

**Ontario Energy Board**  
**Natural Gas Demand Side Management Framework**  
**Effective Date: January 1, 2023**

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## Ontario Energy Board

### Natural Gas Demand Side Management Framework

#### 1. Background

The Ontario Energy Board's (OEB) natural gas demand side management (DSM) framework provides the basis for planning, consideration and decision-making related to ratepayer funded natural gas DSM activities in Ontario. The DSM framework will be effective on a going forward basis beginning January 1, 2023.

The 2023 DSM Framework makes updates to various elements of previous OEB policy regarding ratepayer funded DSM, namely two companion documents – the Demand Side Management Framework for Natural Gas Distributors (2015-2020) and the Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020)<sup>1</sup> and is intended to provide guidance to DSM planning and execution.

#### 2. Objectives of Ratepayer Funded Natural Gas DSM

The OEB is of the view that it is important that DSM programs result in more meaningful reductions in overall natural gas sales volumes. The OEB provided guidance related to primary and secondary objectives for ratepayer funded DSM in the OEB's December 1, 2020 letter.<sup>2</sup> These objectives largely remain relevant, however, the OEB has made key updates to reflect the important role that natural gas DSM can play in providing value to customers in terms of overall lower natural gas sales volumes and resulting lower overall costs, while also contributing to the broader policy objective of reducing greenhouse gas (GHG) emissions. Therefore, the main objective for ratepayer funded DSM is:

- Ratepayer funded DSM programs should result in meaningful reductions in overall annual natural gas sales volumes with consequent cost savings for ratepayers.
- Efforts dedicated to achieving this objective will continue to be assessed to ensure proposed activities will assist customers in making their homes and business more efficient in order to help lower overall natural gas bills. The OEB recently established a first-generation integrated resource planning (IRP)

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<sup>1</sup> EB-2014-0134

<sup>2</sup> EB-2019-0003, OEB Letter Post-2020 Natural Gas Demand Side Management Framework (December 1, 2020), p. 2.

framework that provides direction on the OEB's requirements as Enbridge Gas considers IRP to meet its system needs.<sup>3</sup> As experience is gained with the IRP framework, future considerations should be given to the role of DSM and how that relates to IRP activities as there is significant benefits to deferring and/or avoiding future natural gas infrastructure projects.

### 3. Guiding Principles

The guiding principles set out below are intended to support DSM plan and program development. In the 2015 DSM Framework, the OEB outlined a list of guiding principles which it expected would help the gas utilities to develop their multi-year DSM strategies and assess the appropriateness of their overall DSM plans.<sup>4</sup> The updated guiding principles below should continue to be used by stakeholders when considering elements to include in future DSM plans and to help inform program development.

- **DSM plans should balance the achievement of cost-effective natural gas savings and customer bill impacts.** The appropriate level of ratepayer funding expended for DSM programs must weigh the benefits of the level of 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 result in meaningful natural gas savings to the benefit of Ontario's natural gas customers by reducing overall natural gas usage and costs, and contributing towards meeting the Government's goals to reduce greenhouse gas emissions.
- **DSM plans should balance the expectation that cost-effective natural gas savings should be maximized while still providing opportunities for a broad spectrum of consumer groups and customer needs to encourage widespread customer participation over time and ensure all segments of the market are reached in some capacity.** Programs should be designed to remove financial, information and other barriers in the marketplace to increase uptake of DSM programs" over time. While those programs that are most cost-effective should be prioritized for expansion in order to maximize the level of natural gas reductions and general efficiency improvements, programming should still be provided to all

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<sup>3</sup> EB-2020-0091, Appendix A

<sup>4</sup> EB-2014-0134, OEB Report of the Board Demand Side Management Framework for Natural Gas Distributors (2015-2020) (December 22, 2014), p. 6.

consumer groups so that a broad spectrum of customers can realize the direct benefits of increased energy efficiency.

- **DSM plans should ensure that small volume, low-income and on-reserve First Nations communities are well-served.** Income qualified programming should be screened at a lower threshold than other programming and be available across the province.
- **DSM plans should include strategies to increase the natural gas savings by targeting key segments of the market and customers where opportunities for efficiency improvements have been identified.**
- **DSM plans should minimize lost opportunities for energy efficiency and should be designed to pursue long term energy savings.** DSM programming should pursue opportunities such as replacement of equipment with long lives that, if not undertaken during the current planning period, will no longer be available or will be substantially more expensive to implement in a subsequent planning period.
- **Where appropriate, Enbridge Gas should coordinate and integrate natural gas DSM, with other conservation initiatives, including electricity CDM efforts and municipal energy plans.** Consistent with the Ministerial Directive issued to the Independent Electricity System Operator (IESO) on September 30, 2020, the OEB expects that Enbridge Gas will endeavor to coordinate the delivery of DSM programs with electricity CDM programs where possible.
- **Enbridge Gas should not have a disincentive to coordinate DSM efforts with external energy conservation and carbon reduction initiatives.** Enbridge Gas should endeavor, where appropriate, to coordinate its DSM activities with other external parties such as government partners, to achieve efficiencies and maximize results.
- **DSM plans should support innovation, technology development and adoption of lower-carbon alternatives to enable longer-term energy efficiency and conservation opportunities, consistent with the advancement of provincial policy goals.**
- **Enbridge Gas will be able to recover costs and lost revenues associated with the delivery of DSM plans.** Enbridge Gas will be permitted to recover spending associated with the administration and delivery of DSM programs, lost revenues, and shareholder incentive amounts.

- **Shareholder Incentives will be commensurate with both performance and efficient use of funds.** The amount of shareholder incentive will depend on overall level of natural gas reductions, performance against DSM targets, and will take into consideration the relative difficulty in achieving other objectives and guiding principles Enbridge Gas is expected to achieve.

#### 4. DSM Budgets

In order to fund the costs of administering and delivering DSM programs, including marketing efforts, financial incentives to participants, and educating consumers, long-term and annual DSM budgets must be developed that will enable the achievement of DSM objectives over the duration of a DSM plan period.

The OEB's objectives with respect to natural gas include the requirement to protect the interests of consumers with respect to prices, reliability, and quality of gas service. The OEB also has an objective to promote energy conservation and energy efficiency but with consideration for the consumer's economic circumstances. Therefore, in approving any budget amount, it is necessary for the OEB to consider the rate impacts, or overall cost impacts, to customers, as all DSM costs are recovered through distribution rates.

The appropriate level of ratepayer funding expended for DSM programs must weigh the benefits of cost-effective natural gas savings to be achieved against both short-term and long-term customer bill impacts.

While some customers will participate in the programs offered by Enbridge Gas and benefit from the natural gas savings, given DSM budget constraints and for other reasons, many customers may not participate. Many elements of DSM programs that offer the greatest opportunity to realize long-term natural gas savings (and bill reductions) are related to the installation of energy efficient products, such as a building envelope improvements. However, with the availability of other technologies, such as smart thermostats, there should be a possibility that some form of energy efficiency opportunity exists for many customers. In any event, as there will always be customers who do not participate in any DSM program, they will end up cross-subsidizing, through natural gas distribution rates, energy efficiency upgrades for those customers who do participate. Because of this, the OEB must be mindful of the overall impact additional costs have on all customers (both participants in DSM programs and non-participants).

## 5. DSM Targets

It is important that Enbridge Gas's DSM programs result in meaningful reductions in overall natural gas sales volumes. To achieve this, a combination of annual and longer-term targets will be established for the DSM plan.

A target refers to the level against which the actual result of a DSM program offering will be assessed. A target level could be set at a metric level (e.g., saving 100,000 m<sup>3</sup> of natural gas) and at a scorecard level (e.g., achieving score of the combined scorecard metrics of 100%).

DSM targets, including annual natural gas savings targets and other performance metrics are the achievement standards that Enbridge Gas will strive to accomplish (or exceed), both annually and throughout the term of the DSM plan.

### 5.1 Annual Targets

Net annual natural gas savings targets (m<sup>3</sup>), will be set for most resource acquisition type program offerings. The annual savings targets proposed will be informed by the following: an updated analysis of the level of natural gas energy efficiency potential available in Ontario; market opportunities; past DSM program experience; new innovations; and, industry capacity to deliver DSM program offerings.

It is important for the OEB and ratepayers to have certainty in the overall level of natural gas savings that will result from DSM programs. The OEB expects that natural gas savings levels going forward will have fixed targets to allow for greater certainty.<sup>5</sup> This is important as a number of interested stakeholders, including the OEB, ratepayers and the provincial and federal governments will have interest in understanding the contributions that ratepayer funded DSM in Ontario will provide towards GHG emissions reduction goals. In some instances, annual fixed targets for each program may be appropriate. In other instances, a fixed target may be more appropriately set for the end of the term to allow greater flexibility in achieving the overall goals of the DSM plan. The OEB appreciates that there may be a level of uncertainty related to some programs, depending on if the program is new, if there are key efficiency technologies that are in jeopardy to continue in the future or new technologies that are emerging, or if there is uncertainty over the rate of market adoption. For these reasons, it will be important for Enbridge Gas to consider the reasonableness of annual fixed targets or end-of-term fixed targets for programs or the DSM plan as a whole. In some cases, DSM program

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<sup>5</sup> The OEB has approved the application of the Target Adjustment Mechanism for the 2023-2025 term. However, it expects that following the completion of the 2023-2025 term, fixed targets will be set for future DSM plans.

offerings may be “multi-year” in nature, such that activities and participant involvement may span more than one year and may include a progression of related activities or an initial ramp-up in the first year(s). The annual targets for these program offerings should reflect the relative activities year to year and consideration should be given as to whether different metrics and targets are appropriate to reflect the objective during the ramp-up period and as the program offering evolves.

Enbridge Gas will respond to target guidance provided by the OEB and propose targets for metrics specified across defined scorecards. Three levels of achievement will be established for each individual metric on a given scorecard: one at 75%, 100% and 125%. To achieve the maximum shareholder incentive designated for achievement on each scorecard, Enbridge Gas will be required to meet the maximum score of 125% on the respective scorecard. No shareholder incentive will be paid on a given scorecard for achieving a scorecard weighted result of less than 75%. For a given scorecard, 40% of the maximum shareholder incentive designated to that scorecard will be awarded for a weighted scorecard performance of 100% on that scorecard. Where more than one metric is defined on a given scorecard, the minimum achievement for each individual metric will be 0% and the maximum achievement will be 200%.

## 5.2 Target Adjustment Mechanism

Where appropriate, Enbridge Gas may continue to employ a target adjustment mechanism (TAM) for the 2023-2025 DSM term to establish metric targets for years subsequent to the metric targets approved for the first year of a multi-year plan.

The formula for the TAM is:

Year 2 100% Metric Target =

$(\text{Year 1 Performance}^{(i)} \div \text{Year 1 Spend}^{(ii)}) \times \text{Year 2 Budget}^{(iii)} \times (\text{productivity factor} \div \text{inflation adjustment})$

- (i) Performance is the audited metric achievement in the given year. For natural gas savings (m<sup>3</sup>) metrics, the formula utilizes the LRAM natural gas savings achievement that calculates savings using best-available assumptions.
- (ii) Spend is the spend attributable to the respective metric excluding overheads.
- (iii) Budget is the approved next year budget (escalated for inflation) attributable to the respective metric excluding overheads.

A productivity factor of 2% will factor into TAM in the continued pursuit of efficiencies.

An inflation adjustment will recognize that the value of incentives and other program costs should be stated in real terms.

*By way of illustration: if the utility's 2023 verified net annual gas savings achievement for a given metric is 15 million m<sup>3</sup> with an audited spend of \$7.50million (excluding overheads), this can be expressed as 2.00 m<sup>3</sup> per dollar spent.*

*To calculate the 2024 metric target:*

|                                                                         |          |                                 |                        |
|-------------------------------------------------------------------------|----------|---------------------------------|------------------------|
| <i>the 2023 outcome:</i>                                                |          | <i>2.00 m<sup>3</sup>/\$</i>    | <i>multiplied by</i>   |
| <i>the 2024 budget:</i>                                                 | <i>x</i> | <i>\$7,700,000</i>              |                        |
| <i>which equals:</i>                                                    | <i>=</i> | <i>15,400,000 m<sup>3</sup></i> | <i>, multiplied by</i> |
| <i>2% productivity factor</i>                                           | <i>x</i> | <i>1.02</i>                     |                        |
| <i>adjustment for inflation</i>                                         | <i>÷</i> | <i><u>1.02</u></i>              |                        |
| <i>resulting in 2024 100% metric target of 15,400,000 m<sup>3</sup></i> |          |                                 |                        |

The lower and upper bands are calculated by multiplying the 100% target by 75% and 125% respectively.

*In the illustration the lower band will be 11.55 million m<sup>3</sup> (75% of 15.4 million m<sup>3</sup>) and the upper band will be 19.25 million m<sup>3</sup> (125% of 15.4 million m<sup>3</sup>).*

### 5.3 Multi-Year Gas Savings Target

As discussed above multi-year, or end-of-term targets, should be considered and proposed as part of a DSM plan. These targets will largely focus on overall natural gas reductions. Ontario has set a target to reduce GHG emissions by 30% from 2005 levels by 2030, which is approaching quickly.<sup>6</sup> The natural gas that Enbridge Gas delivers to customers in Ontario is a significant contributor to Ontario's GHG emissions and Enbridge Gas's own forecast does not envision an overall reduction in total natural gas consumption in the province by 2030. While Enbridge Gas has successfully delivered the DSM plans previously approved by the OEB, leading to more efficient use of natural gas and reducing the natural gas consumption of many customers, greater effort is required if Ontario is to meet its GHG target. Ontario has identified several initiatives to

<sup>6</sup> [Preserving and Protecting our Environment for Future Generations A Made-in-Ontario Environment Plan](#)

achieve its target, including the continuation of DSM programming for natural gas customers through 2030. End-of-term targets and incentives that aim to motivate reductions in the total volume of natural gas consumed Enbridge Gas's Ontario customers should be proposed as part of the DSM plan.

## **6. Shareholder Incentive**

To effectively encourage the gas utility to pursue DSM, shareholder incentives are intended to motivate the gas utility to both actively and efficiently pursue DSM savings and to recognize performance.

The annual maximum shareholder incentive related to annual performance scorecards totals \$20.9 million. Subsequently, just as the DSM budget will be increased for inflation, this maximum incentive should be increased annually for inflation over the course of the next multi-year plan.

An additional \$30 million, incremental to the maximum shareholder incentive related to performance scorecards, is also available for the 2023-2025 term. Enbridge Gas will be eligible for the End-of-Term Natural Gas Reduction Incentive if, at the end of the 3-year term, total volume of natural gas sold to Enbridge Gas's Ontario customers in 2025 is 1.5% less than total volume of natural gas consumed by Enbridge Gas's Ontario customers in 2022 on a weather normalized basis. Additionally, a 75% achievement threshold of the 1.5% reduction target (or a 1.125% reduction in total volume of natural gas) will result in Enbridge Gas receiving \$15 million. There is no linear relationship between the 75% threshold and 100% target. Rather, they will each act as discrete incentive points.

The new End-of-Term Natural Gas Reduction Incentive will be allocated to rate classes in an equal manner, consistent with the approved shareholder incentive related to program scorecards.

End-of-term incentives are important in motivating meaningful action towards the objective of DSM, which is that DSM programs should result in meaningful reductions in overall annual natural gas sales volumes. The End-of-term incentive should be based on the level of overall annual natural gas sales volumes proposed to be reduced to act as an effective motivator of meaningful results.

## **7. DSM Plan and Program Considerations**

Enbridge Gas's multi-year DSM plan should focus on addressing the objectives and guiding principles outlined in Section 2 and 3. Ultimately, Enbridge Gas has flexibility in deciding what programs to include in its proposed multi-year DSM plan to ensure it is cost-effective and will enable the achievement of significant benefits, particularly long-term natural gas savings. Where fuel switching away from natural gas aligns with the OEB's stated DSM objectives Enbridge Gas may pursue these activities.

To help ensure that an appropriate balance among the guiding principles are maintained and that changes to the DSM plan are consistent with the other elements of the DSM framework, Enbridge Gas should apply to the OEB for approval if they decide to re-allocate funds from programs that have been approved as part of the multi-year DSM Plan application to new programs that are not part of their OEB-approved DSM Plan. However, if Enbridge Gas decides to re-allocate funds amongst existing, approved DSM programs, Enbridge Gas should inform the OEB, as well as stakeholders, in the event that cumulative fund transfers among OEB approved DSM programs exceed 30% of the approved annual DSM budget for an individual DSM program (either the program the funds are being transferred from, or the program the funds are being transferred to). This level of guidance is meant to ensure that adequate flexibility in DSM program and portfolio design is maintained, while recognizing that Enbridge Gas is ultimately responsible and accountable for its actions. This flexibility should ensure that Enbridge Gas can appropriately react to and adapt with current and anticipated market developments.

### **7.1 Program Types**

#### **7.1.1 Resource Acquisition**

These programs seek to achieve direct, measurable savings customer-by-customer and often involve the installation of energy efficient equipment or may involve the adoption of more energy efficient operations or the implementation of process improvement(s) to optimize energy use.

#### **7.1.2 Market Transformation**

These programs are focused on helping to facilitate fundamental changes that lead to greater market adoption of energy-efficient products and services. These programs should also focus on influencing consumer behaviour and attitudes that support reduction in natural gas consumption. They are designed to make a permanent change

in the marketplace over a long period of time. These programs include a wide variety of different approaches.

Market transformation programs can be applicable to lost opportunity markets where, for example, equipment is being replaced or new buildings are being built. Lost opportunity markets refer to DSM opportunities that, if not undertaken during the current planning period, will no longer be available or will be substantially more expensive to implement in a subsequent planning period. An example of preventing a lost DSM opportunity would be improving the thermal envelope of a building at the time the building is undergoing unrelated major renovation work.

Some programs are a mix of market transformation and resource acquisition programs and seek both fundamental changes in markets and direct, measurable energy savings.

Market transformation programs operate where competitive forces are not expected to yield the results sought or not within an acceptable timeline. Enbridge Gas can help fill in some of the gaps in achieving market transformation results or accelerate the achievement of those results.

Market transformation programs are not amenable to a mechanistic cost-effective screening approach and should be reviewed on a case-by-case basis instead.

### **7.1.3 Low Income Program**

The purpose of DSM programs tailored to lower income consumers is to recognize that these programs more adequately address the unique challenges involved in providing DSM programs for, and the special needs of, this customer segment. The Low Income program is a set of program offerings designed for low income residents of both single and multi-residential housing which may include resource acquisition or market transformation type offers. Hence, the distinctive features of these types of offerings result from additional guiding principles and design characteristics, as opposed to the nature of the program.

This programming is critical in helping the most vulnerable customers manage their natural gas bills. A list of program requirements, specific to the challenges and needs of this segment has been included to assist in the development of Low Income programming. Consistent with the precedent that was set with the Board approved 2012-2014 Multi-year DSM Plan and associated Settlement Agreement for Enbridge Gas Distribution, “parties agree that free ridership for all low-income measures both

prescriptive and custom shall be set at zero.”<sup>7</sup> This direction will be consistent franchise-wide for all Enbridge Gas low income programming.

### Low Income Program Considerations<sup>8</sup>

In addition to general requirements of DSM programming, income qualified natural gas DSM programs, accessible to low income natural gas consumers, should include the following features:

- Be accessible province wide where gas is available;
- Be available for both single and multi-residential buildings, both social housing and privately owned, including the private rental market;
- Require no, or low, upfront costs to the income qualified energy consumer. Where costs are required, Enbridge Gas will be required to make an application to the OEB for approval.
- Address non-financial barriers (e.g. communication, cultural, linguistic).
- Be delivered in a cost-effective manner
  - While the Low Income program may not have a positive total resource cost test result, it is still important for Enbridge Gas to be efficient in managing costs to achieve the maximum results for the budget
- Provide a simple, non-duplicative, integrated and coordinated application, screening and intake process for the Low Income program that covers all the segments of the low income housing market including, for example, homeowners, owners and occupants of social and assisted housing, and owners of privately owned buildings that have low income residents.
  - Enbridge Gas will develop specific criteria for determining eligibility criteria.
- Provide integrated, coordinated delivery, wherever possible, with CDM programs; provincial and municipal agencies; social service agencies and agencies concerned with health and safety issues;
  - Encourage collaboration with partners such a private, public and not-for-profit organizations for program delivery
- Include direct install elements:
  - Provide a turnkey solution where appropriate from the perspective of the participant such that the participant deals with one entity which coordinates all elements of delivery;

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<sup>7</sup> EB-2012-0394, Enbridge Gas Distribution Inc. Update to the 2012 to 2014 DSM Plan, Settlement Agreement (February 28, 2013) at Exhibit B, Tab 2, Schedule 9, p. 9.

<sup>8</sup> Updated from: EB-2014-0134, OEB Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020) (December 22, 2014), p. 9.

- Capture potential lost opportunities for energy savings, including new construction of low income/affordable housing.
- Provide an education and training strategy that:
  - Encourages behaviour change of program participants;
  - Helps low income energy consumers help themselves; and
  - Helps program participants to understand the benefits of participating in the income-qualified DSM program and conservation, in general.
- Help channel partners attain necessary skills.

### Income Eligibility

Thresholds and approaches for establishing income eligibility criteria for low income programming should be periodically examined to ensure programming is being delivered to the intended population and consistent with other energy efficiency and energy conservation providers in Ontario, namely the IESO.

Specific details regarding income screening and Low Income Program eligibility will be detailed in Enbridge Gas's multi-year DSM Plan and revisited as appropriate to ensure it remains effective.

### **7.1.4 Pilot and Test Programs**

In addition to delivering established program offerings to its customers, Enbridge Gas should consider how pilot programs and tests can help to better understand new program designs and delivery concepts, leading to greater natural gas savings and market penetration of programs. Pilot programs should involve the testing or evaluation of energy efficient technologies or detailed, customer-specific natural gas usage information that may serve as the model for DSM program development. With a multi-year DSM planning cycle, a forward-looking focus is prudent.

**Pilot programs** are new initiatives with uncertain outcomes. Pilots allow risks to be taken to try something new in a controlled manner to gauge how the market reacts. Successful pilot programs should be graduated using the pilot results to develop the roll-out. Unsuccessful pilots are learning opportunities. Active prioritization should be applied to identify the best potential pilots with the most potential for success.

**Tests** are marginal changes to an existing program. Tests may be changes to targeting, program criteria or incentive levels. Tests allow changes to be made without compromising or adding significant risk to the underlying program. The OEB

encourages employing tests to actively pursue continuous improvement for established programs. If designed and tracked appropriately, test and control groups would provide the data required to make informed roll-out decisions based on revised targets, TRC-plus ratios, and incentives.

Pilots and tests could be included within Resource Acquisition and Market Transformation programs and are necessary to evolve the current portfolio of DSM programs. This year's pilots and tests may be next year's programs.

## **7.2 Coordination of Natural Gas DSM And Electricity CDM Programs**

The OEB expects that Enbridge Gas will endeavor to coordinate the delivery of DSM programs with electricity CDM programs where possible, including modifying the participant eligibility requirements of its current low-income program in order to be consistent with the electricity income-tested CDM program eligibility requirements. The centralization of electricity CDM programs under the IESO may lead to new opportunities for DSM-CDM collaboration and a greater level of overall energy savings. The OEB expects Enbridge Gas to file evidence addressing linkages to the electricity CDM framework and to identify opportunities for efficiencies, program cost reductions, and increased natural gas savings.

## **7.3 Attribution**

Attribution relates to whether the effects observed after the implementation of a natural gas utility's DSM activity can be attributed to that activity, or at least partly results from the activities of others. Given the potential for coordination of natural gas DSM programs with electricity CDM programs, the guidance on attribution is divided into two categories: attribution between Enbridge Gas and the IESO (including electric Local Distribution Companies (LDC), and attribution between Enbridge Gas and other parties (e.g., non-rate-regulated entities such as agencies and various levels of government, non-rate regulated private companies, etc.).

### **Attribution of Benefits Between Enbridge Gas and the IESO or LDCs**

For electricity CDM and natural gas DSM programs jointly delivered with IESO (or in coordination with an LDC), all the natural gas savings should be attributed to Enbridge Gas and vice versa for electricity savings. This represents a continuation of the simplified approach adopted in the 2006 Generic Proceeding and continued through to the 2015-2020 DSM Guidelines.

## Attribution of Benefits Between Enbridge Gas and Other Parties

Attribution of savings between Enbridge Gas and other parties (e.g., governments, non-rate-regulated private sector, etc.) should be based primarily on the shares established in a partnership agreement reached prior to the program's launch.

Where Enbridge Gas's allocated share of natural gas savings in the partnership agreement is more than 20% of the share that would have been allocated based on a "percentage of total dollars spent" basis, an explanation for the difference should be provided.<sup>9</sup> In this case, Enbridge Gas is also expected to file anticipated spending in the delivery of the program before the program is launched and the actual amount spent within each program year that has taken place. As partnerships do not always evolve as originally planned, this additional information will help the OEB and stakeholders to assess the reasonableness of the shares allocated in the partnership agreement reached prior to the program's launch and the actual contribution Enbridge Gas made to the program.

The share allocated to Enbridge Gas will be used to determine the credited achievement for each of the relevant metrics used to evaluate the program.

### 7.4 Energy Efficiency and Integrated Resource Planning

Consistent with the OEB's IRP Framework Decision, future IRP Plan applications (which may include enhanced targeted energy efficiency (ETEE) will be separately reviewed and approved by the OEB, and, the costs and results associated with future IRP Plans and any associated ETEEs, if applicable, will be attributable to that IRP Plan and remain separate and distinct from the DSM Framework and the OEB-approved DSM plans and budgets.

It should be noted however, that the energy efficiency measures that underpin both DSM programming and ETEEs intended to target a defined constrained area as part of an IRP plan may, in some cases, encompass the same measures, aimed at the same customer group(s). It is also likely that the staff supporting DSM delivery of these energy efficiency measures may also support delivery of an ETEE for an IRP project.

Accordingly, even though there may be incremental budget/resources allocated to delivering one or more ETEEs as part of an IRP Plan, it is appropriate that some costs, such as existing DSM administration and overheads, should be re-allocated to, or from,

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<sup>9</sup> For example, if the partnership agreement allocates a share of 50% of the natural gas savings to the gas utility, but the actual share of "dollars spent" by the utility is 30% or less, an explanation should be provided to justify why the 50% share is more reflective of the gas utility's actual contribution.

the DSM plan/budget to reflect such shared costs. It is therefore reasonable to establish a threshold of materiality to address such consideration as follows:

- Any requisite re-allocation of costs amounting to \$1,000,000 or more in a given year will require Enbridge Gas to file for an adjustment to the DSM Plan.

In addition, again consistent with the OEB's IRP Framework Decision, any IRP Plan funded ETEE(s) results will be solely attributed to the IRP Plan in which the ETEE(s) was approved. If the impact of an IRP Plan or the cumulative impact of multiple IRP Plans is projected to reduce DSM Plan results of any single DSM scorecard by more than 10% in a given year, Enbridge Gas will be required to file an application to adjust the DSM Plan targets accordingly.

## **8. Program Evaluation**

Evaluation, Measurement and Verification ("EM&V") is the process of assessing the impacts and effectiveness of a DSM program on its participants and/or the market. Moreover, EM&V of DSM activities is important to support the OEB's review and approval of prudent DSM spending, and requests to recover lost revenues and shareholder incentive amounts claimed by Enbridge Gas. As was initiated in the 2015 Framework, the OEB assumed the coordination function of the EM&V process, outlined a DSM Evaluation Governance Structure, and established the Evaluation Advisory Committee ("EAC"). Six general EM&V activities are defined below, along with the accountability of such activities.

- Gross Measurement
- Draft and Final DSM Annual Reports
- Evaluation, Measurement & Verification (EM&V) Plan
- Impact Evaluation and Annual Verification of DSM Results
- Technical Resource Manual ("TRM") updates
- Process Evaluation

## 8.1 Gross Measurement

Description: The method(s) used by the program administrator (Enbridge Gas) to determine the gross resource savings claimed by a DSM program offering. *Examples: Prescribed savings (as per TRM), and custom project modeling tools.*

Accountability: Enbridge Gas

Gross measurement approaches are a component of program design and delivery, which continue to be Enbridge Gas's accountability. Each DSM program offering proposed in the Multi-Year DSM Plan includes an approach to gross measurement.

It is critical that gross measurement approaches are considered for each program offering at the beginning of the DSM Multi-Year Plan term, as they directly impact how the program offerings are delivered, and how DSM budgets and targets are set. Any impact evaluation undertaken will typically align with the gross measurement approach, however, the final evaluation methodologies will be determined independently, usually by the OEB's Evaluation Contractor or similar independent evaluation expert retained by the OEB. Should a fundamental change to gross measurement approaches be recommended by Enbridge Gas (for example, to account for new/innovative ways of determining savings and delivering program offerings) Enbridge Gas will file a letter to the OEB advising of such change.

## 8.2 Draft and Final DSM Annual Reports

Description: Annual reporting of DSM activities and results.

Accountability: Enbridge Gas

Consistent with the 2015 DSM Framework, Enbridge Gas will continue to provide a Draft DSM Annual Report (previously referred to as the Draft Evaluation Report) to OEB Staff by April 1<sup>st</sup> of the year following the DSM program year being reported on.<sup>10</sup> The Draft DSM Annual Report supports and informs the Evaluation Contractor (EC) in carrying out the evaluation and audit process of Enbridge Gas's DSM plan.

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<sup>10</sup> Enbridge Gas's Draft DSM Annual Report requires finalized information from the previous year's DSM annual audit (for example, for target setting). Should a previous year's DSM annual audit not be concluded by March 1<sup>st</sup> (one month ahead of the April 1st submission date for the Draft DSM Annual Report), Enbridge Gas will propose an alternative approach and/or timeline to OEB Staff.

Enbridge Gas's Final DSM Annual Report will be filed following the conclusion of the annual DSM evaluation process, as part of Enbridge Gas's DSM Deferral and Variance Account Disposition application for the applicable program year.

### **8.2.1 Components of the DSM Annual Report**

The DSM Annual Report will be used to inform the OEB on Enbridge Gas's year-over-year progress in the implementation of its multi-year DSM Plan by summarizing the savings achieved, budget spent and the process evaluations conducted by the utility in support of the draft results.

The DSM Annual Report should provide an overview of the DSM program results including the annual resource savings attributable to each program, presented as both net and gross of the adjustment factors. Enbridge Gas should include, as an appendix to their DSM Annual Report, any evaluation studies provided by third party evaluators, and any other relevant research.

Enbridge Gas should provide a statement that outlines the program year's:

- Gross and Net annual natural gas savings;
- Net benefits;
- Cost Effectiveness;
- Lost revenue amounts;
- Shareholder incentive amounts;
- Budget; and
- Actual spend.

Enbridge Gas should also indicate in their DSM annual report:

- Offering changes that occurred during the program year;
- Lessons learned over the course of the program year; and,
- Any planned activities or anticipated offering changes for the subsequent program year, if applicable.

At a minimum, the DSM annual report should include the following key elements, in a clear and concise manner, at the beginning of the report:

- Annual and long-term DSM budgets (\$/year, and \$/plan term);
- Actual annual total DSM costs (including total DSM spend, shareholder incentive, and lost revenues) for each rate class dating back 10 years;

- Historic actual annual DSM spending (\$/year) dating back 10 years;
- Historic annual shareholder incentive amounts available and earned (\$/year) dating back 10 years;
- Shareholder incentive earned as a percent (%) of DSM spend; and
- Total historic annual and cumulative gross and net natural gas savings (m<sup>3</sup>) dating back 10 years;
- DSM spending as a percentage of distribution revenue;
- Historical annual natural gas savings targets (m<sup>3</sup>/year) dating back 10 years;
- Total historical annual and cumulative gross and net natural gas savings (m<sup>3</sup>) as a percentage of total annual natural gas sales dating back 10 years;
- Total historical natural gas sales (m<sup>3</sup>/year) dating back 10 years;
- and, Number of customers, by rate class and by customer type in each year dating back 10 years.

### 8.3 Evaluation, Measurement & Verification (EM&V) Plan

Description: Description of planned impact evaluation and verification, and process evaluation activities to be undertaken during the Multi-Year Plan. The purpose of the EM&V Plan is to outline the planned EM&V activities and their objectives.

Accountability: The OEB will retain a third-party EC to draft an EM&V Plan with advice and input from the EAC. In addition, the OEB expects that all process evaluations undertaken by Enbridge Gas will be included in the OEB's EM&V Plan.

### 8.4 Impact Evaluation and Annual Verification of DSM Results

Description: Post-implementation assessment and evaluation of the results of DSM program offerings. *Examples: Net-to-Gross evaluation, Custom Project Savings verification, Installation verification.*

Accountability: Coordinated by the OEB, the EC will be responsible for auditing annual DSM results based on the EM&V Plan and producing a Final Annual Verification Report.

Consistent with the 2015 DSM Framework, the OEB will continue to coordinate impact evaluation and annual verification activities with input from the EAC. The OEB will be responsible for selecting a third-party EC who is responsible to carry out the evaluation process of Enbridge Gas's DSM program offerings. The EC will conduct their work and issue recommendations and proposed revisions for comment to the EAC and Enbridge Gas prior to the EC finalizing the Annual Verification Report. Furthermore, the scope

and deliverables of any specific impact evaluation and verification activities should include input from the EAC and Enbridge Gas.

## 8.5 Technical Resource Manual (“TRM”) updates

Description: Updates to input assumptions for existing prescriptive DSM measures, and addition of new prescriptive DSM measures

Accountability: Coordinated by the OEB

Consistent with the 2015 DSM Framework, the OEB will continue to coordinate TRM updates with input from Enbridge Gas and the EAC. The currently established TRM process as described in the EC’s November 2, 2017, document (Technical Reference Manual Maintenance and Update Process) should continue, with updates made as needed.

## 8.6 Process Evaluation

Description: Ongoing assessment of the effectiveness of DSM offerings (generally qualitative).

*Examples: Assessing the effectiveness of specific program design elements from the customer’s perspective, etc.*

Accountability: Enbridge Gas

Process evaluation is directly related to program design and implementation. Coordination of process evaluations, including which programs to evaluate and when, selection of any third parties engaged for this work, and proposed scopes of work and methodologies, continue to be Enbridge Gas’s accountability. Enbridge Gas will share a full, formal process evaluation plan with OEB staff, the EAC and EC for integration into the broader EM&V plan developed for the OEB by the EC. All process evaluation work plans and draft reports should be shared with OEB staff, the EAC and EC for review and comment, with Enbridge Gas (or its consultant) providing responses to all comments, similar to the expectation of the OEB’s evaluation consultants. Attention should be paid to areas of overlap between the evaluation work led by OEB staff and that led by Enbridge Gas to strive for efficiencies and synergies where possible. At a minimum, Enbridge Gas should share the draft work plan with OEB staff, the EAC and EC for comment. Continual improvement of DSM programs is important to ensure that they are continuing to provide the greatest level of value for ratepayers.

## Evaluation Governance Terms of Reference (“ToR”)

While the six main EM&V activities and their accountabilities are outlined above, multiple stakeholders are involved in these activities as part of the DSM evaluation governance process.

In order to ensure clear accountabilities and responsibilities, the Evaluation Governance Terms of Reference (“ToR”) helps ensure:

- Effective outcomes of the evaluation governance process, by ensuring roles, accountabilities and critical processes are established and clarified in advance, rather than being managed in-year on a case-by-case basis.
- Clarity and consistency when stakeholder members change. Changes can include new EC’s, OEB Staff, Enbridge Gas staff, non-utility stakeholders, and/or independent experts. This clarity and consistency support efficient use of DSM evaluation resources, resulting in efficient use of ratepayer funds.
- Reduced disputes between stakeholders during the DSM annual audit process and Enbridge Gas’s DSM Deferral and Variance Account Disposition application proceedings, by ensuring all stakeholders have clear and consistent understanding of the stakeholder process.

## 9. Input Assumptions and Adjustment Factors

Enbridge Gas relies on a series of input assumptions and adjustment factors to estimate energy savings, as well as calculate shareholder incentive, lost revenues, and cost effectiveness achieved through the design and implementation of DSM program offerings.

### Input Assumptions

Various assumptions are used at different stages of a multi-year DSM Plan. Assumptions such as operating characteristics and associated units of resource savings for a list of DSM technologies and measures are referred to as “input assumptions”.

For each applicable DSM measure, the following input assumptions are considered:

- Natural gas savings
- Electricity impacts
- Water impacts
- Estimated useful life
- Equipment cost

Input assumptions for applicable DSM measures are defined relative to a frame of reference (“base case” or “baseline”) which represents either the existing condition, the code compliant requirement, or the standard practice. Specifying input assumptions relative to a frame of reference can be characterized by four general decision types:<sup>11</sup>

- Early Replacement: a measure category where a utility energy efficiency program has caused a customer to replace operable equipment with a higher efficiency alternative (also referred to as advancement). *Example: An operating unit heater is replaced with a more efficient radiant heater.*
- Natural Replacement: a measure category where the equipment is replaced on failure or where a utility energy efficiency program has not influenced the customer decision to replace but once the decision has been made, the utility program influences a higher efficiency alternative. *Example: An operational gas water heater is replaced because of visible rust, and a more efficient water heater, promoted by the program, is installed.*
- New Construction: efficiency measures in new construction or major renovations, whose baseline would be the relevant code or standard market practice. *Example: A project design team, influenced by the program, specifies a high efficiency boiler rather than the least cost code compliant, or predominant industry practice, option.*
- Retrofit: a measure category that includes the addition of an efficiency measure to an existing facility such as insulation or air sealing to control air leakage. *Example: An ozone treatment system is added to an existing commercial laundry system in order to facilitate using lower water temperatures.*

## 9.2 Adjustment Factors

To ensure that the energy savings claimed from DSM program offerings reflect those which Enbridge Gas directly influenced and are appropriately captured, adjustments can be made to gross savings. Adjustment factors may be applied to measures, and can include:

- Net-to-gross adjustments, to account for free ridership and spillover.

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<sup>11</sup> OEB Natural Gas Demand Side Management Technical Resource Manual Version 5.0 (November 12, 2020)  
<https://www.oeb.ca/sites/default/files/OEB-Natural-Gas-DSM-TRM-V5.0-20201112.pdf>

- Verification adjustments, to account for verified implementation and persistence of measures, and verified savings claims.

### 9.2.1 Net-to-Gross Adjustments

Free ridership refers to savings claimed through a DSM program offering which would have occurred without intervention from the utility. In contrast, spillover refers to savings influenced by a utility's program-related information and marketing efforts but are not actually captured in the program. Net-to-gross adjustments reflect the program's savings ratio after consideration of free ridership and spillover effects (ex. Net-to-gross adjustment = 1 – free ridership adjustment + spillover adjustment).

Net-to-gross adjustments should be considered for reasonableness prior to the implementation of the Multi-Year Plan and annually thereafter, as part of the annual evaluation process. Any NTG assessment should include measurement of free ridership and consider the merits and value of studying spillover.

### 9.2.2 Verification Adjustments

Verification adjustments reflect post-implementation assessments that have been conducted to verify actual installation of measures, as well as validate the calculations and inputs used to estimate savings claims.

- Installation and persistence: For some program offerings, it may be prudent to assess whether the measures claimed were in fact installed and remained installed at the time of the annual audit process. For example, if a mass-market utility program offering involved the distribution of 10,000 thermostats, it may be prudent to understand how many of those thermostats were in fact installed and remained installed. If it is found that 5% of the measures were not installed, a 95% adjustment factor should be applied to the program's results.
- Savings claims: For programs where the utility collects site-specific inputs to develop a savings claim for the project, it may be prudent to conduct a post-implementation savings verification study to assess the reasonableness of those inputs. For example, if a custom project utilized a site-specific temperature input that was found to be inconsistent, and resulted in a 5% over-estimation of savings, a 95% adjustment factor would be applied to the project's results.

### **9.3 Changes to Input Assumptions and Adjustment Factors (Shareholder Incentive and Cost-Effectiveness)**

When input assumptions and adjustment factors are changed or updated, clear guidelines are needed to ensure the application of those changes (prospective vs. retroactive) are consistent and appropriate. The following paragraphs outline how changes to input assumptions and adjustment factors are applied.

#### **9.3.1 Retroactive Changes**

Retroactive changes are applied to the results of the program year being evaluated. Targets for the program year being evaluated will remain unchanged, while the change will be applied to the following program year's targets. For example, if a change is finalized by the Evaluation Contractor in mid-2024 as part of the evaluation of the 2023 program year, the change will be applied to the results of the 2023 program year. The 2023 program year targets will remain unchanged, while the change will be applied to the 2024 program year targets.

Retroactive changes are appropriate for factors that were directly within the utility's influence during the program year being evaluated. Specifically, any change to project-specific input assumptions are applied retroactively since those changes were developed by the utility during the program year in question. Additionally, any changes to NTG adjustments for offerings with one-to-one implementation approaches are applied retroactively since the utility had direct control of in-year application approvals for the offering.

Verification adjustments are retroactively applied for all situations.

Any changes to project-specific input assumptions resulting from changes to codes and standards will be included in both results and targets. This ensures targets are not inappropriately set based on outdated codes and standards. For example, if a code change comes into effect during the 2023 program year, the 2023 program year results and targets will be adjusted to account for the change to codes and standards.

#### **9.3.2 Prospective Changes**

Prospective changes are applied to the results and targets of the year following the year the change is finalized by the Evaluation Contractor. For example, if a change or update is finalized by the Evaluation Contractor in mid-2023, regardless of the year being evaluated, the change will come into effect as of 2024 for results and targets.

Prospective changes are appropriate for changes outside of the utility's direct influence during the program year. Any change to prescribed input assumptions are applied prospectively, since those changes are not controlled by the utility. Once the changes are known to the utility, the utility can plan accordingly and adjust as necessary for the following program year. Additionally, any changes to NTG adjustments for offerings with mass-market implementation approaches are applied prospectively since the utility cannot control individual in-year application approvals for the offering. Once a new NTG adjustment is known, the utility can adjust program parameters based on that information for the following program year.

Any changes to prescribed input assumptions (ex. TRM) caused by changes to codes and standards will follow the regular update process and policy for prescriptive input assumptions (i.e. applied to results and targets as of the year following the year the change is finalized by the Evaluation Contractor).

Table 1 provides a summary of when updates are treated as retroactive vs. prospective.

**Table 1: Retroactive vs. Prospective Application of Input Assumptions and Adjustment Factors to Results \***

| Timing             | Input Assumptions                                                                                            | Adjustment Factors                                                                                                                                                                                                                    |                          |
|--------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                    |                                                                                                              | NTG Adjustments                                                                                                                                                                                                                       | Verification Adjustments |
| <b>Retroactive</b> | Changes to project-specific input assumptions (ex. unique savings calculations determined by the utility) ** | Changes to NTG for offerings with one-to-one implementation approaches (e.g., Offerings where the utility has the ability to approve/reject individual projects in-year on a case-by-case basis).                                     | All adjustments          |
| <b>Prospective</b> | Changes to prescribed input assumptions (ex. TRM or Custom Measure Life Table)                               | Changes to NTG for offerings with mass-market implementation approaches (e.g., Offerings where projects are approved/rejected based on established program screening parameters, rather than by the utility on a case-by-case basis). | N/A                      |

\* Retroactive changes are applied to results of the program year being evaluated. Targets for the program year being evaluated will remain unchanged, while the change will be applied to the following program year's targets. Prospective changes are applied to results and targets of the year following the year the change is finalized by the Evaluation Contractor.

\*\* Code changes as outlined in the paragraph above would adjust targets in the same year in which they come into effect.

#### **9.4 Changes to Input Assumptions and Adjustment Factors (LRAM)**

The OEB has determined that lost revenues related to reductions in customer gas consumption as a result of DSM programming should not be a disincentive to delivering DSM programs. As such, the OEB established a Lost Revenue Adjustment Mechanism (LRAM). For the purposes of determining LRAM amounts, all input assumptions and adjustment factor changes will be applied retroactively to the year being evaluated, regardless of the approach used for the purposes of determining shareholder incentive amounts and cost-effectiveness described in Section 9.3.

In other words, the evaluation of the achieved results for the purpose of determining the lost revenue adjustment mechanism (“LRAM”) amounts should be based on the best available information which, in this case, refers to the updated input assumptions and adjustment factors resulting from the evaluation and audit process of the same program year.

#### **9.5 New Input Assumptions for Prescriptive Measures**

Enbridge Gas regularly conducts research to develop input assumptions for new prescriptive measures. Since the formal TRM update process and timelines are coordinated by the OEB (see Section 8.6), a significant gap can occur between the completion of Enbridge Gas’s new measure research and its formalization within the OEB’s TRM.

In order to allow for timely introduction of new prescriptive measures to customers, the currently established TRM process as described in the EC’s November 2, 2017 document (Technical Reference Manual Maintenance and Update Process) should continue, with updates made as needed.

### **10. Cost-Effectiveness Screening**

DSM programs should be screened using the Total Resource Cost-Plus (“TRC-Plus”) test. The TRC-Plus test measures the benefits and costs of DSM programs for as long as those benefits and costs persist. Under this test, benefits are driven by avoided resource costs, which are based on the marginal costs avoided by not producing and delivering the next unit of natural gas to the customer. Those marginal costs avoided include the natural gas commodity costs (both system and customer) and transmission and distribution system costs (e.g., pipes, storage, etc.). The marginal costs also include the benefits of other resources saved through the DSM program, such as electricity, water, propane, and heating fuel oil, as applicable. A 15% non-energy

benefits adder is applied to each of these avoided resource costs. The TRC-Plus test also includes benefits driven by reductions in carbon emissions saved through the DSM program. The 15% non-energy benefits adder is not applied to carbon benefits. TRC Plus calculations are detailed in Section 10.3 below.

Enbridge Gas should include the cost of carbon as part of avoided costs.

For a program to be deemed cost-effective, it must achieve a screening threshold benefit/cost ratio of 1.0 or greater. This shows that the benefits of the program are equal to or greater than the costs of the program. To recognize that the Low Income natural gas DSM program may result in important benefits not captured by the TRC-Plus test, this program should continue to be screened using a lower threshold value of 0.7. Low Income offerings that fail to meet a TRC-Plus cost-benefit ratio of 0.7 can still be applied for, and approval of these programs will be considered on their merits.

Some programs, such as market transformation and pilot programs are not amenable to a mechanistic screening approach and should be reviewed on a case-by-case basis instead. Among the programs amenable to a mechanistic screening approach, Enbridge Gas is expected to only apply for approval of programs that are cost effective as determined by the particular screening test.

### **10.1 Net Equipment Costs**

Net Equipment Costs relate to the costs of the more efficient equipment relative to the base case scenario. They include capital, installation, and where material, cost of removal less salvage value (e.g., in the case of a replacement), and operating and maintenance ("O&M"). As the TRC-Plus test assesses the benefits and costs of DSM programs from the perspective of the utility and participant, it does not differentiate between who (natural gas utility, customer, or third party) pays the cost of the equipment.

Net Equipment Costs can be either the cost difference between the more efficient equipment and a base measure (or the incremental cost) or the full cost of the more efficient equipment. When the investment decision is a replacement, the Net Equipment Costs will typically be incremental. For example, if a DSM program results in a high efficiency natural gas furnace being purchased instead of a standard model, the Net Equipment Costs would be incremental: they would be the cost differential between the two options. In contrast, retrofit and discretionary investments are typically associated with the full cost of the equipment. For example, if a DSM program results in a retrofit to improve the energy efficiency of an industrial process and, in the absence of such DSM

program, the status quo would have been maintained, then the Net Equipment Costs will be the full cost of the equipment. As these examples illustrate, Net Equipment Costs depend not only on the equipment costs but also on the costs that would have been incurred under the base case (i.e. in the absence of the DSM program).

A third type of equipment cost is the cost of the equipment that is assigned to a project when a replacement decision is done early, or advanced, because of a natural gas utility's DSM programming efforts. Early replacements occur when an older, but still working lower efficiency technology, is replaced with a more efficient piece of equipment. In these cases, Enbridge Gas should adjust both the equipment life and the project cost to reflect the advancement. This adjustment is akin to a net present value estimate.

O&M costs associated with the more efficient equipment are often not incremental (i.e., they would have been incurred under the base case anyway). However, there are some exceptions where the incremental O&M costs are significant, and these should be appropriately accounted for in the Net Equipment Costs. As a general rule, cost differential from the base case should be considered as part of the Net Equipment Costs for as long as they persist.

Free ridership and spillover effects, if applicable, should also be taken into account when calculating the Net Equipment Costs. A free rider is a "program participant who would have installed a measure on his or her own initiative even without the program."<sup>12</sup> In contrast, spillover effects refer to customers that adopt energy efficiency measures because they are influenced by a utility's program-related information and marketing efforts, but do not actually participate in the program. Net Equipment Costs associated with free riders are excluded from the TRC-Plus test.<sup>13</sup> However, as discussed in Section 10.2, all Program Costs associated with free riders should be included in the TRC analysis.

Spillover effects are essentially the mirror image of free ridership. Net Equipment Costs associated with spillover effects are included in the TRC-Plus test.<sup>14</sup> However, as

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<sup>12</sup> Violette, Daniel M. (1995) *Evaluation, Verification, and Performance Measurement of Energy Efficiency Programs*. Report prepared for the International Energy Agency.

<sup>13</sup> Eto, J, (1998) *Guidelines for assessing the Value and Cost-effectiveness of Regional Market Transformation Initiatives*. Northeast Energy Efficiency Partnership, Inc.

<sup>14</sup> Eto, J, (1998) *Guidelines for assessing the Value and Cost-effectiveness of Regional Market Transformation Initiatives*. Northeast Energy Efficiency Partnership, Inc.

discussed below in Section 10.2, there are no Program Costs associated with spillover effects.

Information sources for equipment costs vary. For residential equipment, retail store prices are appropriate sources of information for many technologies including appliances and “do-it-yourself” water heater or thermal envelope upgrades. It is common practice to specify an average price based on a sample of retail prices. For utility direct/install programs, it is appropriate to use the cost to the utility of bulk purchase of the equipment. For commercial and industrial equipment, cost data can be more complicated to acquire due to limited access and confidentiality concerns. For larger “custom” projects, invoices or purchase orders may be necessary to support the cost estimate. Net Equipment Cost estimates should be based on the best available information known to Enbridge Gas at the relevant time.

## 10.2 Program Costs

For the purpose of the TRC-Plus test, the Program Costs related to DSM programs include the following components:

- i) Development and Start-up;
- ii) Promotion;
- iii) Delivery;
- iv) Evaluation, Measurement and Verification (“EM&V”) and Monitoring; and
- v) Administration.

Of the above costs, only Start-up, Promotion, Delivery, and some Evaluation and Verification are applicable to programs. Other costs related to the design and the delivery of DSM program are appropriately considered at the DSM portfolio level. These include Development, some Evaluation costs, and Monitoring, Tracking and Administration costs. If certain costs are not assigned to an identified program, these costs should be accounted at the portfolio level.

Incentive costs are not included in Program Costs. Incentive costs may include cash incentives, in-kind contributions and/or tax benefits provided to participants to encourage the implementation of a DSM measure. Incentive costs are a transfer from a program-sponsoring organization to participating customers and consequently do not impact the net benefits or costs. As the TRC-Plus test assesses the benefits and costs of DSM programs, it does not differentiate between who (natural gas utility or third party) pays for the Program Costs. Program Costs components are further explained below.

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#### i) Development and Start-up Costs

A DSM program may involve start-up costs in its early stages. For example, there may be costs incurred to train staff in the use of the DSM program's equipment or techniques. In general, start-up costs are only a small component of the total costs in the life cycle of a DSM program.

#### ii) Promotion Costs

Promotion costs may be incurred to educate the customer about a DSM program and will vary by program type and level of promotional effort. The cost of promotion depends on the method employed, the market segment and the DSM measures promoted.

As noted above, incentive costs are not included in Program Costs since they do not impact the net benefit or cost.<sup>15</sup>

#### iii) Delivery Costs

Delivery costs include any costs related to the implementation of the program, other than utility staff. This includes costs related to specialized software, and monies to third-party delivery agents or business partners.

#### iv) EM&V and Monitoring Costs

There are two broad categories of evaluation activity: impact evaluation and process evaluation. Impact evaluation focuses on the specific impacts of the program – for example, savings and costs. Process evaluation focuses on the effectiveness of the program design – for example, the delivery channel. Some of these costs will be assigned directly to a specific program or multiple programs, while a portion of the costs are more appropriately assigned across all programs (i.e., at the DSM portfolio level).

EM&V and monitoring costs are incurred for systems, equipment and studies necessary to track measurable levels of program success (e.g., number of participants/installations, natural gas savings, Net Equipment Costs and Program Costs) as well as to evaluate the features driving program success or failure.

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<sup>15</sup> For clarity, while incentive costs are not included in the TRC-Plus test, incentive costs should be included in and reported as part of the Enbridge Gas's DSM program budget.

#### v) Administrative Costs

Administrative costs are generally the costs of staff who work on DSM activities. These costs are often differentiated between support and operations staff. Support staff costs are considered fixed costs or “overhead” that occur regardless of the level of customer participation in the programs. Operations staff costs are variable, depending on the level of customer participation. Enbridge Gas should include all staff salaries that are attributable to DSM programs as part of their Program Costs. For practical purposes, if certain administrative costs cannot be reasonably assigned to individual programs these costs should be accounted for at the portfolio level.

Program Costs should be considered as part of the TRC-Plus test for as long as they persist (e.g., monitoring and EM&V costs may be spread over a period of time).

All Program Costs associated with free riders should be included in the TRC-Plus analysis. Programs that have high free ridership rates will be less cost effective (as measured by the TRC-Plus test) since their Program Costs will be included in the analysis while their benefits will not.

The spillover effects are associated with customers that adopt energy efficiency measures because they are influenced by a utility’s program-related information and marketing efforts, but do not actually participate in the program. Accordingly, there are no Program Costs associated with the spillover effects.<sup>16</sup> If the spillover effects are considered, then programs that have high spillover rates will be more cost effective (as measured by the TRC-Plus test) since they do not have Program Costs while they generate benefits.

Program Cost estimates should be based on the best available information known to Enbridge Gas at the relevant time.

### 10.3 TRC-Plus Test Calculation

For screening purposes, the TRC-Plus test should be performed at both the program and portfolio level.

At the program level, the TRC-Plus test takes into account the following:

- Avoided Costs (including the cost of carbon);

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<sup>16</sup> An alternative way to explain this is that all Program Costs are allocated to program participants (including free riders) and there are no additional Program Costs generated by the spillover effect.

- 
- Net Equipment and Program Costs;
  - Adjustments Factors; and,
  - A 15% non-energy benefit adder applied to all avoided costs except avoided carbon costs.

The results of the TRC-Plus test can be expressed as a ratio of the present value (“PV”) of the benefits to the PV of the costs. For example, the PV of the benefits consists of the sum of the discounted benefits accruing for as long as the DSM program’s savings persist. The PV of the benefits therefore expresses the stream of benefits as a single “current year” value.

If the ratio of the PV of benefits to the PV of the costs (the “TRC-Plus ratio”) exceeds 1.0, the DSM program is considered cost effective as it implies that the benefits exceed the costs. An alternative way to consider the cost-effectiveness of a program under a TRC-Plus ratio threshold of 1.0 is to determine whether the TRC-Plus net savings (or net benefits) are greater than 0. The TRC-Plus net benefits are equal to the PV of benefits less the PV of costs.

To provide the OEB with an appropriate amount of information regarding cost-effectiveness, all programs should be screened with the TRC-Plus test. The TRC-Plus threshold test should be normally 1.0 for all programs amenable to this screening test, except the Low Income program. The following guidance offered by the OEB and outlined in the previous framework should continue:

Some programs, although beneficial when reviewed from a broader perspective, may not pass a cost-effectiveness screening threshold of 1.0. The Board will consider these programs on a case-by-case basis. To recognize that all programs may not pass the TRC-Plus test, the utility should ensure its overall DSM portfolio has a TRC-Plus ratio of 1.0 or greater. Further, since low income natural gas DSM programs may result in important benefits not captured by the TRC-Plus test, these programs should be screened using a lower threshold value of 0.70 instead, but also may be considered at a lower threshold.

The TRC-Plus ratio is expressed mathematically below:

$$TRC\ Plus\ Ratio = \frac{PV_{Benefits}}{PV_{Costs}}$$

Where

$$PV_{Benefits} = \left( \sum_{t=1}^N \frac{UAC_t + TC_t}{(1+d)^{t-1}} + \sum_{t=1}^N \frac{UAC_{at} + PAC_{at}}{(1+d)^{t-1}} \right) \times (1 + 15\%) + \sum_{t=1}^N \frac{UACar_t}{(1+d)^{t-1}}$$

$$PV_{Costs} = \sum_{t=1}^N \frac{PRC_t + PCN_t + UIC_t}{(1+d)^{t-1}}$$

And where,

*UAC<sub>t</sub>* = Utility avoided supply costs (gas, water, electricity and other resources as applicable) in year t (see Section 11) Avoided costs should be calculated using the input assumptions, savings estimates, and adjustment factors based on the best available information known to Enbridge Gas at the relevant time, as described in Section 9.1 and 9.2.

*UAC<sub>at</sub>* = Utility avoided supply costs for the alternate fuel in year t

*UAC<sub>ar</sub>* = Utility avoided carbon costs in year t (see Section 11)

*TC<sub>t</sub>* = Tax credits in year t

*PAC<sub>at</sub>* = Participant avoided costs in year t for alternate fuel devices

*PRC<sub>t</sub>* = Program costs in year t (see Section 10.2)

Program Costs should be calculated using cost estimates and adjustment factors based on the best available information known to Enbridge Gas at the relevant time, as further described in Sections 9.2 and 10.2.

*PCN<sub>t</sub>* = Net Participant Costs

*UIC<sub>t</sub>* = Utility increased supply costs in year t

Utility supply costs should be calculated using cost estimates and adjustment factors based on the best available information known to Enbridge Gas at the relevant time

*N* = Number of years that the savings are expected to persist or that the incremental costs are expected to be incurred, whichever is greater.

*d* = Discount rate (see Section 11.1)

## 11. Avoided Costs

Assumptions relating to the benefit of not having to supply an extra unit of natural gas or other resource (e.g., electricity, heating fuel oil, propane, or water) through the delivery of DSM programs are referred to as avoided costs. Avoided costs are required to quantify the benefits for the TRC-plus test.

Avoided costs are long-term estimates forecasted over the lifetime of DSM measures and include:

- Avoided natural gas commodity costs
- Avoided natural gas upstream transportation and third-party services costs
- Avoided natural gas seasonal storage requirement costs.
- Avoided unaccounted for natural gas fuel losses
- Avoided natural gas downstream infrastructure costs <sup>17</sup>
- Avoided costs, other resources (electricity, heating fuel oil, propane, and/or water)
- Avoided carbon costs

### 11.1 Inflation Rate

In some cases, avoided cost estimates are required to extend beyond their forecasted periods. If necessary, a four-quarter moving inflation rate based on the Gross Domestic Product Implicit Price Index for Final Domestic Demand will be used, based on the most recently available information at the time avoided costs are updated.

### 11.2 Discount Rate

For the purpose of the cost-effectiveness test (i.e. TRC-Plus), the total avoided costs resulting over the life of the DSM measures need to be discounted to a present value. Consistent with the 2015DSM Framework, the discount rate used to determine the net present value of avoided costs over the lifetime of DSM measures is 4% (real).

## 12. Accounting Treatment

Consistent with past practices, recovery and disposition of DSM related amounts (i.e., DSM Variance Account ("DSMVA"), DSM Incentive Deferral Account ("DSMIDA"), and LRAM Variance Account ("LRAMVA")) will be filed annually by Enbridge Gas based on

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<sup>17</sup> For DSM this reflects passive avoided distribution costs driven by broad-based DSM programs, rather than active/geo-targeted avoided distribution costs unique to a specific initiative.

the final audited results of its DSM programs in relation to the annual plans targets. The DSM amounts should include program spending, shareholder incentive amounts and lost revenues in relation to the DSM programs delivered. Further, lost revenues will not act as a disincentive to Enbridge Gas's delivery of DSM programs.

Financial and accounting elements related to Enbridge Gas's DSM Plans (e.g., budget, shareholder incentive structure, LRAM, DSMVA) will be established at the outset of a multi-year DSM Plan with the intention of applying the same process throughout the duration of the multi-year DSM Plan. Amounts in all DSM variance or deferral accounts should be recorded on an annual basis.

In line with historical practice, Enbridge Gas should, where appropriate, use a fully allocated costing methodology for all DSM activities. Capital assets (property, plant and equipment) associated with the multi-year DSM Plan will be included in rate base and will be treated in the same manner as distribution assets. DSM expenses incurred should be expensed in the normal course of the gas utility's operations.

Cost allocation in rates should be on the same basis as budgeted DSM spending by customer class. This allocation applies to both direct and indirect DSM program costs.

Enbridge Gas should apply annually for the disposition of any balances in its LRAMVA and DSMVA and, as applicable, apply for the shareholder incentive amount associated with the previous DSM program year and disposition of resulting DSMIDA balance.

This application should include the final results as outlined in the Final Evaluation and Audit Reports, and information setting out the allocation across rate classes of the balances in the LRAMVA, DSMVA, DSMIDA and any other DSM related deferral or variance account approved by the OEB.

## **12.1 Revenue Allocation**

Any net revenues generated by a shareholder incentive for distribution rate-funded DSM should be separate from (i.e., not used to offset) the gas utility's distribution revenue requirement.

## **12.2 Demand Side Management Variance Account ("DSMVA")**

This account should be used to track the variance between actual DSM spending by rate class versus the budgeted amount included in rates by rate class. Enbridge Gas should apply annually for disposition of the balance in its DSMVA, together with carrying charges, after the completion of the annual third-party audit.

The actual amount of the variance versus budget targeted to each customer class will be allocated to that customer class for rate recovery purposes. If spending is less than what was built into rates, ratepayers will be reimbursed for the full amount. If more is spent than was built into rates, Enbridge Gas may be reimbursed up to a maximum of 15% above its DSM budget for the year. All additional funding beyond the annual DSM budget must be utilized on incremental program expenses only (i.e. cannot be used for additional overheads).

The option to spend 15% above the approved annual DSM budget is meant to allow Enbridge Gas to pursue programs which prove to be very successful. Accordingly, Enbridge Gas will be permitted to recover from ratepayers up to 15% above its total annual DSM budget amount recorded in its DSMVA provided that it has achieved its weighted scorecard targets (i.e., 100%) on unverified basis for the program(s) prior to additional spending being made on those programs; and, the DSMVA funds were used to produce results in excess of those targets (i.e., in excess of 100%) on an unverified basis.

When applying for disposition of its DSMVA account, Enbridge Gas will have to provide evidence demonstrating the prudence and cost effectiveness of the amounts spent in excess of the approved annual DSM budget. In considering the prudence of any spending in excess of an approved annual budget, the OEB will consider the information available to Enbridge Gas at the time the program was implemented.

#### **12.2.1. Deferred Participant Costs**

Some program designs result in future financial commitments related to participants. In some cases, participants will undertake activities that may take several years to complete and therefore requires the Company to make financial commitments beyond the current period. For example, a New Construction program allowing participants up to three years to complete the construction of their project and have the energy performance of the final build validated, prior to payment of their incentives. In this case, the future financial commitments Enbridge Gas would need to account for would be the total of the cost of the incentives and the cost to validate that the participant successfully fulfilled their obligations.

This need to account for future financial commitments was recognized by the OEB in its report at the Mid-Term Review of the 2015-2020 Framework, where the decision was to allow Enbridge to use the “DSMVA to track future financial commitments for programs with deferred customer incentives.”

Enbridge Gas proposes to utilize the same principle for future financial commitments of both incentive and program costs, or collectively Deferred Participant Costs (“DPC”). The DPCs should be tracked in the DSMVA and should only include directly identifiable costs tied to participant commitments forecast to occur in future period(s) and should not include any internal salary or overhead allocation. The intent would be to hold the funds associated with meeting a future program commitment at the time the participant signs up for the program. It is important that the funds are available for the Company to meet these commitments, especially for payments expected to occur outside of the DSM Plan term.

Enbridge should explicitly identify programs that require DPCs when they request approval for the program.

### **12.3 LRAM Variance Account (“LRAMVA”)**

The LRAMVA should be used to track, at the rate class level, the actual impact of DSM activities undertaken by Enbridge Gas from the forecasted impact included in distribution rates. Enbridge Gas may only record an LRAM amount in relation to DSM activities undertaken within its franchise area by itself and/or delivered for the gas utility by a third party under contract.

Enbridge Gas should calculate the full year impact of DSM programs on a monthly basis, based on the volumetric impact of the measures implemented in that month, multiplied by the distribution rate for each of the rate classes in which the volumetric variance occurred.<sup>18</sup> LRAM amounts are only accruable and thus only recorded in the variance account until such time as the OEB sets distribution rates for Enbridge Gas based on a new load forecast.

The LRAM amount is recovered in rates on the same basis as the variances in distribution revenues were experienced at the rate class level. The LRAM therefore results in a true-up for each rate class. Enbridge Gas should apply annually for disposition of the balance in their LRAMVA, together with carrying charges, after the completion of the annual third party audit.

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<sup>18</sup> Union 2014-2018 IRM (established in EB-2013-0202) states that LRAM is only applicable to the contract rate classes as volume variances for general service rate classes in the Union rate zones are captured in the Normalized Average Consumption (“NAC”) deferral account. Similarly, LRAM is only applicable to contract rate classes in the EGD rate zone, as volume variances for general service rate classes are captured in the Average Use True-Up Variance Account (“AUTUVA”).

## **12.4 DSM Incentive Deferral Account (“DSMIDA”)**

The purpose of the DSMIDA is to record the shareholder incentive amount earned by Enbridge Gas as a result of its DSM programs. This account will come into effect at the beginning of the term of the multi-year DSM Plan. Enbridge Gas should apply annually for disposition of the balance in their DSMIDA, together with carrying charges, after the completion of the annual third party audit.

Shareholder incentive amounts will be available in relation to the verified savings outlined in the Evaluation Contractor’s Final Evaluation and Audit Reports (as outlined in Section 8.4). In some instances, for offerings where results span multiple years, results may not be available in the year the program was delivered. For these programs shareholder incentives will be applied for and awarded when the results are finalized and evaluation results become available, if applicable.

Incentive amounts paid to Enbridge Gas should be allocated to rate classes in proportion of the amount actually spent on DSM activities on each rate class.

## **12.5 DSM Activities Not Funded Through Distribution Rates**

Any assets purchased with funds from third parties (i.e., not funded through distribution rates) will not be eligible for inclusion in rate base, nor will there be any distribution rate recovery of ongoing operating costs associated with the asset, or income taxes payable in relation to third-party funded activities. Likewise, DSM expenses funded by third parties should not be included in Enbridge Gas’s distribution accounts.

Any third-party funding for DSM activities (as opposed to rate-funded DSM activities) should be classified as Non-Rate Regulated Activities. Consequently, the financial records associated with third-party funding should be separate from those associated with Enbridge Gas’s distribution activities.

If Enbridge Gas receives third-party DSM revenues and incurs related DSM expenses and/or capital expenditures, these transactions should be recorded in separate non-utility distribution accounts. Sub-accounts may be used as appropriate to segregate these DSM activities from other Non-Rate Regulated Activities.