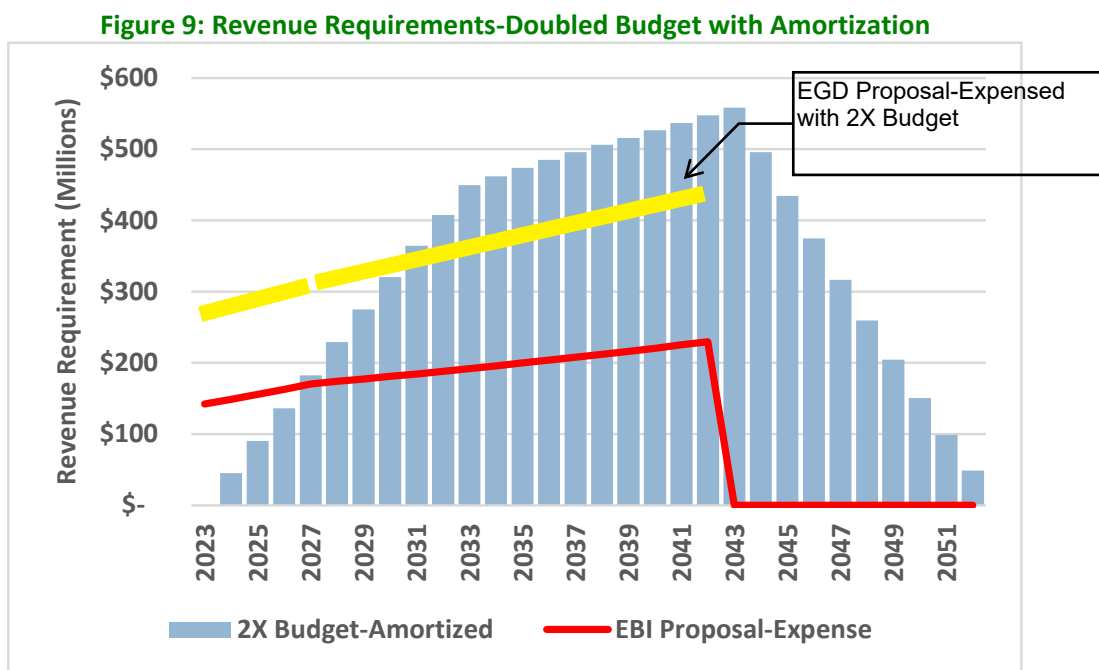
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<sup>1</sup> DSM can avoid or defer infrastructure passively (by reducing overall natural gas use and infrastructure needs) or actively (by targeting specific infrastructure projects). The OEB has an ongoing hearing that is considering Enbridge Gas's proposed Integrated Resource Planning framework (EB-2020-0091). As part of that proceeding, the OEB will decide on the relationship between the IRP framework and future utility DSM plans and the extent to which Enbridge Gas will be expected to meet this secondary objective as part of its future DSM plan.

disadvantaged populations to ensure that new jobs and businesses also benefit underserved communities. The appropriate level of workforce development funding will depend on the magnitude of the budget increase. As one example, Nicor Gas in Illinois funds workforce efforts at around 3% of their total portfolio budgets.<sup>24</sup>

Large budget increases will also eat into the rate savings generated by amortization, so the OEB will need to match increase to the specific amortization structure to stay within the historic rate guidance. For example, Figure 9 shows a doubling of budgets from Enbridge's proposal, with amortization revenues calculated using a 10-year term and Enbridge's WACC. The red line in Figure 9 shows revenues under traditional expense treatment assuming Enbridge's proposed trajectory of 5% annual budget increases.

Consistent with my discussion in Section 2.1.1, in the early years, revenues decline substantially despite the large budget increase. However, by 2027, amortized revenues exceed the current budget trajectory, and by 2042 revenues are 2.4 times the OEB's historic rate guidance. Doubling budgets would also double the magnitude of Enbridge's unamortized regulatory asset, which, with a 10-year measure life, would reach \$2.4 billion by 2042.



If the OEB wishes to continue meeting its historic guidance on rate impacts, budget increases would need to be far lower than this 2X adjustment. Figure 10 shows more modest increases of 20%, with amortization calculated at Enbridge's WACC and various amortization terms. These scenarios track closer to the OEB's historic rate guidance, with higher savings in the short term and lower increases in

<sup>24</sup> Nicor Gas Energy Efficiency Plan, January 2022-December 2025. Illinois Commerce Commission Docket 21-0154, March 1, 2021.

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To respond to Table 4 – STAFF.13 and provide when it would need OEB guidance in order to implement increased savings direction of +10 percent.

Response:

In the above referenced Table 4 detailed in the interrogatory response to Exhibit I.6.EGI.STAFF.13, Enbridge Gas provided a sensitivity analysis which illustrated an estimate of the incremental gas savings results that could be achieved in the scenario of a further 20% increase in budget levels in year one above what has been proposed in Enbridge Gas's DSM plan application for its core resource acquisition type programs, i.e. Residential, Low Income, Commercial and Industrial.

The incremental dollar increase illustrated in the scenario analysis amounts to an additional \$21,376,676 above the proposed portfolio budget of \$142,260,000 outlined for year one of the Company's multi-year DSM plan. This addition would translate to a total budget of approximately \$163.6 million in 2023, an approximately 24% increase over the OEB 2022 approved budget of \$132 million. This scenario projected an additional 9.5% net annual gas savings across the four scorecards, or approx. 9.98 million m<sup>3</sup> beyond the 105.6 million m<sup>3</sup> projected in the Company's original DSM plan proposal for 2023.

Accompanying the table, Enbridge Gas provided an overview of where budget investments would be directed for each sector in order to increase gas savings results. Of note, the scenario outlined did not contemplate any increase to the portfolio administration budget proposed by the Company for 2023.

Notwithstanding the Company's firm belief that a 24% year over year budget increase for 2023 does not reflect the OEB's direction for modest budget increases, in consideration of responding to this undertaking the Company believes it would be challenging to employ all the additional \$21 million in a fully effective manner within the 2023 calendar year. Assuming that the OEB approved the program complement put forward in Enbridge Gas's DSM plan including approval of the overall approach of the Company's DSM application (comprising the DSM Framework, budget distributions, program design details, scorecards, cost recovery and DSMI approach as proposed) and was able to provide a Decision on the DSM application by the end of August as

originally requested by the Company, Enbridge Gas believes the most aggressive ramp up would be to deploy 50% of the Table 4 scenario or approx. \$10.7 million additional program dollars in each of the 2023 and 2024 program years with the goal of driving on average an additional 4.75% forecast incremental net annual gas savings in each of those years. Additionally, as provided in the proposed DSM Framework, the Company would have access to an additional 15% overspend annually to pursue results in excess of 100% forecast achievement in programs which may prove to be very successful.

### III. National Grid's Plan for a Net Zero Gas Network in Massachusetts

Our plan keeps the Commonwealth on track for a 50% reduction of economy-wide emissions by 2030 (relative to 1990 levels) and net zero emissions from the sale of natural gas to our customers by 2050. As we work to enable net zero, we are committed to keeping affordability and equity, safety, and reliability at the forefront of everything we do. These priorities inform the pillars of the net zero plan that we outline below. National Grid's plan to achieve a net zero energy future for all our customers is also **supported by the findings of the Consultant's Report** (Part I), particularly the finding that a **"coordinated gas and electric decarbonization strategy, utilizing a diverse set of technologies and strategies, is likely to be better able to manage the costs and feasibility risks of decarbonization than scenarios that rely more heavily on single technologies or strategies."**<sup>13</sup>

#### *Key Components of our Plan to Achieve the Commonwealth's Net Zero Targets*

The key components of National Grid's Net Zero Plan are most similar to the Consultants' Report (Part I) Hybrid Electrification. More specifically, our plan is similar to Hybrid Electrification in the following ways:

- **~60% gas demand reduction.** National Grid's plan anticipates overall gas demand reduction will be largely similar to the Hybrid Electrification scenario by 2050. Gas demand in National Grid's plan is predicted to be slightly higher than the state-wide Hybrid Electrification assumptions due to the "hard-to-electrify" characteristics of National Grid's service territory described in Section II.
- **Gas customer count similar to present day.** Though National Grid's plan shows significant gas demand reduction, gas customer count is expected to remain steady compared to today, which is consistent with the Hybrid Electrification scenario.
- **100% renewable gas for Residential and Commercial customers.** As seen in the Hybrid Electrification scenario, National Grid's plan serves residential and commercial customers with 100% renewable gas – a mix of RNG and hydrogen – by 2050.
- **Significant customer adoption of hybrid heating systems.** National Grid's plan assumes significant adoption of hybrid heating systems by 2050. Electric heat pump adoption in National Grid's plan is predicted to be slightly lower than Hybrid Electrification due to the "hard-to-electrify" characteristics of National Grid's service territory described in Section II.

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<sup>13</sup> Consultants' Report (Part I) at p. 15



Although National Grid's Net Zero Plan is largely modeled on the Hybrid Electrification scenario, the plan differs from Hybrid Electrification as follows:

- **Targeted electrification and networked geothermal.** Unlike Hybrid Electrification, National Grid's plan embraces our role as a leader in evaluating opportunities for non-pipe alternatives, including consideration of targeted electrification, and networked geothermal systems. Affordability and equity, safety, and reliability will remain priorities for National Grid within these assessments.
- **100% renewable gas for Industrial customers.** Unlike Hybrid Electrification, which leaves Industrial customers on fossil natural gas, National Grid's plan takes emissions reductions a step further by serving all customers with 100% renewable gas, including Industrial customers. Serving Industrial customers with 100% renewable gas was a feature demonstrated in the Efficient Gas Equipment scenario.
- **Deep energy efficiency measures.** Unlike Hybrid Electrification, which assumes the least aggressive amount of energy efficiency measures of all modeled scenarios, National Grid's plan envisions building envelope and appliance efficiency measures that would lead to higher overall energy efficiency reductions. These deep energy efficiency measures would be focused on non-hybrid heating customers where these energy efficiency measures are more cost effective.<sup>14</sup>

### ***Emissions Reductions Impact of National Grid's Plan***

As discussed above, the key components of our plan are most similar to the Consultants' Report (Part I) Hybrid Electrification scenario, with some features that borrow from the Efficient Gas Equipment, Targeted Electrification, and Networked Geothermal scenarios. Figure 2 demonstrates that, although the share of emissions by sector varies by scenario (2050 sector breakout highlighted in the box to the right), all scenarios modeled in the Consultants' Report (Part I) achieve a 50% reduction in direct economy-wide emissions relative to 1990 levels by 2030, 75% by 2040, and 90% by 2050 (shown at the top of the chart). Given that the key components of our plan are consistent with the components modeled in the Consultants' Report (Part I) scenarios, we expect our plan will achieve the emissions reductions required to meet the Commonwealth's climate targets.

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<sup>14</sup> Consultants' Report (Part I) at p. 51.

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ED.1(a) – to reproduce the chart such that the potential study values and the DSM plan values are as comparable as possible, and particularly with respect to the caveat in the final bullet relating to net to gross values.

Response:

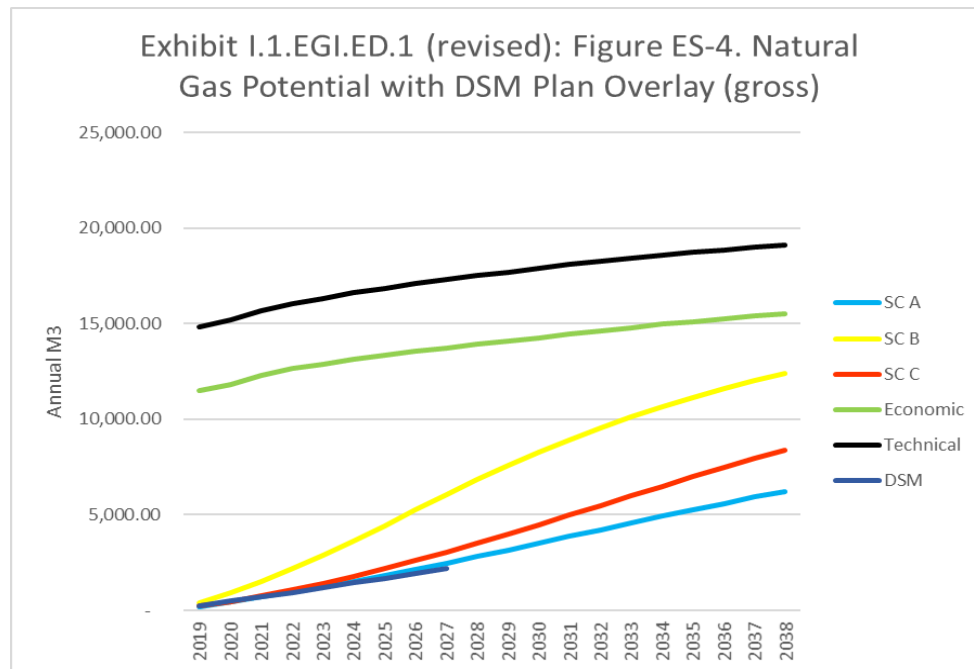
In Exhibit E, Tab 4, Schedule 7 and the Posterity Group (Posterity) report included as Attachment 1 of its evidence, Enbridge Gas clearly outlines the efforts undertaken in collaboration with Posterity to better understand the 2019 APS, and in following the OEB's direction, to consider the 2019 APS as one of many inputs that could inform the development of Enbridge Gas's plan. The inability to arrive at an outcome where the Mirror Model could be used to support planning efforts was also reiterated in Exhibit I.9.EGI.STAFF.24.

To understand the challenge presented by this undertaking request, please consider the work that was completed by Enbridge Gas and Posterity in efforts to be responsive to the OEB's direction.

- Through Posterity's efforts, a model was created to mimic the 2019 APS as closely as possible
- As outlined in the report, Exhibit E, Tab 4, Schedule 7, Attachment 1, a large number of issues were identified and documented through the joint analysis of Posterity and Enbridge Gas
- As a result of this analysis modifications were made to attempt to address some of the deficiencies identified.
- Through an iterative process, a Mirror Model was created which reflected the impacts of the recommended modifications that had been made to the original model.
- **Despite repeated efforts, the outputs from the Mirror Model remained unusable.** It was determined that further time and effort spent on the Mirror model would not yield the desired outcomes, however through their experience working together Enbridge Gas and Posterity did agree that an APS could be informative to program design, budget and target setting efforts if it was developed with those specific use cases in mind.

Understanding the level of complexity, time and effort that it took Enbridge Gas and Posterity to arrive at the Mirror model, it should be understandable that Enbridge Gas cannot develop a chart that aligns the APS to its plan.

However, Enbridge Gas has reproduced the table from Exhibit I.1.EGI.ED.1 part a applying a 0.44 NTG value at the portfolio level which can be derived through looking at Total Gross Annual and Total Net Annual m3 in Attachment 1 of Exhibit I.5.EGI.GEC.7.



Caveats:

- 2019 values actual post audit net annual m3
- 2020 values actual pre audit net annual m3
- 2021 values represent a forecasted CCM value provided to the OEB in a July 2021 updated, divided by the 2020 average measure life to get to net annual m3
- 2022 values represent application of the TAM at 100% achievement of forecast 2021 results divided by 2020 average measure life to get to net annual m3
- Enbridge Gas will not show beyond 2027 because this is beyond the proposed DSM Plan term.
- Enbridge Gas notes that the APS uses a fixed assumption for net to gross values that is substantially different from the DSM Plan values utilized which would have a material effect on the comparison of the DSM Plan values to any APS scenario

Enbridge Gas felt it would be useful to, in addition to providing grossed up savings values outlined in the chart above, gross up the budgets required to achieve these savings as well, to provide additional context through which to consider these APS Scenarios.

Net Budgets/Annual Savings	A		C		B	
	M3 (millions)	\$	M3 (millions)	\$	M3 (millions)	\$
2023	121	\$ 79,233,428	146	\$ 175,419,343	311	\$ 548,334,885
2024	126	\$ 72,920,614	161	\$ 198,249,156	336	\$ 611,393,864
2025	132	\$ 75,222,022	172	\$ 215,782,560	348	\$ 657,088,699
2026	141	\$ 79,997,683	186	\$ 240,282,131	358	\$ 704,517,499
2027	145	\$ 82,615,655	194	\$ 255,285,168	350	\$ 723,763,439
2028	150	\$ 82,601,780	204	\$ 275,429,234	342	\$ 745,944,789
2029	152	\$ 77,002,464	212	\$ 293,324,601	327	\$ 753,711,536
2030	154	\$ 79,486,368	217	\$ 308,994,909	307	\$ 749,295,140

Gross Budgets/Annual Savings	A		C		B	
	M3 (millions)	\$	M3 (millions)	\$	M3 (millions)	\$
2023	275	\$ 198,435,972	332	\$ 417,040,324	707	\$ 1,264,575,648
2024	287	\$ 184,088,667	366	\$ 468,926,264	764	\$ 1,407,891,508
2025	300	\$ 189,319,141	390	\$ 508,774,909	790	\$ 1,511,743,408
2026	320	\$ 200,172,917	424	\$ 564,455,753	814	\$ 1,619,536,133
2027	330	\$ 206,122,852	441	\$ 598,553,563	796	\$ 1,663,276,907
2028	340	\$ 206,091,318	464	\$ 644,335,533	778	\$ 1,713,689,065
2029	345	\$ 193,365,599	481	\$ 685,006,820	744	\$ 1,731,340,764
2030	350	\$ 199,010,837	494	\$ 720,621,157	698	\$ 1,721,303,500

These numbers were derived from following the approach outlined in the recommended approach to determine gross budgets outlined in the 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study on page 116:

#### Equation 7-2. Calculating Gross Budget from Net Program Cost Values

$$A. \text{Annual Program Budget for Future DSM Portfolio} = \frac{\text{Net Program Administrator Cost from APS Study}}{\text{Estimated NTG Ratio}} + \text{Overhead}$$

$$B. \frac{\$80M}{75\%} + \$10M = \$117M$$

For the sake of these calculations, the NTG ratio used was the same as that used to update the chart above, 0.44, and the overhead cost was fixed using the 2023 Portfolio Subtotal budget of \$18,360,000 as outlined in Exhibit D, Tab 1, Schedule 1, Table 1 page 9.

included just a few key callouts for consideration below (based on an analysis of SCA potential from 2022 to 2028).

9. High Efficiency Fireplace with Pilotless Ignition was identified as the third most impactful measure to drive savings within the Residential sector, expecting to account for ~18% of overall savings, and the second most in the Low Income Single Family sector accounting for ~23% of overall savings. However, as a result of Amendment 15<sup>5</sup> updates, published on June 12, 2019, less than 3 months after the release of the 2019 APS, this measure was required by code and therefore Enbridge Gas does not have the ability to realize these savings through DSM programs.
10. Further, specifically as it relates to the Low Income Single Family segment, even if the Amendment 15 changes were disregarded, Enbridge Gas would not support the position that upgrading fireplaces would be a feasible measure. Firstly, from an availability perspective, through its understanding of the low income market, it wouldn't expect that many fireplaces to be available for upgrade. Secondly, since the Home Winterproofing offering is a low / no cost offering, and the 2019 APS considered the installed cost of an upgrade case fireplace to be \$3,900 against an estimated savings of ~186 m<sup>3</sup> annually, Enbridge Gas could not justify spending the ~\$20 per m<sup>3</sup> when there were much more cost-effective opportunities available.
11. The 2019 APS stipulates that achievable savings potential are net of free riders, and that to determine gross budgets / savings requirements the utilities should use existing free ridership rates<sup>6</sup>. In the commercial sector, Demand Control Ventilation ("DCV") represents the second largest potential savings opportunity however it has a

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<sup>5</sup> <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-regulations/forward-regulatory-plan-2019-2021/amendment-15-energy-efficiency-regulations/19384>

<sup>6</sup> 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study, Navigant (December 10, 2019), p. 116

Table 7-5. Administrative Costs Approaches by Scenario

Scenario	Electricity	Natural Gas
<b>Energy and Program Cost Targeted Scenarios (Scenarios A, B, and C)</b>	Variable Administrative Costs Only Approach: Costs set to scale with potential as 0.5 cents/lifetime kWh of savings	Variable Administrative Costs Only Approach: Costs set to scale with incentives as 40% of incentives <sup>64</sup>
<b>Demand Targeted Scenario (Scenario D)</b>	Variable Administrative Costs Only Approach: Costs set to scale with potential as ~\$35/kW-year of lifetime peak demand savings <sup>65</sup>	N/A

Source: Navigant analysis

## 7.2.4.2 Net Savings Study

Since the reference forecast consumption levels in this potential study are net of natural conservation, the potential results shown in this report do not include savings achieved by any free riders that may participate in a program, or costs to deliver the program to those free riders. As noted Chapter 4, free riders are consumers that participate in an energy efficiency programs to receive an incentive for installing efficient measures, even though they would have installed them without an incentive. Since most programs will have at least some free riders, the program administrator incurs additional incentive and administrative costs to deliver to these customers without achieving any additional energy efficiency potential beyond what would have happened naturally (i.e., without a program in place). The portion of participants in a program that are free riders can vary widely depending on program design, delivery, and other factors (e.g., incentive size, target customer type, enrollment requirements, applicant screening processes, etc.). Program design, delivery, and assessment of free ridership are beyond the scope of this potential study.

*The program costs in each achievable scenario presented below represent the cost of energy efficiency program portfolios to non-free rider participants.* The program costs do not include fixed portfolio overheads, which also vary depending on program design and delivery (e.g., number of local contractors required, marketing costs, whether a call centre is used, evaluation & measurement activities, etc.).

When proposing a budget for a future DSM or CDM portfolio or program based on the potential scenarios included in this potential study, a program delivery agent should consider incremental program costs to account for future program net-to-gross (NTG) ratios and fixed portfolio overhead costs with supporting rationale and evidence. For example:

### Equation 7-2. Calculating Gross Budget from Net Program Cost Values

$$A. \text{ Annual Program Budget for Future DSM Portfolio} \\ = \frac{\text{Net Program Administrator Cost from APS Study}}{\text{Estimated NTG Ratio}} + \text{Overhead}$$

$$B. \frac{\$80M}{75\%} + \$10M = \$117M$$

<sup>64</sup> These values are based on a review of 2016 DSM administrative costs and incentive levels.

<sup>65</sup> This value selected such that administrative costs for Scenario D as a proportion of total costs were approximately in line with Scenario A administrative costs as a proportion of total costs.

As explained in some detail in the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources,<sup>27</sup> regulators can and should consider efficiency programs in the same way. That is, rather than putting in place arbitrary limits on rate increases resulting from efficiency programs, they should be asking whether the system benefits of efficiency programs outweigh any inequities between participants and non-participants. That question should ideally be considered over a long-enough period of time – e.g., 10 years – to account for the fact that the opportunities for investment in efficiency can vary considerably from year to year for different customers.

Further, it is important to recognize that unlike T&D investments, utilities and regulators have some control over the magnitude of non-participants. In fact, one way to reduce concerns about equity between participants and non-participants is to increase DSM spending so that more customers become participants and fewer are non-participants over time.

#### B. Defining “Undue Rate Impact”

As just explained, interpretations of whether or not rate impacts from DSM programs are “undue” should be contextual. For example, all other things being equal, a 3% rate impact associated with DSM programs that provide \$500 million in economic net benefits should be (and likely would be) seen as more acceptable than a 3% rate impact associated with DSM programs that provide only \$50 million in economic net benefits. Customer participation rates, the level of assistance provided to the neediest of customers, the level of greenhouse gas emission reductions achieved relative to policy goals and other factors can also reasonably affect perceptions of the level of rate impacts that are acceptable.

The issue of rate impacts – and what level is reasonable given the benefits of DSM programs – is not a new one. Indeed, Enbridge and DSM stakeholders have debated for more than twenty years about what level of rate impact from DSM programs is “undue” for its Ontario service territory. Because the answer to the question is contextual, there is no mathematical formula that can be used to reach conclusions about the level of DSM spending that would cause rate impacts to be “undue”.

That said, one potential reference point is the OEB’s guidance in the 2015-2020 DSM framework. In that guidance, the Board stated that “...DSM costs (inclusive of both DSM budget amounts and shareholder incentive amounts) should be no greater than approximately \$2.00/month” per residential customer. In other words, the Board found – at least in 2014 – rate impacts from that level of DSM spending to be reasonable. The Board went on to state that level of rate impact would add up to about \$155 million per year for the combined Enbridge and Union Gas service territories. Adjusted for inflation, spending of \$2.00 per month in 2014 would be equivalent to \$2.38 in 2023 and \$2.57 in 2027. \$155 million per year in 2014 dollars would be equivalent to \$184 million in 2023 and \$200 million in 2027.

As Table 2 (row 5) shows, on an inflation adjusted basis, Enbridge’s proposed DSM spending could be increased by an annual average of \$22 million over the five-year plan and be within the OEB’s 2014 interpretation of the level of spending at which rate impacts would be reasonable.

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<sup>27</sup> See Appendix A in: Woolf, Tim et al., National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources, National Efficiency Screening Project, August 2020 ([https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs\\_08-24-2020.pdf](https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs_08-24-2020.pdf)).

Table 2: Difference between Enbridge Proposed DSM Spend and 2014 OEB Guidance on Acceptable Rate Impacts

	2023	2024	2025	2026	2027	5-Yr Total
1 Enbridge Plan Budget (millions \$)	\$142	\$149	\$156	\$163	\$171	\$780
2 Shareholder Incentive at 100% Target (millions \$)	\$11	\$11	\$11	\$11	\$11	\$55
3 Budget w/Shareholder Incentive (millions \$)	\$153	\$160	\$167	\$174	\$182	\$835
4 \$155M/year converted from 2014 \$	\$184	\$186	\$187	\$188	\$200	\$945
5 Increase w/OEB 2014 Guidance of \$2/month gross (millions \$)	<b>\$31</b>	<b>\$26</b>	<b>\$20</b>	<b>\$14</b>	<b>\$18</b>	<b>\$110</b>

It should also be noted that when the Board established its \$2/month guidance in 2014, it did not account for the portion of the benefits of efficiency programs that reduce costs for all customers. For example, in his testimony on Enbridge and Union Gas’ 2015-2020 DSM Plans, Mr. Neme estimated that the effect of two such benefits – reduced capital costs for transmission and/or distribution system upgrades, gas market price suppression effects – would offset more than 40% of the \$2/month in spending the OEB had supported. We have not recomputed those values in this proceeding. However, as Table 3 (row 8) shows, if they were still as large as 40%, that would allow for budgets of about \$100 million per year more than Enbridge has proposed in its plan. It should be noted that in its decision on budget levels for the Enbridge and Union 2015-2020 DSM plans, the OEB did not adjust its \$2/month guidance to reflect the “net impact” analysis that Mr. Neme recommended.<sup>28</sup> However, the Board suggested that the gas utilities should “consider a net rate impact approach further” and stated that such analysis “should be presented to the OEB as part of the gas utilities’ next multi-year DSM plans.”<sup>29</sup> Enbridge has not provided such additional analysis in its 2023-2027 plan filing.

Table 3: Increased DSM Spend Based on 2014 OEB Guidance Adjusted for Downward Rate Pressures of Some DSM Benefits

	2023	2024	2025	2026	2027	5-Yr Total
1 Enbridge Plan Budget (millions \$)	\$142	\$149	\$156	\$163	\$171	\$780
2 Shareholder Incentive at 100% Target (millions \$)	\$11	\$11	\$11	\$11	\$11	\$55
3 Budget w/Shareholder Incentive (millions \$)	\$153	\$160	\$167	\$174	\$182	\$835
4 \$155M/year converted from 2014 \$	\$184	\$186	\$187	\$188	\$200	\$945
5 Increase w/OEB 2014 Guidance of \$2/month gross (millions \$)	<b>\$31</b>	<b>\$26</b>	<b>\$20</b>	<b>\$14</b>	<b>\$18</b>	<b>\$110</b>
6 Downward Rate Pressure from Avoided T&D, Price Suppression (millions \$)	-\$74	-\$74	-\$75	-\$75	-\$80	-\$378
7 Spend w/OEB 2014 Guidance - \$2/mo net of down pressure (millions \$)	\$258	\$261	\$262	\$263	\$279	\$1,323
8 Increase w/OEB 2014 Guidance - \$2/mo net of down pressure (millions \$)	<b>\$105</b>	<b>\$101</b>	<b>\$95</b>	<b>\$89</b>	<b>\$97</b>	<b>\$488</b>

One final point should also be made with regards to the Board’s 2014 guidance on DSM spending: the combination of government and OEB emphasis on increasing savings (relative to historic levels) to lower energy bills, together with the more pressing nature of the climate crisis, suggest that rate impacts would have to be higher today to be considered “undue” than was the case in 2014.

### C. Other Potential Ways to Mitigate Rate Impact Concerns

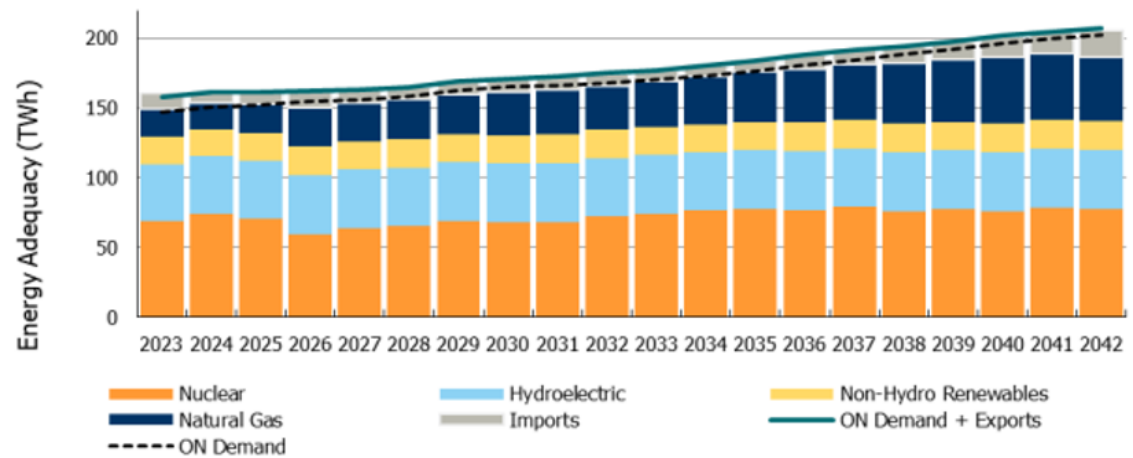
In addition to broadening participation in efficiency programs, rate impact concerns could also be addressed by amortizing DSM spending over the life of the expected savings (or some other period of time), instead of incurring the full effect of spending in just one year. The result is that the timing of costs is better aligned with the timing of the benefits, and that near term rate impacts are limited.

<sup>28</sup> OEB, Decision and Order, EB-2015-0029 / EB-2015-0049, p. 59.

<sup>29</sup> Ibid, p. 87.



**Figure 24 | Energy Production Outlook, with Continued Availability of Existing Resources**



Source: <https://www.ieso.ca/-/media/Files/IESO/Document-Library/planning-forecasts/apo/Dec2021/2021-Annual-Planning-Outlook.ashx>

**JT3.3: Page 1 of 5**

**On a best efforts basis, that EFG will seek to address Mr. Weaver's concerns by adjusting as necessary, or indicating where they have already done so.**

**Response:**

In his reply evidence, Mr. Weaver identified four factors, other than spending levels, that he suggested one would need to address in making comparisons between Enbridge savings levels and those of utilities in other jurisdictions:

1. **Net savings rather than gross savings.** Mr. Weaver suggested that EFG's inclusion of the Minnesota utility, Centerpoint, was problematic because Centerpoint's savings are estimated in gross terms (i.e., without adjustments for free ridership and spillover) whereas Enbridge's savings are estimated in net terms (i.e., adjusted for free rider and spillover effects).
2. **Residential behavior program savings.** Mr. Weaver noted that the leading utilities to which EFG compared Enbridge all achieve a significant amount of savings from residential behavior programs which the Ontario Energy Board previously instructed Enbridge not to run.
3. **Residential furnace rebate savings.** Mr. Weaver noted that Canada has a minimum furnace efficiency standard of 95% AFUE, which is considerably higher than the U.S. standard. Thus, he suggested that savings from rebates for residential furnaces biases a comparison of U.S. gas utility savings to Enbridge's savings.
4. **Claiming savings from new construction stretch codes.** Mr. Weaver noted that the Massachusetts utilities are able to claim savings from supporting new construction projects built to the state's stretch code and that it is unclear whether Enbridge would be allowed to do the same in Ontario.

In the following table we show how appropriate adjustments for these factors affects the comparison of leading gas utility savings claims relative to Enbridge's planned savings. The effect of the adjustments we have made is to reduce the annual savings of the comparison utilities by about one quarter. Without such adjustments, their average annual savings was nearly three times Enbridge's planned savings for 2023. With the adjustments, their average savings is a little more than double Enbridge's planned savings for 2023. As discussed further below, that is essentially the same ratio (i.e., a factor of two larger) that we reference in our report when comparing Enbridge lifetime savings to those of the leading gas DSM utilities.

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**Gas DSM Savings Comparisons, with Appropriate Adjustments to Address Ted Weaver's Concerns  
(all savings shown in "therms")**

Utility:	Consumers	DTE	N Grid	Eversource	N Grid	Centerpoint	Enbridge 2023 Plan
Jurisdiction:	Michigan	Michigan	Massachusetts	Massachusetts	Rhode Island	Minnesota	Ontario
Reported Total Annual Savings	27,423,890	18,405,870	18,871,000	5,570,000	4,514,660	17,090,461	38,441,700
Subtracted for Enbridge Comparison							
Residential Behavior	2,799,310	2,858,110	5,808,223	1,019,000	1,111,170	1,083,040	-
Residential Furnace Rebates	3,714,420	2,090,570	269,000	116,000	35,011	2,438,215	-
Residential Stretch Codes	-	-	540,000	207,000		-	-
Commercial Stretch Codes	-	-	60,093	1,960		-	-
Total	6,513,730	4,948,680	6,677,316	1,343,960	1,146,181	3,521,255	-
Adjusted Total Annual Savings	20,910,160	13,457,190	12,193,684	4,226,040	3,368,479	13,569,206	38,441,700
Adjusted Savings as % of Unadjusted	76%	73%	65%	76%	75%	79%	100%
Savings as % of Sales							
As reported	1.05%	1.08%	1.30%	1.33%	1.14%	1.14%	0.42%
As adjusted	0.80%	0.79%	0.84%	1.01%	0.85%	0.90%	0.42%

The values in the table above reflect the following adjustments made in response to the concerns expressed by Mr. Weaver:

1. **Net savings.** Mr. Weaver is correct that Centerpoint reports savings on a gross basis, without adjusting for free riders. However, we already adjusted for that in the savings values that we presented in our report. Specifically, we applied a national average net to gross (NTG) ratio that the American Council for an Energy Efficient Economy used when it conducted a similar (though more expansive) effort to compare the savings levels of different U.S. states. Mr. Weaver has suggested that the average (NTG) ratio may not be appropriate for comparing savings to Enbridge because Enbridge's NTG ratio is a much lower 50%. However, that argument is fundamentally flawed. There is no reason to normalize for different NTG ratios because those ratios are primarily a function of program design rather than something that is endemic to a given jurisdiction. Put another way, Enbridge could increase its NTG ratio by changing its program design. Ontario's Evaluation Consultant has actually made recommendations to this effect.<sup>2</sup> Thus, no additional adjustment is needed (or was made) to address Mr. Weaver's expressed concerns about Centerpoint's reporting of gross rather than net savings. However, we would observe that removing Centerpoint from the comparison would not materially affect the conclusion regarding how much more leading gas DSM utilities have achieved relative to what Enbridge is proposing.

<sup>2</sup> For example, see the discussion of recommendations regarding free ridership and net-to-gross ratios in Section 5.4 of DNV-GL, 2018 Natural gas Demand-Side Management Annual Verification, prepared for the Ontario Energy Board March 13, 2020 (<https://www.oeb.ca/consultations-and-projects/policy-initiatives-and-consultations/natural-gas-demand-side-management>).

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2. **Residential behavior program savings.** Mr. Weaver is correct that leading gas utilities often include savings from residential behavior programs. Such programs can provide substantial first year savings at modest cost per first year m3 of gas saved. However, those savings are very short-lived. As a result, to the extent that they are included in utility DSM program portfolios, they drive down the average life of the savings achieved. In our report, we made a point of the fact that Enbridge had a longer average measure life than the utilities to which we were comparing them, but that even when one considered lifetime savings – i.e., a metric that effectively adjusts for the inclusion of Residential behavior program savings in other utilities’ totals and their exclusion from Enbridge’s – the other utilities were still achieving roughly twice as much savings as Enbridge. That said, to allow for a comparison of annual savings (rather than lifetime savings), we have removed all Residential Behavior program savings from our comparison utilities’ totals.<sup>3</sup> Note that we have conservatively assumed that the budget savings from eliminating Residential Behavior programs would not be re-allocated to other programs from which they could generate additional savings.
3. **Residential furnace rebate savings.** Mr. Weaver is correct that the utilities to which we have compared Enbridge have the advantage of being able to claim substantially more savings than Enbridge can from high efficiency furnaces because of the lower minimum product efficiency standards in the U.S. As a result, we have removed all savings from residential furnace rebates that were claimed by the comparison utilities. That said, this change does not have a huge effect on the bottom line as residential furnace rebates did not account for more than 14% of savings for any of the comparison utilities; for the Massachusetts and Rhode Island utilities, it was only 1-2%.<sup>4</sup> Note that this is substantially less than Mr. Weaver suggested in both an interrogatory response<sup>5</sup> and the Technical Conference. Mr. Weaver made the mistake of assuming that 100% of the savings reported by National Grid for its residential rebate program were from furnaces.<sup>6</sup> The reality is that less than 20% of National Grid’s residential rebate program savings in Massachusetts were from furnaces. The largest portion of savings from that program was from the same kinds of smart thermostats that Enbridge is promoting. Note that we have also conservatively assumed that the furnace rebate dollars expended by the

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<sup>3</sup> The sources for the amount of savings from residential behavior programs are the same as those provided in footnote 15 of our report for the total savings values from each utility.

<sup>4</sup> Savings from residential furnace rebates for Consumers and Centerpoint are the same as those provided in footnote 15 of our report for the total saving values from each utility. For DTE, the portion of the 2019 Residential HVAC Rebates program savings attributable to furnace rebates was provided in personal communications with DTE staff. For the two Massachusetts utilities, the portion of residential rebate program savings attributable to furnaces was from <https://www.masssavedata.com/Public/MeasuresDetails>. Note that similar measure level data are not available for National Grid in Rhode Island. However, National Grid runs essentially the same programs in with the same program designs in both states, so we have assumed that furnaces provide the same percentage of residential HVAC rebate program savings in Rhode Island as in Massachusetts. That assumption may even be conservative because a 2020 planning tool for National Grid in Rhode Island suggests that furnaces may represent an even smaller fraction of program savings than was the case in Massachusetts in 2019.

<sup>5</sup> Exh. I.3.EGI.GEC.20(d)

<sup>6</sup> Ibid. Note that during the Technical Conference he said it was “mostly furnaces”.

comparison utilities would not have been re-allocated to other programs from which they could have generated additional savings.

4. **New construction stretch codes.** Mr. Weaver is correct that Massachusetts utilities can claim savings from advancing code compliance, including savings from meeting the state's stretch code requirements in towns that have adopted the stretch code. In his interrogatory response, Mr. Weaver suggested it would be necessary to remove all residential and commercial new construction program savings from the Massachusetts utilities' totals. However, that is an over-adjustment. First, while most of the Massachusetts residential new construction savings are in towns that have adopted the stretch code, some are not. Second, the commercial stretch code is not much different than the standard state code and participants in the utilities' commercial new construction program are building to efficiency standards that are above the stretch code.<sup>7</sup> Thus, we have removed all residential new construction savings but only a small portion of commercial new construction savings that have been directly attributed by the Massachusetts utilities to "codes and standards compliance education".<sup>8</sup>

In the Technical Conference, Mr. Weaver also suggested that it would be appropriate to adjust for the fact that Enbridge's portfolio average net-to-gross ratio is lower than those of other utilities. However, for reasons described above in our discussion of Centerpoint's net savings, Mr. Weaver's conclusion on this issue is fundamentally flawed.

Mr. Weaver also suggested in the Technical Conference that another difference between Enbridge and other utilities that EFG did not address is that other utilities get savings from low flow showerheads and faucet aerators which Enbridge "does not include" in its programs.<sup>9</sup> However, that is incorrect. In fact, Enbridge specifically lists showerheads among the measures it will install in both of its low income programs.<sup>10</sup> Even if that wasn't the case, Mr. Weaver's concern would be a red herring for at least a couple of reasons. First, the portion of savings which leading utilities typically obtain from low flow showerheads and aerators is very small. For example, in 2019 such measures only accounted for 1% of the total Massachusetts portfolio savings from both National Grid and Eversource.<sup>11</sup> Second, Mr. Weaver was attempting to identify one measure or set of measures that Enbridge may have promoted in higher volumes in past years than other utilities without accounting for the certainty that other utilities will have done the same with other measures (and therefore would have less remaining savings potential from such other measures than Enbridge would have).

Finally, we can think of at least one important way in which Enbridge has a comparative advantage which Mr. Weaver did not address. Namely, Enbridge has been claiming much higher levels of savings for new C&I boilers than are claimed by utilities in other jurisdictions. That is because the Company attributes savings not only to improvements in the rated efficiency of boilers, but also to a variety of other factors including staging (e.g., single, 2-stage, modulating), pumping (continuous or not), flue damping, purge cycles and other factors whose savings are not fully captured in efficiency ratings. In

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<sup>7</sup> Information provided by the state's evaluator.

<sup>8</sup> <https://www.masssavedata.com/Public/MeasuresDetails>

<sup>9</sup> March 1, 2022 Technical Conference transcript, p. 192, line 11.

<sup>10</sup> Exh E, Tab 1, Schedule 3, pp. 12 and 17

<sup>11</sup> <https://www.masssavedata.com/Public/MeasuresDetails>

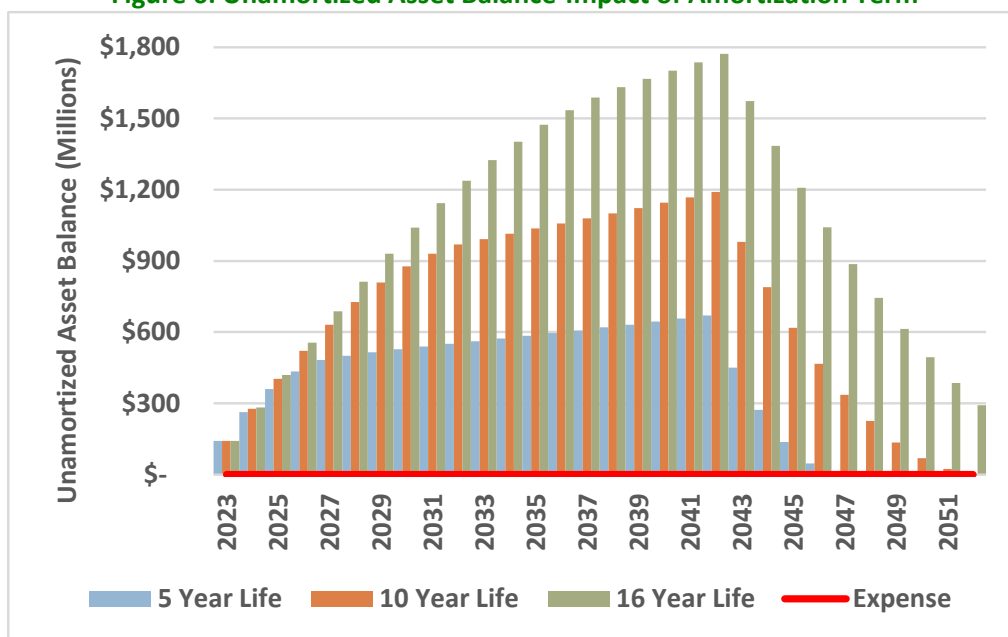
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our experience, utilities in other jurisdictions do not adjust their C&I boiler savings claims upward (i.e., beyond what their rated efficiencies suggest about savings) to account for the potential additional savings that improvements in these other factors can provide – even though the boilers they are rebating often come with those improved features. It would not surprise us if the approach to C&I boiler savings estimation had a bigger impact on comparison of Enbridge’s savings to those of leading gas utilities than both the furnace and stretch code impacts (together) have. Again, to be conservative, we have not attempted to adjust Enbridge’s savings down to account for this difference when making comparisons to leading gas utilities.

framework. Amortization revenues with 5-year terms surpass expense revenues (i.e., revenues consistent with the Enbridge policy framework) by 2028. Revenues under 10-year terms do not exceed expense revenues until 2032 and 16-year terms further delay the crossover until 2036.

Figure 6 shows that unamortized asset balances also build up to much higher levels with longer asset terms. This is also driven by the annual amortization dynamic mentioned above; since longer asset terms result in lower annual amortization charges, unamortized balances draw down more slowly. By 2042, with 16-year terms, the unamortized balance is 2.6X higher than with 5-year terms (\$1.8 billion vs. \$671 million) and with 10-year terms the unamortized balance is 1.8X higher than with 5-year terms (\$1.2 billion vs. \$671 million).

**Figure 6: Unamortized Asset Balance-Impact of Amortization Term**



As mentioned above, large regulatory asset balances create risks for Enbridge’s investors should future OEB Panels change their policies supporting DSM programs. These regulatory assets also pose risks should future OEB Panels change their policy supporting the natural gas utility industry in general. For example, the EFG report in this proceeding recommends that Ontario consider “whether future building codes should allow for any fossil fuel heating, water heating, cooking and other gas end uses<sup>11</sup>.” If regulatory policies do actually transition away from natural gas in the future, some investors and regulators worry that a mismanaged transition could have negative consequences on customers and investors. For example, some regulators fear that large scale electrification could result in spiraling gas rates, as the fixed costs of the gas system are spread over fewer remaining customers. This is especially worrisome if higher income customers drive early electrification, leaving low income or other disadvantaged groups to shoulder ongoing costs. Investors might also worry that a mismanaged transition would result in largescale asset write offs in attempts to lessen rate impacts. These investors

<sup>11</sup> EFG Report, page 38.

**Balance Sheet  
as of  
December 31**

	Enbridge Gas	EPCOR Natural Gas	Industry
	\$	\$	\$
<b>Current Assets</b>			
Cash	9,288,618	6,575	9,295,193
Accounts Receivable	1,120,316,056	3,378,548	1,123,694,604
Gas Inventories	657,144,935	-	657,144,935
Other Current Assets	134,333,382	1,992,696	136,326,078
<b>Total Current Assets</b>	<b>1,921,082,991</b>	<b>5,377,819</b>	<b>1,926,460,810</b>
<b>Non-Current Assets</b>			
Property, Plant & Equipment	15,865,986,334	67,328,622	15,933,314,956
Long-Term Investments	2	3,269,220	3,269,222
Deferred Charges	2,359,829,410	1,457,810	2,361,287,220
Other Non-Current Assets	5,089,903,858	(412,509)	5,089,491,349
<b>Total Non-Current Assets</b>	<b>23,315,719,604</b>	<b>71,643,143</b>	<b>23,387,362,747</b>
<b>Total Assets</b>	<b>25,236,802,595</b>	<b>77,020,962</b>	<b>25,313,823,557</b>
<b>Current Liabilities</b>			
Bank Overdraft, Loans and Notes Payable	1,120,846,735	-	1,120,846,735
Accounts Payable & Accrued Liabilities	1,299,535,214	18,835,259	1,318,370,473
Other Current Liabilities	81,097,188	14,464	81,111,652
Income Taxes Payable	47,389,762	-	47,389,762
Current Portion of Long-Term Debt	376,577,874	36,911	376,614,785
<b>Total Current Liabilities</b>	<b>2,925,446,773</b>	<b>18,886,634</b>	<b>2,944,333,407</b>
<b>Non-Current Liabilities</b>			
Long-Term Debt	8,653,141,653	37,653,200	8,690,794,853
Deferred Income Taxes	1,522,285,424	-	1,522,285,424
Other Non-Current Liabilities	2,118,298,468	-	2,118,298,468
<b>Total Non-Current Liabilities</b>	<b>12,293,725,545</b>	<b>37,653,200</b>	<b>12,331,378,745</b>
<b>Total Liabilities</b>	<b>15,219,172,318</b>	<b>56,539,834</b>	<b>15,275,712,152</b>
<b>Shareholders' Equity</b>			
Share Capital & Retained Earnings	10,017,630,277	20,481,128	10,038,111,405
<b>Liabilities &amp; Shareholders' Equity</b>	<b>25,236,802,595</b>	<b>77,020,962</b>	<b>25,313,823,557</b>



ENBRIDGE GAS INC.

Answer to Interrogatory from  
Green Energy Coalition (GEC)

Interrogatory

**Issue 8**

Question(s):

- a) Does the company agree that its proposed shareholder incentive structure is intended to incent performance relative to the plan targets and is not designed to incent the company to propose higher targets?
- b) Does the company agree that the proposed incentive structure creates an incentive to set lower more easily achievable targets?

Response:

- a) No. The proposed incentive structure is intended to align with the priorities, goals and objectives of the OEB.
- b) No. Please see response to a).

increased measure life and therefore provide a continued focus on long life energy efficiency opportunities. Notwithstanding that the Company has focused on net annual (first-year) savings metrics in the assessment of annual scorecards, Enbridge Gas continues to propose programs that drive long measure life projects.

In the course of drafting this Application, Enbridge Gas reviewed other jurisdictions to assess what target metrics were employed across the DSM landscape. Enbridge Gas's research found that many jurisdictions were incorporating a net benefit or total benefit approach or a hybrid approach and of those that included energy savings targets, most were based on annual (or first year) savings.

Enbridge Gas determined that net annual cubic meters is a simpler, straight-forward metric, easily understood by the customer and potential business partners. A focus on annual energy savings also provides the simplest approach in exploring potential coordinated or collaborative program delivery for example with municipalities or the IESO.

Upon review of the proposed program offerings and measure mix as outlined in evidence, it is clear the Company has presented plans that continue to focus on longer life measures such as weatherization and envelope improvements, industrial process improvements, and space and water heating system upgrades. Further, the introduction of the hybrid shareholder incentive opportunity which includes a focus on an annual Net Benefits Shared Savings mechanism, ensures the Company remains incentivized on the implementation of longer-life measures.

- b) The decision to allocate 1% of the DSMI to the Energy Performance Program is a consequence of its proportionally small allocation of the portfolio budget. The Energy Performance Program is a new program and is being rolled out on a small scale with a focus on schools initially where considerable work has been done on pilots and benchmarking allowing for a logical entry point for the program with a building set of relatively homogeneous archetypes.

ENBRIDGE GAS INC.

Undertaking Response to OEB Staff

Undertaking

Tr: 64

Enbridge to propose or provide a weighted average measure life for its portfolio for the pending term from 2023-2027; a threshold which the company should keep the portfolio above.

Response:

While Enbridge Gas will maintain appropriate flexibility, within the parameters outlined in the proposed DSM Framework and the Company's DSM plan proposal, to shift resources between programs and program offerings to effectively pursue results and maximize gas savings opportunities, Enbridge Gas commits to exercise this flexibility in a way that aims to maintain a minimum threshold portfolio weighted average measure life (WAML).

The forecast portfolio weighted average measure life (WAML) of Enbridge Gas's plan for the 2023 program year is 16.4 years<sup>1</sup> on a net basis.

In conjunction with the Company's DSM plan proposal which assesses results for most programs based on annual net gas savings metrics, Enbridge Gas proposes it will operate its portfolio with the goal of maintaining a minimum WAML threshold (minimum WAML threshold) of 13.12 years<sup>1</sup> (i.e. not more than 20% below the annual DSM plan forecast WAML) based on portfolio level annual net gas savings, with the following provisions:

- i. The portfolio WAML will be calculated as the sum of a program year's cumulative net gas savings divided by the sum of that program year's net annual gas savings.
- ii. The portfolio WAML calculation will exclude the Large Volume program results due to the self-direct design of the program which limits the ability of the utility to prioritize longer measure life projects with this customer group.
- iii. The WAML calculation and the minimum WAML threshold will be subject to adjustments to account for changes in measure life assumptions outside of the utilities control, i.e. updates to TRM measure lives and the Custom Measure Life table as may be revised as part of the annual TRM review process.

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<sup>1</sup> This value is based on the specific program and target proposals outlined by Enbridge Gas in its 2023-2027 DSM plan application, any changes proposed to this program and target composition will require a recalculation of the WAML and minimum WAML threshold upon which this guidance is proposed by the Company.

are manipulated such that the thresholds/inputs are raised to such a degree as to make any reasonable incentive unachievable, then it is no longer an incentive at all.

Attachment 2 to this interrogatory response provides the excel tool used to calculate the Annual Net Benefits Shared Savings, allowing for modelling for adjusted ranges/thresholds.

## Problem: No incentive to maximize net benefits

- Current model: utilities profit from meeting targets, but have:
  - No profit incentive to design optimal plans that **maximize net benefits**
  - No profit incentive to design the **most cost-effective** plans possible
  - Perverse incentives to propose **modest savings targets**
- Utilities are incentivized to *execute* DSM plans well, but not to *design and develop* optimal DSM plans

That said, the concept of a longer-term performance metric is a good one. However, such a metric should only be adopted if it actually drives the Company to do something different – in a positive way – than it would without the metric. One possible example would be a metric that compares average, weather-normalized residential energy consumption in 2027 to 2022. Another might be a metric that focused on lowering the energy intensity of business customers’ use of gas (per unit of GDP). Reasonable goals might be to achieve average residential consumption levels that are 5% lower than those currently forecast and/or improvements in the energy intensity of business customers to levels 5% better than currently forecast.<sup>55</sup> Those kinds of metrics would ensure that Enbridge focuses on the quality of the delivery of its programs. They would also reward spillover effects that may not be fully captured in current EM&V practices, providing an incentive for the Company to increase emphasis on programs likely to have such effects. Finally, they would provide an incentive to keenly focus on the effectiveness of customer education and other initiatives for which the Company does not currently count savings.

#### 8. Size of Potential Shareholder Incentive

In this proceeding, the Board has invited Enbridge to propose a DSM policy framework at the same time that it is proposing its DSM plan. One challenge that creates is there is no opportunity to consider whether the size of the maximum shareholder incentive should vary relative to proposed levels of savings – or at least there is no way to consider that question in a way that would influence the level of savings that the Company proposed.

As a result, Enbridge has no incentive when developing a plan to propose levels of savings that would be more challenging to achieve. In fact, it has a perverse incentive to propose levels of savings – and other metrics – that are relatively easy to achieve. That may explain, in part, why the level of savings in its current DSM plan proposal are lower than its historic achievements despite proposed increases in budget.

Some jurisdictions have begun to tie shareholder incentives to levels of savings achieved – and articulating those ties in advance of utility plan filings so that utilities have incentives to be more ambitious in their plans. For example, in Michigan, gas utilities cannot receive any shareholder incentive unless they achieve at least 0.75% first year savings, with actual earnings tied to both lifetime savings and performance relative to additional low income program metrics. If they achieve 0.75% annual savings, Michigan gas utilities can earn up to 15% of total efficiency program spending or 25% of net economic benefits, whichever is lower; if their annual savings reach 1.00% of sales, they can earn up to 20% of total efficiency program spending or 30% of net economic benefits, whichever is lower.

It is worth noting that this new incentive mechanism was adopted in legislation that was signed into law in December of 2016. Prior to that, shareholder incentives were capped at 15% of spending for achieving just 0.75% annual gas savings. Within months of the new law going into effect, Consumers Energy filed a new efficiency program plan that would result in a substantial increase in savings – to levels above the 1.00% savings necessary to earn the maximum allowable incentive.<sup>56</sup>

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<sup>55</sup> Business goals could potentially be focused on a subset of customers, such as commercial customers, or even just small commercial customers.

<sup>56</sup> Consumers Plan filing in Docket U-18261, Exh, A-13.

The OEB should consider whether the size of Enbridge's maximum shareholder incentive should be tied formulaically to the magnitude of savings – ideally lifetime savings – that it proposes in its plan (though actual incentive payments would obviously need to be tied to success relative to those plan goals). Such a formula should be established independent of what the Company proposed plan would achieve. That way, Enbridge has an incentive to actually propose higher levels of savings. This kind of approach could be put in place for the mid-term review as well as the next multi-year plan. It could even be adopted now if the Board agrees with our critique of the Company's proposed savings goals and instructs the Company to increase them.

#### D. Performance Bands of 50% to 150% of Savings Goals

Enbridge's proposal to begin earning shareholder incentives once it has surpassed 50% of a planned goal and not receive the maximum incentive until it has achieved 150% of the planned goal is problematic – at both ends. At the lower end, 50% is far too low a threshold for earning any shareholder incentive related to savings goals.<sup>41</sup> Achieving only half of planned savings levels would be a miserable failure. The notion that the utility should be allowed to earn shareholder incentives at performance levels that can only be considered failures is antithetical to the notion that shareholder incentives should encourage and be rewards for excellent performance. In most jurisdictions, such thresholds are typically set at 70% to 85% of target.<sup>42</sup>

Conversely, not allowing the utility to earn its maximum incentive until it has achieved 150% of goals, especially when spending is constrained to 115% of budget, essentially ensures that it is impossible to earn the full incentive.

In short, at least for savings goals for which there is a long track record of historic performance to reference, performance bands would be better set as 75% to 125% of goal.

#### 5. Economic Net Benefits Metric

##### A. Enbridge's Proposal

As shown in Table 4 above, Enbridge has proposed that 31% of its maximum shareholder incentive be tied to the economic net benefits that its DSM programs produce (as measured under the TRC+ test). Table 6 shows the shared savings scheduled proposed by the Company, including the magnitude of shared savings the Company would earn at the low and high ends of each increment of \$100 million of net benefits – absent a cap on shared savings. The Company has proposed that its net benefits incentive be capped; for 2023, the cap would be \$6.63 million.<sup>43</sup> The Company would have to achieve net benefits of approximately \$535 million to earn its maximum possible shared savings incentive of \$6.63 million.

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<sup>41</sup> 50% could be a reasonable threshold for performance metrics related to new endeavors for which there is significant uncertainty and little to no track record on which to base goals.

<sup>42</sup> Vermont Energy Investment Corporate et al., Independent Study of Energy Policy Issues, Final Report, prepared for the New Hampshire Public Utilities Commission, September 30, 2011 ([https://www.puc.nh.gov/sustainable%20energy/Reports/New%20Hampshire%20Independent%20Study%20of%20Energy%20Policy%20Issues%20Final%20Report\\_9-30-2011.pdf](https://www.puc.nh.gov/sustainable%20energy/Reports/New%20Hampshire%20Independent%20Study%20of%20Energy%20Policy%20Issues%20Final%20Report_9-30-2011.pdf)).

<sup>43</sup> Exh. D, Tab 1, Sch. 2, p. 3.

Table 6: Enbridge Proposed Shared Savings Schedule<sup>44</sup>

Net Benefits Range	% of Net Benefits Shared	Shared Savings Earned w/o Cap (Millions \$)	
		at Bottom of Range	at Top of Range
\$0 to \$100 Million	0.00%	\$0.00	\$0.00
\$100 to \$200 Million	1.00%	\$0.00	\$1.00
\$200 to \$300 Million	1.25%	\$1.00	\$2.25
\$300 to \$400 Million	1.50%	\$2.25	\$3.75
\$400 to \$500 Million	2.00%	\$3.75	\$5.75
\$500 to \$600 Million	2.50%	\$5.75	\$8.25

There are several reasons to be concerned with this proposal, each of which is discussed below.

#### B. The Threshold for Earning Shared Savings is Too Low

The Company has estimated that its 2023 DSM programs will produce \$372.3 in net benefits, translating to \$3.33 million in shareholder incentive.<sup>45</sup> Thus, under its proposed shared savings schedule, it would begin to earn some shareholder incentive once it achieved just 27% of its estimated plan benefits for 2023.<sup>46</sup> It would earn its maximum shared savings incentive at 144% of its estimated plan benefits for 2023.<sup>47</sup>

It should be noted that those performance bands will be different for different years of Enbridge's plan because Enbridge's avoided costs – both the value of avoided gas system costs and the value of avoided carbon emissions – are forecast to increase substantially over time. In fact, the net present value of the benefits achieved in 2027 will be worth approximately 22% more than for the same level of savings achieved in 2023.<sup>48</sup> As Table 7 shows, a 22% increase in the economic benefits would likely translate to about a 28% increase in net benefits.<sup>49</sup> Thus, assuming the same level of savings in 2027 as forecast for

<sup>44</sup> Based on Exh. D, Tab 1, Sch. 2 p. 12. Note that the \$8.25 incentive shown for net benefits of \$600 million is without a cap. However, Enbridge has proposed that the maximum shared savings incentive be \$6.63 million in 2023, increasing to \$7.18 million in 2027. Thus, in all years, the maximum would be earned at levels of net benefits between \$500 and \$600 million.

<sup>45</sup> See Exh D, Tab 1, Sch. 2, p. 13 for the shared savings incentive cap. Net benefits required to earn maximum shared savings incentive computed

<sup>46</sup> Shared savings begin to be earned after \$100 million in net benefits have been achieved. That threshold is 27% of the Company's planned net benefits of \$372.26 million for 2023.

<sup>47</sup> \$535 million in net benefits, the point at which the 2023 cap of \$6.63 million in shared savings would be earned, is 144% of planned net benefits of \$372.26 million.

<sup>48</sup> Calculation based on an average 16 year measure life (computed from data provided in Attachment to 5.GEC.7), using avoided costs provided in Attachments to 5.ED.16. The increase is 21.5% for weather-sensitive loads and 23.3% for non-weather-sensitive loads in the Union rate zones and 21.2% for weather-sensitive loads and 22.1% for non-weather sensitive loads in Enbridge rate zones.

<sup>49</sup> 2023 values for NPV of benefits, costs and net benefits from Exh. D, Tab 1, Sch. 4 p. 2. NPV of benefits in 2027 increased by 22% over 2023 values based on analysis of avoided costs described above. NPV of costs in 2027 increased assuming 2% inflation per year relative to 2023. NPV of net benefits in 2027 is the difference between NPV of benefits and NPV of costs.



2023, Enbridge would begin to earn shared savings at just 21% of planned savings in 2027 and earn its maximum shared savings at just 112% of planned savings for 2027.

Table 7: Expected Change in Economic Net Benefits from 2023 to 2027

Year	NPV Benefits (millions)	NPV Costs (millions)	NPV Net Benefits (millions)	Shared Savings (millions)
2023	\$534.90	\$162.70	\$372.20	\$3.33
2027	\$652.58	\$176.11	\$476.47	\$5.28
Increase	22%	8%	28%	59%

As previously stated, a primary purpose of shareholder incentive mechanisms should be to encourage and reward utilities for excellence in performance in design and delivery of efficiency programs. The notion that Enbridge should be able to begin to earn any shareholder incentives for achieving just one-quarter of its planned benefits is antithetical to that purpose.

#### C. The Value of Net Benefits Can Go Up or Down for Reasons Beyond Utility Control

Another problem with shared savings mechanisms is that the magnitude of the shareholder incentive can increase or decrease substantially for reasons beyond the utility's control. In particular, if avoided gas costs or the value of carbon emission reductions (as tied to the federal carbon tax) go up or down, the magnitude of the shared savings accruing to utility shareholders will go up or down. Indeed, as also shown in Table 7, even under the same set of avoided cost assumptions the magnitude of Enbridge's shared savings incentive would be 59% – or nearly \$2 million – higher in 2027 than in 2023 for achieving exactly the same amount of savings. That is because the Company forecasts that both gas avoided costs and carbon taxes will increase substantially over time.

#### D. Net Benefits Metrics Could Undermine Some Savings Metrics

Economic net benefit metrics, by definition, encourage utilities to focus efforts on those efficiency measures and programs that provide the greatest economic net benefits per dollar of spending. To be sure, achieving substantial economic net benefits is a good thing. The question is whether they should be a primary driver behind utility shareholder incentives or whether they should instead be minimum requirements for earning shareholder incentives. For example, in Michigan, utility shareholder incentives in recent years have been tied to achievement of lifetime savings and low income spending and savings; however, the incentives are capped by the amount of economic net benefits achieved.<sup>50</sup>

There are several disadvantages to using net benefits as performance metrics rather than as just minimum requirements and/or as mechanisms for potentially constraining shareholder incentives. The first, as described above, is that net benefits can change substantially as avoided costs change – for reasons having nothing to do with utility performance. Second, economic net benefits metrics can undermine other metrics designed to encourage equitable treatment of different customer groups. For example, as shown in Table 8, if Enbridge's 2023 programs perform exactly as planned, but in

<sup>50</sup> By statute (PA 342), shareholder incentives for gas utilities achieving at least 1.0% annual savings can be as high as the lesser of 20% of efficiency program spending or 30% of economic net benefits. At the statutory minimum annual savings level of 0.75%, shareholder incentives can be as high as the lesser of 15% of efficiency program spending or 25% of economic net benefits.

implementing its programs the Company shifted just 10% of its Residential program budget to its Industrial programs,<sup>51</sup> the effect would be to increase its shareholder incentive by over \$1 million. While there is some incentive for shifting budgets inherent in Enbridge's proposed savings metrics,<sup>52</sup> those incentives are significantly increased by the Company's proposed shared savings mechanism. Indeed, most of the \$1 million increase from shifting 10% of the planned Residential program budget to Industrial program spending would be due to the proposed shared savings mechanism. Finally, economic net benefits metrics can increase incentives to focus on easier, lower cost measures that may provide near term savings but contribute less to the longer-term energy transformation that is needed to dramatically reduce greenhouse gas emissions. For example, within the residential sector, a net benefits metric will increase incentives to more aggressively promote sales of smart thermostats, which are highly cost-effective (in part, but only because they provide both gas and electricity savings) but are more likely to be adopted in the market in the future without efficiency programs than air sealing, insulation upgrades and other building envelop measures.

Table 8: Shareholder Incentive Impact of 10% Residential Budget Shift to Industrial Programs in 2023

**Net Benefit Impacts of Shifting 10% of Residential Budget to Industrial**

Program	2023 Enbridge Proposed Portfolio					Res Budget Shift to Industrial				
	Budget	TRC+ Benefits	TRC Costs	Net Benefits	TRC+ Ratio	Spend	TRC+ Benefits	TRC Costs	Net Benefits	TRC+ Ratio
Residential	\$40.8	\$125.7	\$66.3	\$59.5	1.90	\$36.7	\$113.1	\$59.6	\$53.5	1.90
Commercial	\$25.3	\$133.5	\$30.6	\$103.0	4.37	\$25.3	\$133.5	\$30.6	\$103.0	4.37
Industrial	\$17.8	\$210.1	\$15.9	\$194.2	13.17	\$21.9	\$258.2	\$19.6	\$238.6	13.17
Low Income	\$23.0	\$52.7	\$20.1	\$32.6	2.62	\$23.0	\$52.7	\$20.1	\$32.6	2.62
Large Volume	\$2.8	\$12.9	\$4.6	\$8.3	2.79	\$2.8	\$12.9	\$4.6	\$8.3	2.79
Energy Performance	\$1.2	\$0.0	\$0.6	-\$0.6	0.00	\$1.2	\$0.0	\$0.6	-\$0.6	0.00
Building Beyond Code	\$8.4	\$0.0	\$5.6	-\$5.6	0.00	\$8.4	\$0.0	\$5.6	-\$5.6	0.00
Low Carbon Transition	\$4.6	\$0.0	\$0.6	-\$0.6	0.00	\$4.6	\$0.0	\$0.6	-\$0.6	0.00
Program Subtotal	\$123.9	\$534.9	\$144.3	\$390.6	3.71	\$123.9	\$570.5	\$141.3	\$429.1	4.04
Portfolio Costs	\$18.4	\$0.0	\$18.4	-\$18.4	0.00	\$18.4	\$0.0	\$18.4	-\$18.4	0.00
Portfolio total	\$142.3	\$534.9	\$162.7	\$372.3	3.29	\$142.3	\$570.5	\$159.7	\$410.8	3.57

**Shareholder Incentive Impacts of Shifting 10% of Residential Budget to Industrial**

Annual Metrics	Plan as Proposed	Res Budget Shift to Industrial	Change
Residential Savings	\$1.46	\$1.17	(\$0.29)
Industrial Savings	\$1.46	\$2.13	\$0.67
Other Scorecards	\$3.71	\$3.71	\$0.00
Shared Savings	\$3.33	\$3.96	\$0.63
Total	\$9.96	\$10.97	\$1.01

<sup>51</sup> A 10% shift in the 2023 residential budget would result in a 23% increase in industrial spending relative to the proposed 2023 budget. Under Enbridge's proposed DSM framework, this level of shift would not require notification of the OEB or stakeholders (Exh. C, Tab 1, Sch 1, p. 15)

<sup>52</sup> This is because industrial savings, for example, are less costly to acquire than residential savings. Having separate sectoral savings metrics reduces the incentive to shift spending to the lowest cost sector (relative to just having a single savings metric), it does not eliminate such incentives.

#### E. Increased Complexity Relative to Energy Savings Metrics

The current annual process of estimating the lifetime energy savings that Enbridge's programs have achieved involves a non-trivial commitment of resources and effort. In a nutshell, evaluation studies and auditing efforts are required to achieve reasonably accurate estimates of both the annual savings that each efficiency measure promoted by Enbridge produced, as well as the number of years into the future that those savings are expected to last. A TRC+ net benefits metric would require similar levels of scrutiny of several additional variables: electricity savings, water savings, efficiency measure costs and avoided costs. To be sure, all of these variables are currently considered as part of the annual processing of auditing Enbridge's efficiency programs so that estimates of the cost-effectiveness of those programs can be reported. However, the level of scrutiny required for that purpose is very different than the level of scrutiny that would likely be expected when the contentious issue of shareholder incentives is at stake.

If Enbridge's efficiency programs are estimated to have a benefit-cost ratio of 3 to 1, it does not matter that much if the estimate is accurate within a range of 2.5 to 3.5 to one if the only purpose of the cost-effectiveness assessment is to ensure there is sufficient value for the DSM dollars being spent. However, if that 15-20% swing in cost-effectiveness could mean \$1 million or more in shareholder incentive, the level of accuracy will become much more important and contentious.

#### F. Summary

While there could be some value to the net benefits metric proposed by Enbridge – particularly that it would measure the economic benefit of energy savings which is almost always of concern or interest for regulators and customers – the disadvantages appear to significantly outweigh that value. Economic net benefits will be correlated with savings for which there are separate performance metrics – particularly if Enbridge's proposed annual savings metric is changed to a lifetime savings metric. They will also be highly dependent on avoided cost assumptions that will change over time and significantly broaden the range of variables and assumptions that require careful scrutiny to ensure shareholder incentive payments are reasonable. They could also undermine interests in equitably acquiring savings across all customer groups. Finally, under Enbridge's proposed shared savings structure, it would be able to start earning incentives at unreasonably poor levels of performance.

For these reasons we recommend that this metric not be adopted, with the weight Enbridge proposed be assigned to it spread across other metrics. If the Board was inclined to adopt a shared savings metric, we recommend that (A) the metric be based on the Utility Cost Test net benefits, which would eliminate the need to assess often difficult to estimate assumptions about participant measure costs and focus more on gas system benefits; (B) a mechanism (e.g., formulaic adjustments to the shared savings tiers) be put in place to avoid either penalizing the company for avoided costs going down or giving it windfall profits for avoided costs going up; and (C) increasing the level of net benefits at which the Company can earn any shared savings to a point consistent with something akin to achieving 75% of its savings goals. For 2023, that would be something like \$275 in TRC+ net benefits.

#### 6. Low Carbon Transition Metric

As shown in Table 4 above, Enbridge is proposing that 2% of the shareholder incentive for which it is eligible over its 2023 to 2027 plan period be attached to achievement of what it calls a Low Carbon Transition Scorecard. The proposed scorecard has four metrics – two focused on numbers of heat pumps installed (residential sector and commercial sector) and two focused on numbers of contractors

Residential, Low Income, Commercial and Industrial sectors as the budgets for each of those sectors, though different, are the same order of magnitude. It is also reasonable to have a much smaller allocation to the metric for Large Volume customers, both because the level of budget allocated to such customers is an order of magnitude smaller than the budget allocated to other customer groups and because the program design for serving them – in which the customers largely make decisions on how to use program funds rather than deciding whether to participate in a utility-designed program – is fundamentally different than for the other sectors.

### C. Allocation of Shareholder Incentives to Energy Performance Program

The Energy Performance Program metrics – both the savings metric and the participation metric – are perplexing. Though the program is being targeted (at least initially) to schools, those customers can also be served by other programs. In other words, the Energy Performance Program is simply a different delivery path for achieving energy savings. Given that, it is difficult to understand why it merits its own performance metrics. The savings generated should instead just be part of the Commercial sector savings goals. Just as with any other new program the Company could offer, if the Energy Performance program approach proves effective at generating participation and savings, it would enhance Enbridge's performance relative to its Commercial sector goals. If it is not effective at generating participation and savings, it will hurt Enbridge's performance relative to those goals.

It is worth noting that under its proposal the Company can earn nearly twenty times as much shareholder incentive per unit of energy savings produced by the Energy Performance program as it can per unit of energy savings produced by its other commercial sector programs<sup>39</sup> – and at a cost that is nearly ten times higher per unit of savings produced.<sup>40</sup> Put another way, if left in place, the Energy Performance program metrics would obviously create a perverse incentive to focus disproportionate attention on what is expected to be a relatively lower performing program. Thus, the Energy Performance program metrics should be eliminated, with the shareholder incentive proposed for them reallocated to other savings metrics.

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<sup>39</sup> For 2023, Enbridge estimates that Commercial efficiency programs other than the Energy Performance Program will produce 24.4 million new annual m3 savings (Exh. D, Tab 1, Sch. 3, p. 4) for which it would earn \$1.459 million in shareholder incentives (Exh. D, Tab 1, Sch. 2, p. 7) – or \$0.06 in incentives per first year m3 saved. In contrast, for 2024 (the first year for which there would be a savings metric for the Energy Performance program), Enbridge estimates its Energy performance Program would produce 0.06 million m3 in new annual savings (Exh. D, Tab 1, Sch. 3, p. 7) for which it could earn \$0.067 million in shareholder incentives (Exh D, Tab 1, Sch. 2, p. 8) – or \$1.08 per first year m3 saved. This comparison is between 2023 values for Commercial programs and 2024 values for the Energy Performance program, but the small inflationary increase in 2024 incentive payments is a tiny part of the enormous difference in incentive dollars per m3 saved. Note also that this comparison is based on the Company's proposed first year savings metrics. It appears likely that a comparison on lifetime savings will show an even larger difference.

<sup>40</sup> For 2023, Enbridge has budgeted \$25.3 million for Commercial programs other than the Energy Performance Program (Exh D, Tab 1, Sch. 1 p. 11) to produce 24.4 million in first year m3 savings (Exh D, Tab 1, Schedule 3, p. 4), or \$1.04 per first year m3 saved. In contrast, for 2024 the Company has budgeted \$1.2 million for its Energy Performance Program (Exh D, Tab 1, Sch. 1 p. 12) to produce 0.06 million in savings, or \$9.84 per first year m3 saved (Exh D, Tab 1, Schedule 3, p. 4). This comparison is between 2023 values for Commercial programs and 2024 values for the Energy Performance program, but the small inflationary increase in 2024 budgets is a tiny part of the enormous difference in planned spending per m3 saved. Note also that this comparison is based on the Company's proposed first year savings estimates. It appears likely that a comparison on lifetime savings will show an even larger difference.

(residential) or engineers (commercial) trained on heat pump technology. The focus of the Low Carbon Transition program is on (1) hybrid heat pumps – i.e., electric heat pumps installed in concert with a gas furnace; and (2) gas-fired heat pumps.

There may be merit to near-term investment in hybrid heat pumps, provided they are cold climate models. However, as discussed further in Section IV of this report, it is inappropriate to invest in gas-fired heat pump technology, let alone to tie a shareholder incentive payment to Enbridge’s success in promoting the technology. Thus, the performance metrics for the Low Carbon Transition Program should focus solely on training for and installations of cold climate hybrid heat pumps.

## 7. Long-Term GHG Reduction Metric

As shown in Table 4 above, Enbridge is proposing that 5% of the shareholder incentive for which it is eligible over its 2023 to 2027 plan period be attached to achievement of what it calls a Long-Term GHG Reduction goal. Enbridge proposes that the goal be measured in “gross savings” (i.e., without adjusting for free rider or spillover effects) and be equal to its 2023 planned level of gross savings multiplied by five (for the number of years in the plan) and then increased by 15% (what the Company calls a “stretch”). Unlike with its other metrics, the Company would earn no incentive if it fell short of this goal and the full 5% incentive if it met or exceeded the goal.<sup>53</sup>

This proposal is highly problematic for a several reasons. First, because it focuses on gross savings rather than net savings, it isn’t actually a measure of GHG emissions reductions resulting from Enbridge’s programs. All gross savings – and therefore all related emissions reductions – that were produced by free riders would, by definition, have occurred without Enbridge’s programs. Second, because it is a summing of first year savings rather than lifetime savings, it fails to quantify the full lifecycle GHG emission reductions resulting from the Company’s programs. Third, because it simply sums first year savings, it could even overstate the amount of annual emission reductions being realized after 2027. For example, any savings from measures with a 3-year life that were installed in 2023 would not still be persisting in 2028. However, they would still be counted under Enbridge’s proposal. Fourth, the 15% “stretch” factor is deceiving because it does not account for the fact that the Company is proposing budgets that increase by 4.6% per year.<sup>54</sup> In other words, the Company would not need to do much more than achieve its 100% targets for each year to earn the incentive available from this proposed metric. Finally, the proposal to make this an “all or nothing” metric – where the Company either earns it in its entirety for meeting or exceeding the goal, but earns nothing if it falls short – could create perverse incentives. For example, if the Company knows in early to mid-2027 that it will be close to meeting this five-year goal, there will be a strong incentive to pursue free rider projects because the \$5 million payoff would be far greater than the incremental effect that pursuing more difficult or expensive non-free rider savings would have on other 2027 performance metrics. Put simply, this proposed metric would not cause the Company to do anything it wouldn’t plan to do anyway to achieve real net energy savings under the other performance metrics. To the extent that it may cause any change in behavior, it would be detrimental rather than positive.

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<sup>53</sup> Exh D, Tab 1, Sch 2, p. 15.

<sup>54</sup> While part of that annual budgetary increase is to account for inflation, Enbridge’s proposed Target Adjustment Mechanism for setting post-2023 savings goals assumes a 2% productivity improvement per year – essentially offsetting expected inflation.

That said, the concept of a longer-term performance metric is a good one. However, such a metric should only be adopted if it actually drives the Company to do something different – in a positive way – than it would without the metric. One possible example would be a metric that compares average, weather-normalized residential energy consumption in 2027 to 2022. Another might be a metric that focused on lowering the energy intensity of business customers’ use of gas (per unit of GDP). Reasonable goals might be to achieve average residential consumption levels that are 5% lower than those currently forecast and/or improvements in the energy intensity of business customers to levels 5% better than currently forecast.<sup>55</sup> Those kinds of metrics would ensure that Enbridge focuses on the quality of the delivery of its programs. They would also reward spillover effects that may not be fully captured in current EM&V practices, providing an incentive for the Company to increase emphasis on programs likely to have such effects. Finally, they would provide an incentive to keenly focus on the effectiveness of customer education and other initiatives for which the Company does not currently count savings.

#### 8. Size of Potential Shareholder Incentive

In this proceeding, the Board has invited Enbridge to propose a DSM policy framework at the same time that it is proposing its DSM plan. One challenge that creates is there is no opportunity to consider whether the size of the maximum shareholder incentive should vary relative to proposed levels of savings – or at least there is no way to consider that question in a way that would influence the level of savings that the Company proposed.

As a result, Enbridge has no incentive when developing a plan to propose levels of savings that would be more challenging to achieve. In fact, it has a perverse incentive to propose levels of savings – and other metrics – that are relatively easy to achieve. That may explain, in part, why the level of savings in its current DSM plan proposal are lower than its historic achievements despite proposed increases in budget.

Some jurisdictions have begun to tie shareholder incentives to levels of savings achieved – and articulating those ties in advance of utility plan filings so that utilities have incentives to be more ambitious in their plans. For example, in Michigan, gas utilities cannot receive any shareholder incentive unless they achieve at least 0.75% first year savings, with actual earnings tied to both lifetime savings and performance relative to additional low income program metrics. If they achieve 0.75% annual savings, Michigan gas utilities can earn up to 15% of total efficiency program spending or 25% of net economic benefits, whichever is lower; if their annual savings reach 1.00% of sales, they can earn up to 20% of total efficiency program spending or 30% of net economic benefits, whichever is lower.

It is worth noting that this new incentive mechanism was adopted in legislation that was signed into law in December of 2016. Prior to that, shareholder incentives were capped at 15% of spending for achieving just 0.75% annual gas savings. Within months of the new law going into effect, Consumers Energy filed a new efficiency program plan that would result in a substantial increase in savings – to levels above the 1.00% savings necessary to earn the maximum allowable incentive.<sup>56</sup>

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<sup>55</sup> Business goals could potentially be focused on a subset of customers, such as commercial customers, or even just small commercial customers.

<sup>56</sup> Consumers Plan filing in Docket U-18261, Exh, A-13.

<b>DSM Investments - 2019-2023 Budgets</b>					
	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Total programs (real \$2019)<sup>1</sup></b>	\$104,256,598	\$105,885,459	\$101,439,603	\$99,450,591	\$102,694,633
<b>Total programs (nominal)</b>	\$104,256,598	\$106,429,657	\$106,429,657	\$106,429,657	\$112,099,380
<b>Resource acquisition</b> (all but market transformation)	\$96,241,519	\$98,283,322	\$98,283,322	\$98,283,322	\$99,797,287
<b>Market transformation</b>	\$8,015,079	\$8,146,335	\$8,146,335	\$8,146,335	\$12,302,093
<b>Total overhead</b>	\$19,947,784	\$20,113,541	\$20,113,541	\$20,113,541	\$23,053,142
<b>Program overhead</b>	\$16,105,784	\$16,271,541	\$16,271,541	\$16,271,541	\$11,800,620
<b>Portfolio overhead</b>	\$3,842,000	\$3,842,000	\$3,842,000	\$3,842,000	\$11,252,522
<b>Portfolio costs (non-admin)</b>	\$6,986,164	\$7,063,719	\$7,063,719	\$7,063,719	\$7,107,478
<b>Total budget</b>	\$131,190,546	\$133,606,917	\$133,606,917	\$133,606,917	\$142,260,000
<b>Overhead as % of Total</b>	15.2%	15.1%	15.1%	15.1%	16.2%

<sup>1</sup>2019-2021 applies CPI Factor from Bank of Canada as of September. 2022-2023 assumes annual 2% inflation factor.

(c) Please see table below.

<b>Proposed Program Budget Increases From 2023 to 2027</b>		
	<b>Nominal</b>	<b>Inflation Adjusted (@ 2% Annual)</b>
<b>Resource Acquisition</b> (incl. all but market transformation)	8%	0%
<b>Market Transformation</b>	135%	117%

(d) Please see table below.



ENBRIDGE GAS INC.

Undertaking Response to Environmental Defence (ED)

Undertaking

Tr: 48

Data tables from IESO planning outlook, weighted average marginal cost forecast – why would Enbridge propose to use total wholesale cost instead of marginal cost published by the IESO.

Response:

Enbridge Gas's electricity avoided cost methodology (based on the IESO's wholesale weighted average rate) is a simplified approach that has been in place since at least the beginning of the 2012-2014 DSM Framework. For references related to the methodology, see response to Exhibit JT1.7.

Enbridge Gas does not have comprehensive knowledge of the IESO's electricity avoided cost methodology used for CDM programs, nor does Enbridge Gas have expertise in electricity system costs. Enbridge Gas is aware of the IESO's cost-effectiveness tool available at the following link: <https://www.ieso.ca/en/Sector-Participants/Energy-Efficiency/Evaluation-Measurement-and-Verification>. The tool is a MS Excel workbook which includes a tab titled "Avoided Cost Table", which provides some information on the IESO's electricity avoided costs.

Based on a review of this tab, and some brief questions posed to IESO staff, Table 1 provides Enbridge Gas's understanding of the differences between Enbridge Gas's electricity avoided cost methodology for DSM and the IESO's electricity avoided cost methodology for CDM.



## General Principles



### Principles agreed upon to date that will guide the agreement

- Letter from Ontario MOE to NRCan:

“..key principle of the Government of Canada in terms of its program delivery is to implement the programs in such a manner as **to not displace or duplicate provincial programs**. We are very supportive of this approach.” **[emphasis added]**
- Customers/Constituents should have access to rebates already announced:
  - NRCan program requirements and rebates are applicable Canada wide. They can't be altered and must form the base for any collaborative program
- Duplicating similar program in market creates confusion, not in the interest of customers/constituents and requires the same resources to perform home audits.
  - Best outcome is a single program in market jointly funded and delivered in a collaborative fashion
  - Enbridge co-funding within budget level filed in DSM Plan application

- I expect to see the establishment of multi-year natural gas Demand Side Management (DSM) programming and the implementation of the OEB's Integrated Resource Planning framework for assessing demand-side and supply-side alternatives to pipeline infrastructure in meeting natural gas system needs. I would like to express my strong interest in a framework that delivers increased natural gas conservation savings and reduces greenhouse gas emissions. Conservation is a strong driver for cost savings for ratepayers, and with the introduction of carbon pricing, conservation can also transform homes and help protect ratepayers from the impact of the carbon tax. Natural gas conservation programs have delivered continued value for money for ratepayers – based on OEB-verified results for 2019, every dollar spent on natural gas DSM has resulted in up to \$3 in participant and social benefits.
- With regard to the next multi-year DSM programming period, it is important that the regulatory processes are optimized to increase efficiency so that they do not hinder Ontarians' access to the real savings that result from these programs. It is also important that the DSM Framework be implemented in a way that enables customers to lower energy bills in the most cost-effective way possible, and help customers make the right choices regardless of whether that is through more efficient gas or electric equipment. I also wish to stress the continued need to foster integration and alignment between natural gas and electricity conservation programs to find efficiencies and to facilitate a streamlined customer experience, where feasible. That said, I am pleased to see the continued collaboration between the IESO Conservation and Demand Management (CDM) and DSM programs in the low-income space and encourage further collaboration, as appropriate. Likewise, as communicated in a recent letter from the Ministry to the federal government encouraging collaboration between DSM and the new Canada Greener Homes Program, it is important that the OEB considers how to use Ontario's DSM programs to leverage these federal funds to benefit Ontario ratepayers.
- The *Supporting Broadband and Infrastructure Expansion Act, 2021* (Bill 257) received Royal Assent on April 12, 2021. This Act contains amendments to the *Ontario Energy Board Act, 1998* that, when proclaimed into force, would establish new authorities in support of the use of and access to electricity infrastructure for non-electricity purposes. As ENERGY considers how these authorities can support the government's objectives for rural broadband expansion, continued consultation and collaboration with the OEB will be essential.
- Modernizing and streamlining processes to reduce regulatory burden is vitally important to the work of an efficient and effective regulator. I am pleased that the OEB has taken steps in this direction in response to the 2020 Mandate Letter, including reviewing how filing requirements can be tailored to LDC size, releasing the Chief Commissioner's Plan with initiatives to enhance adjudicative processes and launching a review of the Reporting & Record-keeping Requirements.

.../cont'd

1 because you are co-delivering. I think we don't even have  
2 to discuss it. It is obviously a goal of this. But are  
3 you saying that you are hoping that this cooperation will  
4 also give you more reach on the programs you have than you  
5 would going it alone?

6 MR. FERNANDES: Yes. We're hoping -- we're hoping  
7 that, you know, the alternative that is before us is to  
8 have two separate programs with substantial overlap in the  
9 same market.

10 So by working together, we do hope there is going to  
11 be much better results for both NRCan reaching their goals  
12 and for Enbridge reaching ours.

in terms of risks to Enbridge investors – that would argue for shorter amortization period for DSM but not for capital investments in T&D?

Response:

Yes. As I state on page 18 of my report: “To mitigate these risks, some regulators are already recommending that gas asset lives be lowered to accelerate the draw-down of unamortized asset balances.” On this point, my position is that regulators might consider shorter asset lives for DSM regulatory assets, as well as other physical and regulatory assets.

**Exhibit I.5.EGI.GEC.10**

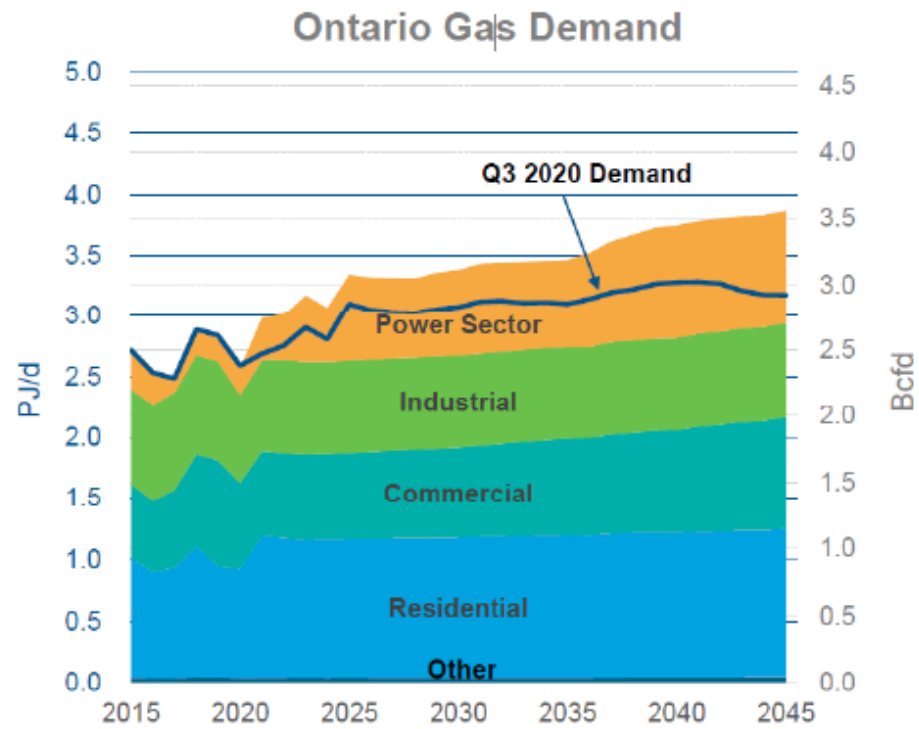
On p. 23 of his report, Mr. Weaver lists three questions the OEB should address before moving forward with amortization. The third of these is “How should competing policy objectives be balanced, specifically, increases in DSM budgets, short- and long-term rate levels, and acceptable regulatory asset balances.”

- a) Would Mr. Weaver agree that significantly increased DSM savings, at least if it included significant measures and programs that would reduce winter peak hour usage, would lower and/or defer future capital investments in gas transmission and distribution infrastructure that would otherwise be necessary to meet growing peak demands (what is sometimes called “passive deferral” of T&D investment)? If not, why not?
- b) Would Mr. Weaver agree that, all other things equal, greater DSM savings will reduce future regulatory asset balances associated with new T&D capital investments? If not, why not?
- c) When considering tradeoffs between DSM budgets, rate levels and regulatory asset balances, should the OEB consider the reduction in future T&D regulatory assets resulting from passive deferral of T&D investments as well as increases due to amortization of DSM? In other words, should it consider the net impact on regulatory asset balances of DSM? If not, why not?

Response:

- a) My understanding is that Enbridge’s sales have been fairly flat for at least a decade, so I am not sure that Enbridge has substantial capital investments “necessary to meet growing peak demands”
- b) In my evidence I make a distinction between regulatory assets, such as amortized DSM expenditures, and physical assets such as T&D capital investments. The concerns I raise are specific to regulatory assets.
- c) See response to part b).

Figure 3 - Ontario Natural Gas Demand



Source: ICF Q4 2020 Natural Gas – Strategic. Used with permission.

In this example, compared to other utilities cited by Optimal Energy and Energy Futures Group that use a 75% threshold at the *portfolio* level, Enbridge could deliver the exact same portfolio savings, but would receive a lower incentive, because the Enbridge threshold applies at the *program* level. I assume that Optimal Energy and Energy Futures Group do not characterize these other utilities achieving *portfolio* savings above 75% to be lackluster.

- b. I agree that there is an upside to the EFG and Optimal's proposals. I am not sure as to whether it fully compensates Enbridge for the downside.

#### **Exhibit I.5.EGI.GEC.7**

Ref.: On p. 14 of his report, Mr. Weaver states that the growing size of a regulatory asset associated with amortizing DSM "could be a concern to Enbridge investors and credit rating agencies..." and that "Since the asset is not backed by physical property, Enbridge is at risk if a future OEB Panel would ever decide to stop funding the ongoing cost recovery required to fully repay Enbridge's bondholders and shareholders."

- 1) Why would this concern be different for a DSM regulatory asset than for an asset associated with capital investment in the utility's distribution system, such as a larger underground pipe to serve a particular region of its service territory?
- 2) If the answer to part "a" of this question is that DSM does not involve physical assets whereas distribution systems do, why does the presence of a physical asset change the risk of a future Board deciding to stop "funding ongoing cost recovery"? Wouldn't the presence of a physical asset only be a risk mitigating factor if the Company could sell it to another party in the event that the Board stops allowing cost-recovery? If not, why not?
- 3) Would Mr. Weaver agree that for an underground gas pipe replacement project, the physical asset is unlikely to have any net salvage value to the Company in the event that it is no longer being used and/or paid for 10 or 15 years after its installation – i.e., it is unlikely that the utility could make any money by digging up and selling the physical asset (and that the market value of the asset may even be less than the cost of digging it up)?

#### **Response:**

- a) Credit ratings agencies take regulatory assets into consideration when issuing credit ratings and credit outlooks for utility companies. For example, Moody's rating methodology for the utilities industry specifies: "Many of our metrics focus on Cash Flow from Operations Before Changes in Working Capital (CFO Pre-WC) because,

unlike Funds from Operations (FFO), it captures the changes in long-term regulatory assets and liabilities.”<sup>2</sup>

References to concerns over regulatory assets are also common in the literature among utilities and other commenters. For example:

- When Ameren Missouri ceased amortizing DSM program costs in 2011, the Ameren witness in that proceeding testified to the utility’s concern for rising regulatory asset balances: “There will be ample opportunity for parties hostile to our interests to judge our results with the benefit of hindsight and attempt to whittle away at our recovery of legitimate costs. The larger the demand-side regulatory asset gets, the more tempting a target it becomes for such parties.”<sup>3</sup>
- As one justification for South Carolina Electric & Gas to propose using a shorter (5-year) amortization term, a company witness stated concerns over regulatory asset balances: “Should the regulatory asset account on the balance sheet become too large, it may become a concern to rating agencies and adversely impact bond ratings, which constitute an additional risk to investors, especially to bond investors, who are seeking relatively safer returns than equity investors.”<sup>4</sup>
- In a review of DSM amortization and shareholder incentive mechanisms used through the United States, the Cadmus Group stated: “Nonetheless, this regulatory asset is often seen as less firm than other physical assets. It might be treated differently for accounting and tax purposes. And some stakeholders have raised concerns that market conditions or changes in future rate recovery proceedings might render such regulatory assets unrecoverable.”<sup>5</sup>
- In a presentation given through the American Council for an Energy Efficient Economy, Rich Sedano from the Regulatory Assistance Project stated that amortization can increase financial risk by delaying recovery and boosting recovery risk, with a net result that “can lead to increased debt costs, all things being equal, if the regulatory asset balances get too high or if the unrecovered balances appear at risk.”<sup>6</sup>

**These risks can also move beyond the theoretical.** In 1999, the Minnesota Public Utilities Commission denied Northern States Power (now part of Xcel Energy) recovery of lost margins and amortized program costs that had previously been approved. The combined cost recovery amounts had grown to levels exceeding

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<sup>2</sup> Moody’s Investor Services, *Ratings Methodology, Regulated Electric and Gas Utilities*, June 23, 2017.

<sup>3</sup> Direct Testimony of Stephen Kidwell, Missouri Public Service Commission Docket ER-2010-0036. July 2009.

<sup>4</sup> Direct Testimony of Scott D. Wilson, South Carolina Public Service Commission Docket No. 2009-261-E. August 27, 2009.

<sup>5</sup> Brian Hedman and Jill Steiner. DSM in the Rate Case, Public Utilities Fortnightly. January 2013.

<sup>6</sup> Rich Sedano, The Regulatory Assistance Project and Dan York, American Council for an Energy Efficient Economy, *Aligning Utility Financial Incentives with Energy Efficiency Program Objectives: New Business Models for Energy Utilities*. September 17, 2009.

annual DSM expenditures, and the PUC denied recovery, based on proposals from a number of intervenors.<sup>7</sup> Northern States Power appealed the decision all the way to the Minnesota Supreme Court. Eventually, the Supreme Court ruled in favor of Northern States Power, allowing Northern States Power full recovery.<sup>8</sup> The Minnesota Public Utilities Commission subsequently changed the DSM incentive mechanism to a performance-based shared savings approach.<sup>9</sup>

b) See response to part a).

c) See response to part a).

#### **Exhibit I.5.EGI.GEC.8**

Ref: On p. 17 of his report, Mr. Weaver shows the unamortized regulatory asset for DSM growing to between a little more than \$600 million in under a 5-year amortization approach and a little under \$1.8 billion under a 16-year amortization approach.

How do those values compare to the current (2022) unamortized asset balance for all non-DSM investments Enbridge has made to date?

Response:

Enbridge Gas Response:

Enbridge Gas does not see how this interrogatory is relevant to this DSM proceeding. The basis for DSM investments is vastly different than all non-DSM investments and so comparing unamortized asset balances would not provide any value.

#### **Exhibit I.5.EGI.GEC.9**

Ref.: On p.17 of his report, Mr. Weaver states that “large regulatory balances create risks for Enbridge’s investors should future OEB Panels change their policy supporting the natural gas utility industry in general.”

Wouldn’t the same regulatory risks also be a good reason to amortize capital investment in the Enbridge transmission and distribution (T&D) system over a time period much shorter than the technically useful life of such new assets? If not, why not? What is different about DSM relative to supply side investments –

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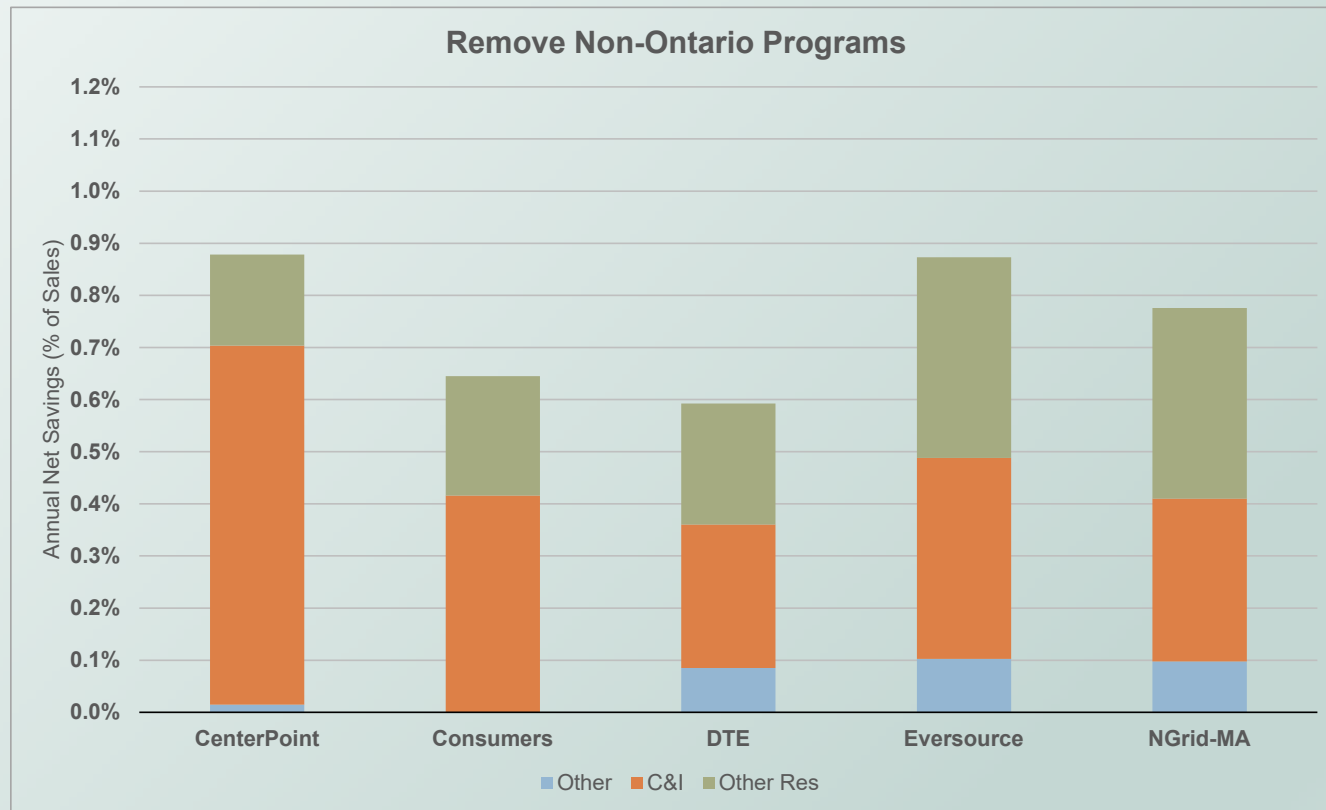
<sup>7</sup> Order Disallowing Recovery of Lost Margins and Other Incentives and Requiring Revised Conservation Program Adjustment, Minnesota Public Utilities Commission Docket No. E-002/M-99-419, July 27, 1999.

<sup>8</sup> In the Matter of a Request by Northern States Power Company for Approval of its 1999/2000 Proposed CIP Adjustment, 1998 Demand Side Management Incentives, and 1998 CIP Status Report, State of Minnesota in Supreme Court, February 21, 2001.

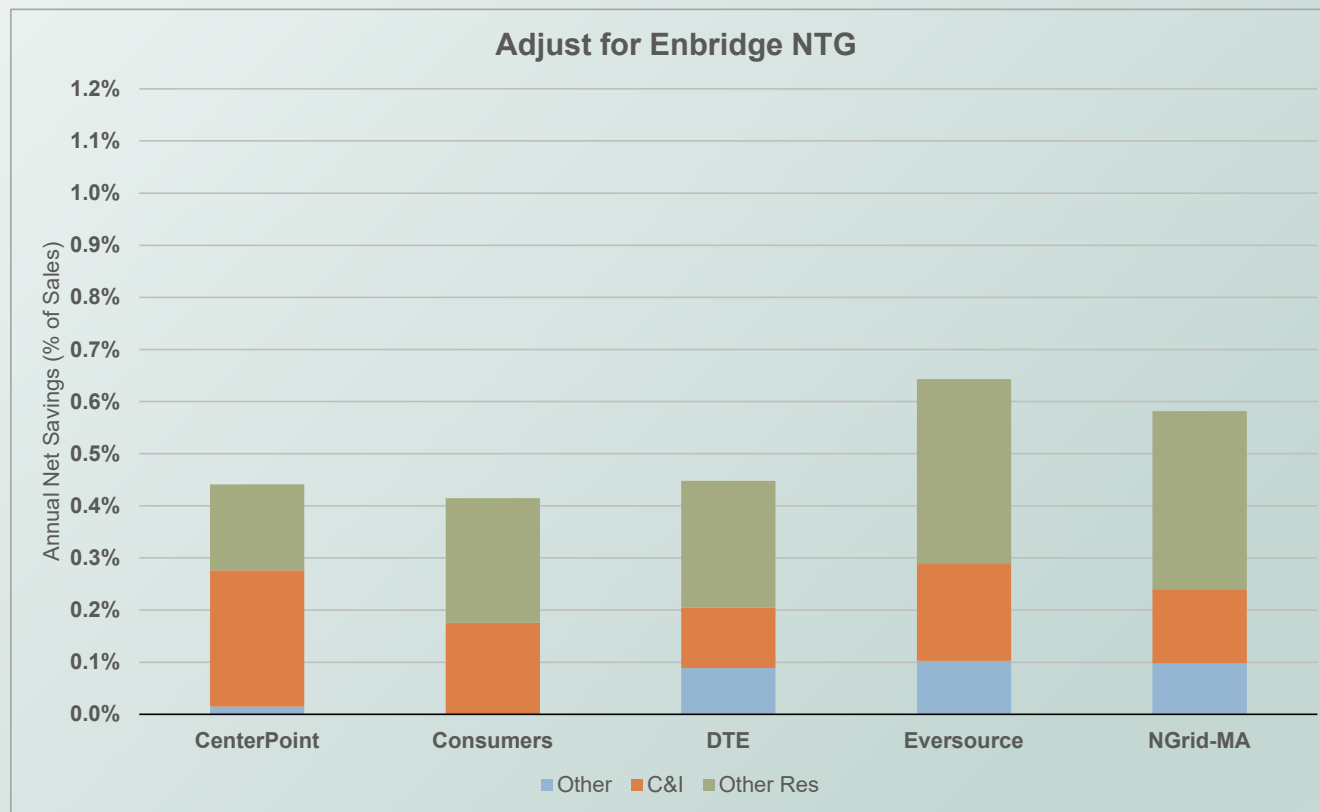
<sup>9</sup> Minnesota Public Utilities Commission, Order Approving Demand Side Management Financial Incentive Plans, Docket No. E/G-999, /CI-98-1759, April 7, 2000.



## Benchmark Context: Eliminate Offerings Not Viable in Ontario



## Benchmark Context: Adjust for Enbridge NTG Ratios



- Another 7% (0.09%/1.30%) of savings come from new construction and code support programs. It is my understanding that while Enbridge provides its Savings by Design offerings, Enbridge does not count these gas savings in its 2023 scorecard. In addition, while Ontario will implement new stretch codes during the latter half of the Enbridge plan, it is unclear if Ontario evaluation policies will allow Enbridge to claim savings at levels allowed for National Grid. In any case, Enbridge has not factored these saving into its plan.

Taken together, these three program areas represent 46% of National Grid's savings; without these programs, National Grid's savings represent approximately 0.7% of annual sales. While this is still higher than Enbridge's target of 0.40% in 2023, most of this difference comes from two additional issues that should be considered before applying Massachusetts benchmarks to Ontario:

- Massachusetts has different evaluation approaches and outcomes than those in Ontario. For example, the net-to-gross factors used to calculate Enbridge's 2023 savings targets are lower than those achieved in Massachusetts due to a combination of factors: evaluation methods, customer mix (Enbridge has more sales and savings from larger customers who often experience lower net-to-gross ratios), and budget constraints (National Grid's portfolio does not have a budget constraint and so can afford to offer larger rebates, which drives down net-to-gross ratios).
- National Grid does not have a budget cap, and so has much higher budgets than Enbridge proportional to its service territory. Enbridge's 2023 budget represents approximately 3% of revenues, while National Grid spends approximately 9% of revenues, or about 3 times what Enbridge spends (or over 8 times if spending is expressed per unit of throughput). If Enbridge spent at National Grid's budget levels, it would need annual budgets of approximately \$420 million (at a 3X scale up) to \$1.1 billion dollars (at an 8X scale up).

# Performance Incentives

## Key Takeaways: Primary Metrics

- Most primary metrics are driven by energy savings
  - **Annual Savings**
  - **Lifecycle Savings** = **Annual Savings** X Lifetime
  - **Lifecycle GHG Savings** = **Lifecycle Savings** X GHG factor
  - **UC+GHG Net Benefits** = **Lifecycle Savings** X Gas Avoided Costs + **GHG Avoided Costs** X GHG Costs – Delivery Costs – Incentives Costs
  - **TRC Net Benefits** = **UC Net Benefits** – Incentive Costs + Participant Costs
  - And:
    - ✓ UC/TRC may need to address water and cross fuel savings
    - ✓ TRC may also use different discount rate
- So:
  - Annual savings is the simplest performance driver
    - ✓ But can skew investment to shorter lived measures (behavior, electric lighting)
  - **Lifecycle savings fundamentally drives most planning objectives (GHG reduction; UC/TRC cost reduction)**
  - More complicated metrics:
    - ✓ Create additional measurement issues and risks
    - ✓ Rely on factors changing within plan cycles and out of utility control
    - ✓ Create additional opportunities for conflict and portfolio management risk
    - ✓ Without substantially improving management incentives
  - **Lifecycle savings is (Ted's) preferred metric**
    - ✓ Requires clear assumptions and algorithms for useful lives, mid-life adjustments, etc.
    - ✓ Or lifecycle GHG savings, to capture electric benefits of key measures
    - ✓ Or annual savings, with constraints on individual programs (embedded somewhat in Enbridge proposal)

**ICC Docket No. 17-0312**  
**Corrected Statewide Quarterly Report ComEd 2019 Q4**  
**Tab: 6- Historical Costs**

Statewide Quarterly Report Template  
 Tab 6: Historical Costs

**Instructions:**

\*Each Program Administrator will fill out the "Historical Energy Efficiency Costs" table for Quarterly Reports.  
 \*For Costs, each Program Administrator should include actual costs incurred from the beginning of the Program Year through the end of the applicable quarter or Program Year, regardless of what Program Year the costs are associated with. Costs include both Program and Portfolio-Level Costs as well as On-Bill Financing costs.  
 \*Program Administrators should add a footnote specifying if there are non-rider energy efficiency costs that are not reported in the Quarterly Reports.

**ComEd Service Territory Historical Energy Efficiency Costs as of Q4 2020**

Program Year	Actual ComEd EEPS Costs	Actual DCEO EEPS Costs	Total Actual EEPS Costs (ComEd + DCEO)	Actual Section 16-111.5B Costs	Total Actual EEPS + Section 16-111.5B Costs
EPY1- 6/1/08-5/31/09	\$ 27,356,150	\$ 6,949,809	\$ 34,305,960	\$ -	\$ 34,305,960
EPY2- 6/1/09-5/31/10	\$ 52,071,860	\$ 11,471,615	\$ 63,543,475	\$ -	\$ 63,543,475
EPY3- 6/1/10-5/31/11	\$ 75,691,133	\$ 28,659,011	\$ 104,350,143	\$ -	\$ 104,350,143
<b>Electric Plan 1 Total</b>	\$ 155,119,143	\$ 47,080,435	\$ 202,199,578	\$ -	\$ 202,199,578
EPY4/GPY1- 6/1/11-5/31/12	\$ 106,315,195	\$ 35,049,987	\$ 141,365,182	\$ -	\$ 141,365,182
EPY5/GPY2- 6/1/12-5/31/13	\$ 107,354,964	\$ 33,565,649	\$ 140,920,613	\$ 31,329	\$ 140,951,942
EPY6/GPY3- 6/1/13-5/31/14	\$ 124,096,016	\$ 31,563,417	\$ 155,659,433	\$ 29,469,183	\$ 185,128,616
<b>Electric Plan 2/Gas Plan 1 Total</b>	\$ 337,766,174	\$ 100,179,053	\$ 437,945,228	\$ 29,500,512	\$ 467,445,740
EPY7/GPY4- 6/1/14-5/31/15	\$ 128,288,585	\$ 33,728,435	\$ 162,017,020	\$ 39,150,327	\$ 201,167,347
EPY8/GPY5- 6/1/15-5/31/16	\$ 108,343,594	\$ 3,670,970	\$ 112,014,564	\$ 87,103,873	\$ 199,118,437
EPY9/GPY6- 6/1/16-12/31/17	\$ 222,451,928	\$ 57,854,489	\$ 280,306,417	\$ 159,497,825	\$ 439,804,242
<b>Electric Plan 3/Gas Plan 2 Total</b>	\$ 459,084,107	\$ 95,253,894	\$ 554,338,001	\$ 285,752,025	\$ 840,090,026
Program Year	Actual ComEd EEPS Costs YTD	Approved ComEd EEPS Budget	% of Costs YTD Compared to Approved Budget		
2018	\$ 352,988,359	\$ 351,334,190	100%		
2019	\$ 351,381,796	\$ 351,334,190	100%		
2020	\$ 346,480,323	\$ 351,334,190	99%		
2021	\$ -	\$ 351,334,190	N/A		
<b>2018-2021 Plan Total</b>	\$ 1,050,850,478	\$ 1,405,336,760	N/A		

On a 12 month basis:  
 $\$440m * 12/19 = \$278m$

A 77% increase over 2.6 years

Source: <https://ilsag.s3.amazonaws.com/ComEd-CY2020-Q4-Spreadsheet-1.pdf>