

**OEB STAFF SUBMISSION**

OEB Staff Submission on Enbridge Gas Distribution Inc.'s and Union Gas Limited's  
2015 to 2020 Demand Side Management Plans

OEB File Numbers:

EB-2015-0029 – Union Gas Limited

EB-2015-0049 – Enbridge Gas Distribution Inc.

**October 2, 2015**

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## Introduction

In response to the OEB's *Report of the Board: Demand Side Management Framework for Natural Gas Distributors (2015-2020)* (the DSM Framework) and Filing Guidelines to the DSM Framework, both issued on December 22, 2014, Enbridge Gas Distribution Inc. (Enbridge) and Union Gas Limited (Union) each filed DSM Plans proposing to deliver a suite of natural gas conservation and energy efficiency programs to their customers. Staff has provided submissions on the main elements of the gas utilities' applications in the sections below.

The table on the following page summarizes Staff's recommendations related to the items<sup>1</sup> included in the OEB's topics list as part of Procedural Order No. 1. A detailed discussion related to each topic is provided in the submission below.

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<sup>1</sup> Topic List Item #8 (Cost-effectiveness) and Item #10 (Accounting Treatment) have been discussed in the budget section of Staff's submission.

Topic	Staff Recommendation
1) Guiding Principles and OEB Priorities	The DSM Framework should provide significant persuasive authority, but it is not formally binding.
2) DSM Targets	<ul style="list-style-type: none"> <li>• Reject target adjustment proposals submitted by both gas utilities</li> <li>• Union only:               <ul style="list-style-type: none"> <li>- Include a small volume customer lifetime savings metric on the resource acquisition scorecard</li> <li>- Add a participant or applications metric on the low income scorecard</li> <li>- Include a market transformation scorecard for 2017-2020</li> </ul> </li> <li>• Provide revised 75%, 100%, and 150% target achievement levels for all metrics</li> <li>• Performance related to any individual metric should be capped at 150% of the weight of the metric</li> </ul>
3) DSM Budgets	<ul style="list-style-type: none"> <li>• Accept budget levels for 2015 to 2020</li> <li>• Recommendations made for major program budget items are detailed in Section 3.0</li> </ul>
4) Shareholder Incentive	<ul style="list-style-type: none"> <li>• Inflation should not have been applied to the 2015 shareholder incentive amounts</li> <li>• Eligibility for the Cost Efficiency Incentive (CEI) should be based on each gas utility achieving 100% of the annual overall lifetime natural gas savings across all scorecards</li> <li>• The calculation of budget amounts eligible to be carried forward under the CEI should include DSMVA related spending</li> <li>• The CEI should be accessible only when audited results are available</li> </ul>
5) Program Types	<p>Recommendations made for specific offerings:</p> <ul style="list-style-type: none"> <li>• Home Retrofit: adjust customer incentive approach based on size of the project</li> <li>• On-bill Financing: formation of working group</li> <li>• Union's Large Volume: proceed as proposed</li> <li>• Behavioural Offerings: modify to implement on pilot basis until mid-term</li> <li>• Union's Energy Savings Kits: reject this program due to market saturation and short-term savings focus</li> <li>• Market Transformation:               <ul style="list-style-type: none"> <li>- Union: continue with Optimum Home until 2020 and develop similar new construction offers to that which Enbridge has proposed</li> <li>- EGD: reduce maximum customer incentive of the Residential Savings-By-Design offering</li> </ul> </li> <li>• Both utilities should include a payback screening criteria to reduce free riders</li> <li>• Both utilities should investigate new measures, including advanced air and ground source heat pumps</li> </ul>
6) Program Evaluations	Accept the evaluation plans as filed but indicate that the evaluation plans are subject to any updates and revisions as developed by the OEB's new evaluation process.
7) Input Assumptions	Continue the practice of using the best available information from the evaluation and audit of programs to calculate both shareholder incentive and LRAM amounts, consistent with the DSM Framework.
9) Avoided Costs	<ul style="list-style-type: none"> <li>• Avoided costs calculations should be updated using an agreed on natural gas commodity price forecast and include the updated results in their revised DSM plans.</li> <li>• Reject GEC's proposal for additional avoided cost benefits</li> </ul>
11) Integration and Coordination	A new collaboration scorecard should be developed to motivate and incent the gas utilities to more fully pursue collaborative efforts with electricity distributors.
12) Future Infrastructure Planning	The gas utilities should work together and complete individual, but consistent, studies related to integrating DSM in infrastructure planning by the middle of 2017.
13) Other	<ul style="list-style-type: none"> <li>• Written comment process should be used to update DSM plans consistent with OEB findings</li> <li>• Suggestions for items to review at the mid-term review</li> </ul>

## **1.0 DSM FRAMEWORK AND GUIDELINES**

### **The Proper use of the *Report of the Board: Demand Side Management for Natural Gas Distributors***

#### **Background**

On April 10, 2014, the OEB initiated a process for the development of its new DSM framework. The purpose of the framework was to assist the utilities, the parties and the OEB in preparing, reviewing, and approving the utilities' 2015-2020 DSM plans. After holding a stakeholder consultation process, the OEB issued the *Report of the Board: Demand Side Management Framework for Natural Gas Distributors (2015-2020)* (the DSM Framework) on December 22, 2014.

Union and Enbridge are both proposing a number of departures from the DSM Framework, and Staff expects that a number of intervenors will do the same.

#### **OEB Staff Submission**

##### **Submission Summary**

Although the DSM Framework should provide significant persuasive authority, it is not formally binding on the panel. If a party is able to demonstrate that a different approach is preferable based on the evidence in this case, the panel can order something different from what is in the DSM Framework.

##### **Discussion and Recommendations**

The OEB held a thorough stakeholder consultation process for the development of the DSM Framework. The DSM Framework constitutes the OEB's policy in this area and serves, at a minimum, as the starting point for utilities' DSM filings.

Although the DSM Framework has significant persuasive value, it is not formally binding on the panel in the current proceedings. These applications are a "hearing" under the OEB Act, and a proceeding cannot be considered a hearing if all of the key decisions have already been made. If a party is able to convince the panel that the DSM Framework is not appropriate in some area, then the panel may order something different from what is in the DSM framework. However, there is nothing improper with the panel taking guidance from the DSM Framework provided its conclusions are not binding. As the Ontario Court of Appeal noted in *Ainsley Financial Corporation v. Ontario Securities Commission*:

The Commission has developed various techniques, including policy statements, designed to inform its constituency and further the goals described above. These non-statutory instruments have increased in

number and gained in prominence as securities regulation has become more complex and the problems to which the Commission must respond more diverse. Contemporary securities regulation involves an amalgam of statutory and non-statutory pronouncements and seeks to regulate by means of retrospective, ad hoc, fact-specific decision-making and prospective statements of policy and principles intended to guide the conduct of those subject to regulation.

...The jurisprudence clearly recognizes that regulators may, as a matter of sound administrative practice, and without any specific statutory authority for doing so, issue guidelines and other non-binding instruments.

Non-statutory instruments, like guidelines... are an administrative tool available to the regulator so that it can exercise its statutory authority and fulfil its regulatory mandate in a fairer, more open and more efficient manner.<sup>2</sup>

Indeed, the principle that the DSM Framework is not binding was recognized in the report itself:

While conforming to the DSM framework contributes to a streamlined approval process, gas utilities can propose alternatives in their plans, but they must present the evidence and rationale for any proposed alternative and clearly show how the public interest is enhanced. The Board will ultimately decide on the final elements and specific components of the gas utilities' new multi-year DSM plans through an application by the gas utilities for distribution rates under Section 36 of the *Ontario Energy Board Act, 1998*.<sup>3</sup>

The starting point for all elements of the DSM plans should be the OEB's DSM Framework. Although the DSM Framework should provide significant persuasive authority, it is not formally binding on the panel. If a party is able to demonstrate that a different approach is preferable based on the evidence in this case, the panel can order something different from what is in the DSM Framework.

## **2.0 DSM TARGETS**

### **Background**

Section 3.2 of the DSM Framework indicates that the OEB expects the gas utilities will rely on their most recent achievable potential studies, experience-to-date and projected

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<sup>2</sup> 1994 CanLii 2621 (C.A.), p. 6.

<sup>3</sup> Report of the Board, DSM Framework for Natural Gas Distributors (2015-2020), EB-2014-0134, p. 2

market opportunities and constraints to inform the development of their annual and long-term natural gas savings targets. The DSM Framework specifies three levels of achievement should be provided on the scorecard(s) for each metric: one at each 75%, 100% (target) and 150%.

The DSM Framework provides that up to 30% of a program’s budget can be transferred to another program without requiring additional approvals by the OEB. Additionally, utilities can exceed their annual budget by 15% if the program achieves 100% of its target, on a scorecard basis.

## Enbridge’s Proposal

Enbridge proposed targets for the 2015 program year, rolling forward its 2014 targets and using the methodologies proposed and accepted for the 2012-2014 program period, as directed by the OEB in the DSM Framework.

Enbridge developed its 2016-2020 targets based on its most recent potential study and related research; consultation with customers, business partners, and intervenors; past results and trends; the OEB’s guiding principles, key priorities, and budget guidance; and Enbridge’s knowledge of the market and customer base.<sup>4</sup>

Enbridge has proposed three scorecards for its 2016-2020 programs: Resource Acquisition<sup>5</sup>, Low Income<sup>6</sup>, Market Transformation and Energy Management.<sup>7</sup>

Table – Enbridge Gas Distribution Proposed Targets

<i>Resource Acquisition Scorecard</i>							
Metric	Units	Weight	100% of Target				
			2016	2017	2018	2019	2020
<b>Metrics and Targets</b>							
Large Volume Customers	CCM (millions)	40%	604	601	614	616	618
Small Volume Customers	CCM (millions)	40%	290	365	414	431	447
Residential Deep Savings	Participants	20%	7,508	10,000	12,346	12,948	13,478
<i>Low Income Scorecard</i>							
Metric	Units	Weight	100% of Target				
			2016	2017	2018	2019	2020
<b>Metrics and Targets</b>							
Single Family Ontario Building Code (Part 9)	CCM (millions)	45%	28.9	30.3	30.3	30.0	29.7
Multi-residential Ontario Building Code (Part 3)	CCM (millions)	45%	59.0	62.0	69.7	71.5	73.3
Low Income New Construction	Project Applications	10%	5.0	7.0	9.0	8.0	5.0

<sup>4</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p. 2

<sup>5</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.Staff.1, p. 96

<sup>6</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.Staff.1, p. 97

<sup>7</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.Staff.1, p. 98

<b>Market Transformation Scorecard</b>							
<b>Metric</b>	<b>Units</b>	<b>Weight</b>	<b>100% of Target</b>				
			<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Metrics and Targets</b>							
Home Health Report	CCM (millions)	5%	19.5	25.0	19.8	18.0	14.3
School's Energy Competition	Schools	5%	50	60	70	80	90
Run it Right	Participants	20%	75	86	99	114	131
Comprehensive Energy Management	Participants	20%	6	9	10	10	10
Residential Savings by Design	Builders	10%	30	20	22	23	25
	Homes Built	15%	2,501	2,250	2,295	2,341	2,388
Commercial Savings by Design	New Developments	15%	30	15	20	21	21
New Construction Commissioning	Enrollments	5%	20	26	28	28	28
Home Rating	Ratings	5%	596	808	982	1,128	1,252

### Adjustment Factor Methodology

Enbridge proposes to adopt a target adjustment factor (TAF) to adjust their lifetime natural gas savings targets annually based on changes to input assumptions, so that the same set of input assumptions are used to calculate the target, shareholder incentive, and LRAM in a given year.<sup>8,9</sup> Enbridge notes the TAF will adjust targets for input assumption updates resulting from annual audit recommendations and from current ongoing studies (e.g. the TRM and the NTG study) which are expected to have major impacts on the lifetime natural gas savings of the gas utilities' programs.

Enbridge is of the view that the input assumptions used to evaluate program savings should be the same set of input assumptions reflected in that year's target. In addition to impacts from current ongoing studies, Enbridge proposed this approach for its 2015-2020 DSM Plan because it is concerned that targets set for a period of six years may not remain appropriate if new information on input assumptions becomes available.<sup>10</sup> Enbridge noted that its proposal is consistent with the Guidelines as it will still use best available information to calculate LRAM and shareholder incentive, and that the DSM Framework and Guidelines do not preclude the proposal for a target adjustment mechanism.<sup>11</sup> Further, Enbridge indicated that in the absence of the TAF, Enbridge would need to mitigate the impact of input assumptions changes by proposing lower targets.<sup>12</sup>

### Target Achievement Level Structure

<sup>8</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4

<sup>9</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.5, p. 180

<sup>10</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.6, p. 145

<sup>11</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T2.EGDI.STAFF.8

<sup>12</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.6, p. 153

Enbridge has proposed target achievement levels for each scorecard ranging between 75% and 150%, consistent with the DSM Framework.<sup>13</sup> When asked by SEC during cross-examination how Enbridge would achieve 50% more target with only a 15% budget overspend allowed, Enbridge indicated that it will optimize its DSM activities where possible by being creative and innovative, considering collaboration, as well as allocating resources appropriately.<sup>14</sup>

## Union’s Proposal

Union proposed targets for the 2015 program year, rolling forward its 2014 targets and using the methodologies proposed and accepted for the 2012-2014 program period, as directed by the OEB in the DSM Framework.

Union used a detailed bottom-up analysis to develop its 2016-2020 targets based on Union’s experience; program potential and market opportunity; and the DSM Framework and DSM Guidelines. Union confirmed that its most recent achievable potential study, conducted in 2008, did not play a significant role in target development in the 2016-2020 Plan.<sup>15</sup>

The proposed scorecards for Union’s Resource Acquisition<sup>16</sup>, Low Income,<sup>17</sup> Market Transformation<sup>18</sup> and Performance-Based<sup>19</sup> programs are summarized below. No scorecard was provided for the large volume program, as discussed in section 5.2. Union has included a Market Transformation scorecard for 2016 only because the program will conclude at the end of that year, as discussed in section 5.5. Only 2016 targets are shown for the other scorecards, because Union has proposed to set their 2017 to 2020 targets using a formulaic approach.

Table – Union Gas Proposed Targets

<b>Resource Acquisition Scorecard</b>			
<b>Metric</b>	<b>Units</b>	<b>Weight</b>	<b>2016 Target</b>
<b>Metrics and Targets</b>			
Cumulative Savings	CCM (millions)	75%	1,110
Home Reno Rebate Participants	Homes	25%	3,000

<sup>13</sup> Enbridge Gas Distribution, EB-2015-0049, Application: B-1-4, pp. 8-33

<sup>14</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.5, p. 174

<sup>15</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab3, pp. 14-16

<sup>16</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.Staff.1, p. 99

<sup>17</sup> Ibid., p. 91

<sup>18</sup> Ibid., p. 91

<sup>19</sup> Ibid., p. 91

<b>Low Income Scorecard</b>			
<b>Metric</b>	<b>Units</b>	<b>Weight</b>	<b>2016 Target</b>
<b>Metrics and Targets</b>			
Single Family Cumulative Savings	CCM (millions)	60%	34
Social & Assisted Multi-Family Cumulative Savings	CCM (millions)	35%	15
Market Rate Multi-Family Cumulative Savings	CCM (millions)	5%	2

<b>Market Transformation Scorecard</b>			
<b>Metric</b>	<b>Units</b>	<b>Weight</b>	<b>2016 Target</b>
<b>Metrics and Targets</b>			
Homes Built	Builders	100%	Actual +20%

<b>Performance Based Scorecard</b>								
<b>Metric</b>	<b>Units</b>	<b>Weighting</b>					<b>2016 Target</b>	<b>2017-2018 Targets</b>
		<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>		
<b>Metrics and Targets</b>								
RunSmart Participants	Participants	50%	20%	10%	10%	10%	25	125% of Prior Year Actual
SEM Participants	Participants	50%	20%	10%			3	2+ Prior Year Actual
RunSmart Savings (%)	m3		60%	40%	40%	40%		10% Aggregate Participant Savings
SEM Savings (%)	m3			40%	50%	50%		2018: 5%; 2019-2020: 102% of Prior Year Actual

### Formulaic Target-Setting Target Adjustment Methodology

As shown above, Union proposed static<sup>20</sup> 2016 targets, for all but the market transformation scorecard. For 2017-2020, Union proposed a formulaic target-setting approach for certain metrics in all four scorecards.

The proposed formulaic target-setting approach is based on the previous year's performance. For the RA and Low-Income scorecards, the formula uses cost-effectiveness to calculate the natural gas savings target (i.e., prior year m<sup>3</sup> achievement divided by prior year budget spent multiplied by current year budget).<sup>21</sup> In addition to the Resource Acquisition and Low-Income lifetime natural gas savings targets, Union has proposed this formulaic approach to adjust the 2017-2020 targets for the Home Reno Rebate participants metric in the RA scorecard. For the Market Transformation and Performance-Based scorecards, previous years' achievement or participation rate is adjusted by a fixed percentage or number of participants.

Union noted that this formulaic target-setting approach was approved for the natural gas savings metric in the RA scorecard as part of the Settlement Agreement for its 2012-

<sup>20</sup> A "static target" refers to a target that is set once and not adjusted. This is opposed to a "formulaic target", which is annual adjusted based an established formula.

<sup>21</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, p. 13

2014 DSM Plan<sup>22</sup> and in the large volume scorecard from its 2013-2014 Large Volume Program.<sup>23</sup>

Union expects that changes to input assumptions resulting from ongoing studies (the Technical Reference Manual (TRM) and Net-to-Gross (NTG)) will be incorporated into targets through the formulaic target-setting approach. Any changes/updates to input assumptions resulting from the evaluation and audit of a given program year would be reflected in both the next year's targets and the next year's final savings results, but would not affect the current year target or savings results.<sup>24,25</sup>

Union also proposed that input assumptions be applied retrospectively for the purpose of calculating next year targets, but applied prospectively to lifetime natural gas savings achievement for the purpose of calculating the shareholder incentive, as discussed in Section 7.0.<sup>26,27</sup> As a result, if an annual evaluation and audit finds that updates to an input assumption result in lower savings, there would be no impact on the shareholder incentive for the year being audited, but the target for the year after would be easier to achieve.

At Staff's request, Union provided static 100% targets for 2017-2020 for the resource acquisition and low income score cards.<sup>28</sup>

### Achievement Level Structure

Union has proposed the upper level of target achievement to be 125% rather than 150% as specified in the DSM Framework. Union believes that a 150% target achievement level is too far from 100%, given the permitted 15% budget overspend available after a program achieves 100% of target. Union explained in an interrogatory response that if it had used a 75%/100%/150% scorecard design, the result would have been a lower 75% and 100% target level for each metric to ensure that the higher upper band level was attainable with the available budget.<sup>29,30</sup>

## **OEB Staff Expert Evidence**

### Target Adjustment Methodology

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<sup>22</sup> Union Gas Limited, 2013-2014 Large Volume DSM Plan, EB-2012-0337

<sup>23</sup> Union Gas Limited, 2012-2014 DSM Plan, EB-2011-0327

<sup>24</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.2, p. 40

<sup>25</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.GEC.31

<sup>26</sup> Ibid.

<sup>27</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.1 pp. 123-127

<sup>28</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.Staff.6

<sup>29</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, pp. 17-18

<sup>30</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.Staff.4, p. 1

Synapse indicated that it was unaware of any other jurisdictions where savings targets (and ultimately shareholder incentive) are adjusted in the manner proposed by Union and Enbridge. Synapse recommended that the OEB not approve both Enbridge's and Union's proposed target adjustment mechanisms and require them to set static five year savings targets with no adjustments during the course of the plan.<sup>31</sup> Synapse noted that maintaining targets throughout the course of the multi-year plan will encourage the gas utilities to reach their initial goals more creatively, investigate new measures, increase marketing, and/or implement other strategies that result in greater savings.

Synapse commented that Union's proposed approach is particularly problematic because it accounts not only for input assumption updates, but also changes in program effectiveness.<sup>32</sup>

### Metrics and Scorecards

In reviewing Union and Enbridge's proposed scorecards, Synapse noted that Ontario is one of the few jurisdictions proposing metrics such as number of participants, as opposed to solely resource savings. Synapse supported the inclusion of participant metrics.

Synapse also noted that Enbridge's RA scorecard includes lifetime savings metrics for both large and small volume customers, and recommended that Union develop similar metrics to bring focus to residential and smaller commercial and industrial customers.

In regards to Union's market transformation program, Synapse recommended that Union commit to continuing to support a residential new construction offering and including a scorecard.<sup>33</sup>

## **Green Energy Coalition (GEC) Expert Evidence**

### Appropriateness of Targets

GEC's expert witness evidence specified that the incremental annual savings forecast for Union and Enbridge equates to approximately 0.6% and 0.7% of annual sales to customers<sup>34</sup> respectively over the 2016-2020 period. GEC indicates that the projected annual savings levels proposed by Union and Enbridge are significantly lower than other leading jurisdictions such as Vermont, Massachusetts, Rhode Island and

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<sup>31</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, pp. 103-105

<sup>32</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 104

<sup>33</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 70

<sup>34</sup> Not including sales to electric generators.

Minnesota who have achieved average annual savings close to 1.2% of total sales.<sup>35</sup> GEC noted that annual savings could be higher in the event that the gas utilities' budgets were increased, Union maintained its large industrial program, less emphasis was placed on efficiency opportunities for smaller customers and the gas utilities provided more aggressive savings estimates.<sup>36</sup>

### Metrics and Scorecards

GEC also recommended a number of changes to the utilities' 2016 performance metrics and targets. GEC recommended the OEB limit the amount of achievement that any performance metric can contribute to a scorecard.<sup>37</sup> GEC suggested that the OEB cap the contribution any one metric to the overall scorecard target at 150% of that metric's target level. GEC noted that this would mitigate the risk of a gas utility "gaming" the scorecard structure with some metrics contributing disproportionately to the overall achievement of the overall scorecard.

## **OEB Staff Submission**

### **Submission Summary**

#### Appropriateness of Targets

Staff submits that the utilities 2015 targets should be accepted as filed.

OEB staff submits that the gas utilities should revise their 2016-2020 targets, based on the OEB's final decision on changes required to the DSM Plans. The utilities should use the best available information available on input assumptions when filing the revised targets.

#### Target Adjustment Methodology

Staff submits that the OEB should not approve the utilities' proposed target adjustment and formulaic target-setting mechanisms. Targets should not be adjusted throughout the term of the plans; however it may be appropriate to revisit them at the midterm review. As noted above, Union and Enbridge's targets should be updated to reflect the final OEB decision in this proceeding using the best information available at that time.

Having challenging firm targets for the duration of the DSM Framework requires the gas utilities to implement properly designed programs and delivery methods to be able to mitigate impacts on shareholder incentive that could result from the annual evaluation

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<sup>35</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 9

<sup>36</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 14

<sup>37</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 34

and audit of the programs. The utilities should continue monitoring program performance, updating program designs and making program adjustments as required throughout the term of the DSM Framework, rather than applying a target adjustment mechanism. OEB staff recommends that the static targets be revisited during the mid-term review.

### Metrics and Scorecards

Staff submits that metrics and scorecards proposed by the utilities are largely appropriate. Staff recommends that Union include a small volume customer lifetime savings metric on their resource acquisition card, add a participant or applications metric on the low income scorecard, and include a market transformation scorecard for 2017-2020.

### Achievement Level Structure

Staff believes that Union, similar to Enbridge, should provide revised 75%, 100%, and 150% target achievement levels for all metrics, consistent with the DSM Framework. Further, Staff submits that performance related to any individual metric should be capped at 150% of the weight of the metric.

## **Discussion and Recommendations**

### Appropriateness of Targets

As part of the Draft DSM Framework, the OEB suggested that annual DSM targets could be 0.8% of annual gas sales for each gas utility. The gas utilities' annual natural gas savings targets fall slightly below that level, as stated in GEC's evidence. Staff believes that the utilities' natural gas savings are largely appropriate given that the utilities have responded to the guiding principles of the DSM Framework and the departure from Union's capital incentive large volume program. The utilities are aiming to achieve increased cost-effective DSM savings by expanding residential programs and developing programs for small commercial/industrial customers; and they are achieving holistic long-term energy savings with their residential and market transformation programs. Also, the utilities have focused on promoting high customer participation levels by including participant metrics in their scorecards.

Staff has provided specific program design recommendations that further affect target levels which are discussed in Section 5 on program types.

### Target Adjustment Methodology

Target adjustments were not contemplated in the DSM Framework. The budget adjustment provisions provided for in the DSM Framework, including the ability to transfer 30% of a program's budget to another program without requiring additional approvals, and the ability to overspend a program's budget by 15% once the 100% target has been achieved, allow sufficient flexibility for the utilities to address changing conditions.

Enbridge and Union's proposed target adjustment approaches are not appropriate and should not be approved. Allowing for adjustments to targets for changing input assumptions, poor performance, or both, creates a number of problems in terms of fairness to ratepayers.

Enbridge's proposed approach to address only input assumptions and not program performance is problematic and does not encourage Enbridge to design robust programs that mitigate the impact of changing input assumptions. By adjusting both targets and achievement by new input assumptions and adjustment factors, the impact of changes to input assumptions is neutralized. In effect, the TAF allows Enbridge to continue to receive the same shareholder incentive regardless of how much natural gas was actually saved. Ratepayers may end up having to pay for natural gas savings that have not actually been achieved.

Union's cost-effectiveness adjustment, in addition to adjusting for input assumption changes, may provide a disincentive for the utility to achieve as much cost-effective DSM as possible in a given year, because the utility may want to avoid establishing more challenging targets the next year. Conversely, a poorly-performing program in one year will have lower targets the year after, which may result in Union achieving a shareholder incentive when it would not normally be appropriate to do so.

Staff notes that having static targets throughout the program delivery period is consistent with IESO's Electricity CDM targets. The OEB, as directed by the Minister of Energy, issued firm 2011-2014 electricity savings and peak demand targets to all licenced electricity distributors.<sup>38</sup> The provincial aggregate CDM targets were 6,000 GWh cumulative energy savings between 2011 and 2014 and 1,330 MW of persisting peak demand saved on December 31, 2014. These targets were not adjusted throughout the 2011 to 2014 period. Final results related to the 2011 to 2014 CDM Targets indicate that 109% of the cumulative energy savings target (6,533 GWh) and 70% of the persisting peak demand target were met. For 2015 to 2020, under the electricity Conservation First Framework, electricity distributors must meet a target of 7 TWh of electricity savings.<sup>39</sup> Additionally, static targets are consistent with the targets in

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<sup>38</sup> Ontario Energy Board, EB-2010-2015, CDM Code for Electricity Distributors

<sup>39</sup> Letter of Direction from Minister Bob Chiarelli to the Ontario Power Authority, March 31, 2014

the OEB's Electricity Distributor Scorecards that measure utility performance results. In both cases, the performance targets are set and are not adjusted for any factors.

Staff recommends that the static targets be revisited during the mid-term review.

### Metrics and Scorecards

The metrics proposed by the utilities are heavily weighted on lifetime natural gas savings, consistent with the DSM Framework. The market transformation scorecards proposed by the utilities include metrics such as number of participants, number of builders included in a new construction program and number of new buildings, which are appropriate given that market transformation programs result in longer-term savings. For this reason, Staff believes that the metrics proposed by the utilities are appropriate, with the following exceptions.

Given that the DSM Framework specifies that utilities should capture all cost-effective DSM that result in a reasonable rate impact, OEB staff agrees with several of Synapse's recommendations for Union. Specifically, OEB staff recommends that Union adopt a small volume customer metric in their RA scorecard. The threshold for a small volume customer should be recommended by Union, based on the gas consumption characteristics of their residential and small commercial and industrial customers. Additionally, Union should include a scorecard for the market transformation program for 2017-2020, as the OBC update is not expected to require significantly different metrics than were used in previous years.

### Achievement Level Structure

Staff disagrees that the 15% budget overspend provision directly correlates to moving from the 100% to 150% target achievement level for a given program. Instead, the gas utilities are expected to apply creativity and innovation to efficiently use program budgets throughout the program year, not just after reaching the 100% target achievement level. Staff believes that the gas utilities could achieve more than 100% target achievement level for programs where they are innovative and aim to achieve significant efficiencies in their delivery either by reducing costs or achieving more savings than estimated. Staff recommends that Union revise its targets to reflect the target achievement levels specified in the DSM Framework.

Staff is of the view that performance metrics should be capped at 150% of the target level. This recommendation was noted by GEC in its expert evidence.<sup>40</sup> Staff submits that by limiting the ability of the gas utilities to surpass a performance metric, the OEB can mitigate the potential for the final results from a lower weighted metric to increase

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<sup>40</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 34

the overall results for the scorecard. As an example, in the event that Union is unable to meet its 2016 cumulative savings metric (1,110M CCM) in its Resource Acquisition Scorecard, which has a weighting of 75%, but it is able to far surpass the 2016 Home Reno Rebate Participants metric (3,000), which has a weighting of 25%, Union can claim that it has met 100% of its weighted scorecard results and earn a shareholder incentive. Based on this scenario, Union would be eligible to earn a significant shareholder incentive when it has not achieved the main purpose of DSM, that being the overall reduction in natural gas usage. Staff is concerned that if a cap is not in place for individual scorecard metrics, there is the potential for ratepayer funds to be unreasonably used to provide the gas utilities' with a shareholder bonus for non-natural gas savings results. Staff is of the view that it is reasonable to cap the level at which any one metric can contribute to the overall scorecard results to ensure that the goals of the program are maintained, that the gas utilities are appropriately rewarded for success in the areas identified as goals, and to appropriately use ratepayer funds to administer the shareholder incentive.

### **3.0 DSM BUDGETS**

#### **Background**

Section 4 of the DSM Framework outlined the overall budget guidance the natural gas utilities were expected to follow when developing their DSM plans for 2015 to 2020. Section 15.1 of the DSM Framework discussed how the natural gas utilities should implement the OEB's guidance outlined within the DSM Framework in 2015, which the OEB indicated would act as a transition year to the new multi-year DSM plans.

The OEB determined that for DSM activities between 2015 and 2020, the gas utilities' annual DSM budgets should be guided by the simple principle that DSM costs (inclusive of both DSM budget amounts and shareholder incentives amounts) for a typical residential customer of each gas utility should be no greater than approximately \$2.00/month. Based on the \$2.00/month cost impact to a typical residential customer, and considering the general historic program mix and relative size of each utility, the OEB provided total maximum annual budget guidance of \$75 million for Enbridge and \$60M for Union, excluding the maximum shareholder incentive amount (\$10.45 million/utility/year). The 2015-2020 budget guidance results in annual budget amounts of approximately double the levels from 2012-2014.

In Section 15.1 of the DSM Framework, the OEB noted that the gas utilities should roll-forward their 2014 DSM plans into 2015, including budget parameters, and to do so in the same manner as they had done throughout the 2012 to 2014 DSM Framework. The OEB also indicated that the gas utilities may increase their overall 2015 spending by up to 15% to assist with incorporating and addressing the guiding principles and key priorities outlined in the DSM Framework.

## Enbridge's Proposal

### Enbridge's 2015 to 2020 Budgets

Enbridge's 2015 to 2020 budget amounts are outlined in the table below.<sup>41</sup> Enbridge has requested approval of a 2015 DSM budget of \$32.80 million.<sup>42</sup> Enbridge's 2015 budget has been calculated by applying a GDP-IPI escalation factor of 2% to its 2014 budget of \$32.16 million, consistent with the escalation factor that was applied to its 2013 DSM budget to determine the 2014 DSM budget.<sup>43</sup> Enbridge has also proposed an incremental budget of \$4.92 million (equal to 15% of its proposed 2015 budget) to address key priorities and objectives outlined in the DSM Framework. As of June 2, 2015, Enbridge had spent \$99,000 of its 2015 incremental funds.<sup>44</sup>

Table – Enbridge 2015 to 2020 Budgets

<b>Program/Budget Item</b> <sup>45</sup>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Resource Acquisition	\$19.2	\$34.6	\$40.1	\$45.1	\$46.0	\$46.9
Low Income	\$7.4	\$11.9	\$12.5	\$13.3	\$13.5	\$13.8
Market Transformation & Energy Management	\$6.2	\$13.5	\$17.1	\$17.2	\$17.5	\$17.9
Evaluation		\$1.5	\$1.7	\$1.7	\$1.7	\$1.8
Collaboration and Innovation		\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
DSM IT Chargeback		\$1.0	\$1.0	\$1.0	\$1.0	\$1.0
Energy Literacy			\$0.5	\$0.5	\$0.5	\$0.5
Incremental 2015 Budget	\$4.9					
<b>TOTAL</b> <sup>46</sup>	<b>\$37.7</b>	<b>\$63.5</b>	<b>\$73.8</b>	<b>\$79.7</b>	<b>\$81.3</b>	<b>\$82.9</b>

Enbridge noted that its 2016 to 2020 DSM portfolio has been developed to achieve and balance a number of objectives and the key priorities outlined in the DSM Framework, including: achieving high levels of natural gas savings, ramping up holistic programs, providing consumer education and offerings for small commercial and industrial customers, introducing and increasing data-driven offerings, avoiding lost opportunities, and collaboration and innovation. Enbridge noted that its 2019 and 2020 budgets should be viewed as preliminary, as factors may arise which change the priorities it will

<sup>41</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4, Pages 3-5

<sup>42</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 3, p. 5

<sup>43</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T3.EGDI.BOMA.11

<sup>44</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T3.EGDI.Staff.9

<sup>45</sup> Budget amounts are inclusive of overheads.

<sup>46</sup> Excluding the maximum annual shareholder incentive of \$10.45M

be asked to focus its DSM efforts going forward. Enbridge suggested reviewing the 2019 and 2020 budget amounts at the mid-term review.

### Enbridge – Sensitivity Analysis

Enbridge provided a high level sensitivity analysis related to its proposed budgets and natural gas savings through a hybrid top-down and bottom-up approach.<sup>47</sup> It considered three alternative budget scenarios for each year from 2016 to 2018: 75%, 125% and 150% of its proposed budget. Enbridge did not provide sensitivity analysis for 2019 or 2020 as it deemed these budget amounts preliminary.

As part of its sensitivity analysis, Enbridge identified DSM offerings that could be scaled according to budget. It found that 9 of the 18 offerings, or half, which span all customer sectors, contain metrics that could be scaled upward or downward depending on budget.<sup>48</sup>

In response to interrogatories from GEC<sup>49</sup>, Enbridge noted that it has incorporated a factor that lowers CCM saved per dollar spent (or a “decay factor”) as budgets increased to recognize the reality that the relationship between DSM budgets and targets is not a linear one. Enbridge further noted that it relied on its achievable potential study<sup>50</sup> as the basis for understanding and accounting for a reasonable correlation between increased energy savings and increased budget. Enbridge noted that for every 9% of budget increase, savings increased by 4%.<sup>51</sup>

### Enbridge – Cost Effectiveness

The table below outlines the overall cost-effectiveness of Enbridge’s 2016 to 2020 DSM plan.<sup>52</sup> Enbridge measured the cost-effectiveness of its DSM portfolio using both the Total Resource Cost-Plus Test (TRC-Plus Test) and the Program Administrator Cost Test (PAC) as directed by the OEB in the DSM Framework. Enbridge noted that it used this information as an important input in its overall portfolio design and that it has struck an appropriate balance between cost-effectiveness and meeting the OEB’s guiding principles and key priorities, many of which drive important activities which are less cost-effective than Enbridge’s past results.

Table – Enbridge’s 2016 to 2020 DSM Cost-Effectiveness

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<sup>47</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 5

<sup>48</sup> Home Energy Conservation, Large Volume Customer CCM, Small Volume Customer CCM, Low-Income (Part 3 CCM, Part 9 CCM, Low Income New Construction), Residential Savings By Design, Commercial Savings By Design, My Home Health Record, Run It Right, and Energy Literacy.

<sup>49</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T9.EGDI.GEC.19 & EGDI.GEC.42

<sup>50</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit C, Tab 1, Schedule 1

<sup>51</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T9.EGDI.GEC.42

<sup>52</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 3

Program / Sector	Cost-Effectiveness	
	TRC-Plus Ratio	PAC Ratio
Resource Acquisition	2.61	4.76
Low Income	1.28	1.40
<b>Portfolio Total</b>	<b>2.42</b>	<b>4.02</b>

### Enbridge - Bill Impacts

In total, Enbridge has requested the OEB to provide approval of approximately \$419 million in DSM program expenditures over the 2015 to 2020 period. The bill impacts for Enbridge’s customers in affected rate classes<sup>53</sup>, inclusive of the maximum shareholder incentive amounts available in each year, throughout the 2015 to 2020 period range from between 0.6% and 3.4%, with the average 2020 bill impact of approximately 2%.<sup>54</sup>

The table below outlines the average monthly bill impact a typical Enbridge residential customer will experience due to DSM costs. Two bill impact scenarios have been provided: one that includes the maximum shareholder incentive if Enbridge meets 150% of its targets, and another that includes the shareholder incentive if Enbridge meets 100% of its targets.

Table – Enbridge 2015 to 2020 Residential Monthly Bill Impacts

Incentive Level	Rate Class	Average Monthly Bill Impact of DSM per Customer					
		YEAR					
		2015	2016	2017	2018	2019	2020
150% Incentive	Rate 1	\$0.99	\$1.76	\$2.11	\$2.29	\$2.33	\$2.37
100% Incentive	Rate 1	\$0.85	\$1.61	\$1.96	\$2.13	\$2.17	\$2.21

## **Union’s Proposal**

### Union’s 2015 to 2020 Budgets

Union’s 2015 to 2020 budget amounts are outlined in the table below.<sup>55</sup> Union has requested approval of a 2015 DSM budget of \$34 million.<sup>56</sup> Union has proposed to update its 2014 budget (\$32.05 million) by an inflation rate of 1.68%, which is the four-

<sup>53</sup> There are no DSM impacts for the following rate classes: Rate 9, Rate 125, Rate 200, Rate 300 as EGD does not offer programs to customers in these classes.

<sup>54</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T2.EGDI.CME.10

<sup>55</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, p. 6 (Table 2)

<sup>56</sup> Ibid., p. 5

quarter rolling average GDP-IPI inflation factor at Q2 of 2014 that was agreed upon as part of the settlement agreement for its 2012 to 2014 DSM Plan.<sup>57</sup> Union has also proposed an incremental budget of \$1.4 million (equal to 4.3% of its 2015 budget) in 2015 to address key priorities and objectives outlined in the DSM Framework such as the integrated resource planning study, achievable potential study and updating its DSM tracking and reporting system. Union does not believe there is adequate time following the OEB decision on its 2015-2020 DSM Plan to fully spend a 15% incremental budget.<sup>58</sup> As indicated in its interrogatory responses filed on June 23, 2015, Union had spent \$53,000 of its 2015 incremental budget to begin implementing the items noted above.<sup>59</sup>

Union noted that it has addressed the key priorities and guiding principles outlined in the DSM Framework when developing its multi-year budget.<sup>60</sup> Union has included an inflation increase of 1.68% for each year of its new multi-year DSM plan, which it states is consistent with the 2012 to 2014 DSM plan (EB-2011-0327) Settlement.<sup>61</sup> Union noted that the inclusion of inflation in the budget was not contemplated in the DSM Framework.<sup>62</sup> Union noted that inflation has been included to account for increases in the prices for goods and services and that it has not impacted the proposed target setting methodology.<sup>63</sup> Union further noted that it will use its discretion when allocating the cumulative inflation to the various programs where required.<sup>64</sup>

Table – Union’s 2015-2020 Budgets

<b>Program/Budget Item</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Resource Acquisition	\$14.2	\$30.8	\$34.2	\$37.4	\$37.1	\$37.1
Low Income	\$6.8	\$11.3	\$12.3	\$13.5	\$14.1	\$14.9
Performance-Based		\$0.5	\$0.8	\$1.1	\$0.8	\$1.1
Large Volume	\$4.5	\$0.8	\$0.8	\$0.8	\$0.8	\$0.8
Market Transformation	\$1.4	\$1.0	-	-	-	-
Evaluation		\$1.3	\$1.3	\$1.3	\$1.3	\$1.3
Research		\$1.5	\$1.0	\$1.0	\$1.0	\$1.0
Administration <sup>65</sup>	\$3.3	\$2.9	\$2.8	\$2.8	\$2.8	\$2.8

<sup>57</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.LPMA.15

<sup>58</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.Staff.11

<sup>59</sup> Ibid.

<sup>60</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, p. 5 (Table 1)

<sup>61</sup> Ibid., p. 7

<sup>62</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.LPMA.18, (b)

<sup>63</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.LPMA.7, (c)

<sup>64</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.LPMA.18, (d)

<sup>65</sup> Union’s 2015 Administration amount reflects its 2015 Portfolio Budget.

<b>Program/Budget Item</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Pilots		\$1.0	\$1.0	\$0.5	\$0.5	\$0.5
DSM Tracking & Reporting System Updates		\$5.0				
Cumulative Inflation @ 1.68%	\$2.5	\$0.9	\$1.8	\$3.0	\$4.0	\$5.2
2015 Incremental Budget	\$1.4					
<b>TOTAL<sup>66</sup></b>	<b>\$34.0</b>	<b>\$57.2</b>	<b>\$56.0</b>	<b>\$61.4</b>	<b>\$62.4</b>	<b>\$64.7</b>

### Union – Sensitivity Analysis

In response to the OEB’s request for the gas utilities to provide sensitivity analysis showing how budgets and targets interact, Union provided three alternative 2020 budget scenarios (based on a 2020 budget of \$68.5 million which includes the maximum Demand Side Management Variance Account (DSMVA) 15% overspend amount, but does not include inflation):<sup>67</sup>

- 1) Reduced budget: \$56.3M (or equal to 2016 budget excluding inflation),
- 2) 2020 budget increased by \$5M: \$73.5M (or 130% of the 2016 budget), and
- 3) 2020 budget increased by \$10M: \$78.5M (or 140% of the 2016 budget).

As part of Union’s sensitivity analysis, it estimated the impacts of the changes in budget and identified the optimal areas of its DSM plan to allocate incremental budget amounts and savings across its DSM portfolio (e.g., what programs were in the best position to be increased). Union provided information related to the incremental number of projects, annual natural gas savings and incremental lifetime natural gas savings that resulted from its sensitivity analysis.

### Union – Cost Effectiveness

The table below outlines the overall cost-effectiveness of Union’s 2016 to 2020 DSM plan.<sup>68</sup> Union measured the cost-effectiveness of its DSM portfolio using both the TRC-Plus Test and the PAC Test as directed by the OEB in the DSM Framework.

Table – Union’s 2016 to 2020 DSM Cost-Effectiveness

<sup>66</sup> Excluding the maximum annual shareholder incentive of \$10.45M

<sup>67</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix G

<sup>68</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, Pages 23-24, 48-52, 62-63, 96-98

Program / Sector	Cost-Effectiveness	
	TRC-Plus Ratio	PAC Ratio
Resource Acquisition	2.30	6.78
Low Income	1.01	0.86
<b>Portfolio Total</b>	<b>1.99</b>	<b>5.18</b>

### Union - Bill Impacts

In total, Union has requested the OEB to provide approval of approximately \$336 million in DSM program expenditures over the 2015 to 2020 period.

Union noted that with the exception of Rate M7 (Large Volume Industrial and Commercial Contract Rate), the bill impacts associated with Union's DSM programs in other rate classes are consistent with the impacts to the average residential customer. Due to a discrepancy between the proportion of DSM costs in Rate M7 as compared to Rate M4 (Firm Industrial and Commercial Contract Rate) and Rate M5 (Interruptible Industrial and Commercial Contract Rate) as a result of rate class eligibility changes approved by the OEB in EB-2011-0210, effective January 1, 2014<sup>69</sup> Union does not feel that DSM costs representing 8.6% of a typical Rate M7 bill in 2020 is reasonable and it has proposed an adjustment to rectify this inconsistency. Union has proposed to pool the proposed DSM costs for rate classes Rate M4, Rate M5 and Rate M7 and reallocate the costs in proportion to 2015 approved billing units (e.g., natural gas usage levels) which results in similar proportions of DSM costs in all three rate classes.<sup>70</sup> Union is also proposing this approach for ratemaking purposes from 2016 to 2018. Union's pooling proposal lowers the proportion of DSM costs in Rate M7 from 9.4% to 4.6%, and Rate M4 from 4.6% to 4.1% and increases the proportion of DSM costs in Rate M5 from 2.6% to 4.4%.<sup>71</sup>

Throughout the 2015 to 2020 period bill impacts to Union's customers in affected rate classes will range from between a 0.1% and 4.6% increase, with an average 2020 bill impact of approximately 1.8% for Union North customers and 3.2% for Union South customers inclusive of the maximum shareholder incentive amounts available in each year and using Union's proposal to pool DSM costs for Rate M4, Rate M5 and Rate M7.<sup>72</sup>

<sup>69</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Page 69

<sup>70</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Page 72

<sup>71</sup> These impacts assume Union earns the maximum shareholder incentive at 150% of target.

<sup>72</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T2.EGDI.CME.10

The table below outlines the average monthly bill impact that a typical Union residential customer will experience due to DSM costs. Two bill impact scenarios have been provided for Union’s North (Rate 01) and South (Rate M1) residential customers: one that includes the maximum shareholder incentive available to Union, and another that includes the shareholder incentive if Union meets 100% of its targets.<sup>73</sup>

Table – Union 2016 to 2020 Residential Monthly Bill Impacts

Incentive Level	Rate Class <sup>74</sup>	Average Monthly Bill Impact of DSM per Customer				
		YEAR				
		2016	2017	2018	2019	2020
150% Incentive	Rate 01	\$1.95	\$1.98	\$2.23	\$2.29	\$2.36
100% Incentive	Rate 01	\$1.80	\$1.83	\$2.07	\$2.13	\$2.20
150% Incentive	Rate M1	\$1.76	\$1.79	\$2.01	\$2.06	\$2.12
100% Incentive	Rate M1	\$1.58	\$1.60	\$1.81	\$1.86	\$1.92

Union has indicated that Union North residential customers (Rate 01) who participate in a DSM program will see a \$0.29/month bill increase while Union South residential customers (Rate M1) who participate in a DSM program will see a \$0.69/month bill increase.<sup>75</sup> In response to technical conference questions from SEC, Union provided further clarification noting that the bill impact analysis is based on a very high cost for savings (\$0.88/CCM) related to Union’s residential behavioural program<sup>76</sup> as well as including the 300,000 customers per year who will receive behavioural program materials on the participants-side of the bill impact equation.<sup>77</sup> Staff has included further discussion related to Union’s behavioural program later in this submission.

## Expert Evidence

### OEB Staff Expert Evidence

In the Synapse expert evidence,<sup>78</sup> it was observed that both utilities are consistent with the OEB’s general approach of spending approximately 40% of the annual DSM budget on residential programs.

<sup>73</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.Staff.7

<sup>74</sup> Rate 01 includes residential customers in Union North; Rate M1 includes residential customers in Union South.

<sup>75</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix E, Schedule 4

<sup>76</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.SEC.31

<sup>77</sup> EB-2015-0029 / EB-2015-0049, Technical Conference Transcript, Volume 2, p. 199

<sup>78</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEB.Staff.1, pp. 6-14

The Synapse Report notes that Enbridge has higher overall costs but lower overall savings projections than Union, which results in a higher cost of energy saved (\$0.07/m<sup>3</sup>) than that of Union (\$0.05/m<sup>3</sup>). Further, the differences in the cost of saved energy can be explained by looking at the proposed programs from a customer sector point of view. Both utilities have 92% of customers are residential customers, while the remaining 8% are commercial and industrial (C&I) customers. However, Union's C&I customers comprise a much larger percentage of sales (77%) than Enbridge's C&I customers (59%). Therefore, the average Union C&I customer uses over twice as much gas (91,013 m<sup>3</sup> per year) as the average Enbridge C&I customer (40,761 m<sup>3</sup> per year).

The Synapse Report further observed that the proposed programs from both Enbridge and Union are robustly cost-effective over the term of the plan.

Finally, the Synapse Report notes that both utilities' budget allocations to the low-income sector are consistent with the OEB's historical requirement to spend at least 15% of the budget on the low-income sector.

### **GEC Expert Evidence**

The GEC expert evidence argued that the gas utilities should have higher budgets, up to at least double that of their proposed levels. GEC notes that the additional funding would provide significant additional natural gas savings.

GEC notes that the budget guidance provided in the OEB's DSM Framework may now be obsolete due to the Ontario provincial government announcing the development of a specific carbon emission reduction policy, including emission reduction goals, carbon pricing and a cap-and-trade policy.<sup>79</sup>

GEC further argues that the \$2.00/month bill impact guidance provided by the OEB in the DSM Framework, if assumed to be an appropriate limit, should be expressed as a \$2/month cap set such that the net impact on non-participants is \$2/month from the combined effects of DSM spending and system-wide benefits.<sup>80</sup> GEC outlines that the benefits of increased DSM spending include:

- Avoided carbon regulation costs
- Commodity price suppression effects
- Reduced purchases of higher priced gas, and
- Avoided capital investment in distribution system infrastructure

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<sup>79</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), p. 3

<sup>80</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), p. 4

GEC has quantified the efficiency benefits that put a downward pressure on rates and finds that the system-wide benefits that accrue to all gas ratepayers (both participants and non-participants) are more than 1.5 times greater than the DSM budgets necessary to produce the benefits for Enbridge and close to 2 times greater for Union.<sup>81</sup>

GEC does not believe that the gas utilities have done an adequate sensitivity analysis of alternative budget scenarios. GEC notes that neither utility has reported the impact of changes in spending levels on net economic benefits. Further, GEC notes that the sensitivity analysis provided by the utilities relies on unreasonable assumptions regarding administrative costs and the required effort to increase participation as well as flawed savings estimates.<sup>82</sup> GEC also notes that Enbridge's conclusions, and calculations made related to its decay factor, are inconsistent with the results of its potential study and the experience of leading jurisdictions.<sup>83</sup>

## **OEB Staff Submission**

### **Submission Summary**

Staff has summarized its submission with respect to the major budget items below. A more detailed discussion and Staff recommendations regarding each item follow.

#### 2015 DSM Budgets

Staff submits that the proposed 2015 budgets filed by both Enbridge (\$37.7M) and Union (\$34.0M) are reasonable and consistent with the DSM Framework which requires the gas utilities to roll-forward their 2014 DSM plans into 2015. Staff supports the approval of the 2015 budgets.

#### 2016 to 2020 DSM Budgets

Generally, Staff supports Enbridge and Union's proposed 2016 to 2020 total budgets as they are consistent with the budget guidance provided in the DSM Framework. Staff does not feel that a departure from the OEB's budget guidance is appropriate at this time. In the event that there are material impacts found from either the infrastructure planning study, achievable potential study or the province of Ontario's carbon emissions policy, the OEB should review the applicability and appropriateness of increases to the gas utilities' budgets at the mid-term review.

Where Staff has provided recommendations related to specific offerings for Enbridge and/or Union, and where those recommendations impact the proposed budgets of an

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<sup>81</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), p. 18 (Table 3)

<sup>82</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), p. 6

<sup>83</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), pp. 21-24

offering, Staff has included its submission on these requested amounts within the Section 5.2 – Summary – Program Budget Changes of this submission.

## **Discussion and Recommendations**

### Staff Submissions – Generic 2015 to 2020 DSM Budget Items

#### *Guiding Principles*

In response to the OEB's DSM Framework, the gas utilities have proposed incremental DSM budgets for 2015 to begin to implement and address the guiding principles and key priorities outlined in the DSM Framework. Enbridge has proposed a \$4.92M incremental budget while Union has proposed a \$1.4M incremental budget. In an effort to ensure there are no unexpected impacts on other rate classes and to ensure that these amounts are not used on other DSM programs, Staff recommends the OEB ring-fence the 2015 incremental budgets and indicate that approved amounts are only to be used on the items outlined by the gas utilities.

Further, both gas utilities have proposed budgets which will reach the maximum amounts outlined in the DSM Framework by the end of the 2015-2020 DSM term (i.e., \$75M/year for Enbridge and \$60M/year for Union). Staff is of the view that these proposals are reasonable as the gas utilities have provided plans that look to address most, if not all, of the key priorities and objectives of the DSM Framework. Staff has proposed some revision to the budget amounts proposed by both gas utilities for some offerings, but these recommendations do not have a significant impact on the overall annual budget proposals.

#### *Residential Budgets*

Both Enbridge and Union have followed the OEB's budget guidance outlined in the DSM Framework and have proposed budgets which result in proportional rate impacts for all customers and bill impacts close to the \$2.00/month threshold outlined by the OEB.

Staff does not believe it is appropriate at this time to incorporate any system wide benefits that may accrue to ratepayers, as GEC has suggested. Staff submits that the information required to accurately quantify the benefits that arise from DSM related to deferred capital investments, price suppression effects and avoided carbon emission costs is not available at this time. Although there may be some additional benefits accruing to ratepayers from these variables, the OEB cannot reasonably increase DSM budgets until further analysis and explicit government policy related to the cap-and-trade program, including the cost of carbon, is available. Staff recommends that the

OEB assess the reasonableness of the gas utilities' DSM budgets at the time of the mid-term review when it can fully consider all other factors.

Although the DSM impacts to residential customers are anticipated to rise above the \$2.00/month threshold outlined in the DSM Framework over the course of the term, Staff submits that the impacts are reasonable. The \$2.00/month cost threshold is not projected to be surpassed by either utility until the latter portion of the 2015 to 2020 term, when other benefits may be quantified and included in the cost per customer analysis. Additionally, the bill impacts (inclusive of the maximum shareholder incentive available) as a percentage of a customer's average annual bill across all rate classes do not appear unreasonable to Staff. On average, Union's customers will see monthly bill impacts ranging from 0.1% to 4.6%<sup>84</sup> while Enbridge's customers will see monthly bill impacts ranging from 0.7% to 3.4%.<sup>85</sup>

Staff submits that both Enbridge and Union have conducted their cost-effectiveness screening consistent with the DSM Guidelines. Staff is of the view that the proposed DSM plans are cost-effective. Staff notes that the bill impacts to all rate classes are generally proportional to the bill impacts for the gas utilities' residential rate classes. It appears as those classes who see the largest bill impacts are generally commercial and industrial classes who have a number of custom and prescriptive DSM offerings available to them to help address a variety of energy efficiency needs and opportunities.

### *Evaluation Budgets*

Evaluation budgets have been proposed by both Enbridge and Union. Staff submits that although the OEB will be taking a central role in evaluations, the proposed budget amounts are required to address OEB's program evaluations as well as utilities' process evaluation activities. Staff recommends that the OEB approve the amounts proposed by both Enbridge and Union, and establish a specific DSM evaluation variance account to track evaluation costs separate from other generic DSM deferral and variance accounts.

### *IT Budgets*

Both Enbridge and Union have proposed IT upgrade budgets. Enbridge has proposed a DSM IT Chargeback amount of \$1M/year from 2016 to 2020 (\$4M total)<sup>86</sup>, while Union has proposed a total of \$6M from 2015 to 2020 (\$1M in 2015 and a \$5M placeholder from its 2016 budget) for DSM system and software upgrades.<sup>87</sup> Staff supports both of the gas utilities proposals as the requirements to deploy a larger

<sup>84</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.Staff.7, Attachment 5, p. 5

<sup>85</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T2.EGDI.CME.10, p. 13

<sup>86</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T10.EGDI.STAFF.29

<sup>87</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T10.Union.Staff.30

program portfolio, as well as meet some of the OEB's guiding principles and key priorities (e.g., data-driven programs) requires sophisticated IT systems. Staff recommends that the OEB ring-fence approved IT upgrade amounts so that these budgeted amounts can only be used for the purposes of IT upgrades. As part of the gas utilities' annual reports, they should report on the spending to date and the associated milestones and good/services received. Any unspent amounts, as proposed by Enbridge through its DSM Information Technology Capital Spending Variance Account (DSMITCSVA), should be included in the gas utilities' annual clearance of DSM deferral and variance accounts and returned to ratepayers.

### *Achievable Potential Study*

Both Enbridge (\$50,000) and Union (\$200,000) have proposed budget amounts for the achievable natural gas conservation/energy efficiency study for 2015. The difference in proposed budgets is due to the fact that Enbridge has just completed its own achievable potential study which informed its 2015-2020 DSM Plan. Its proposed budget amount is to update the study which was completed by Navigant Consulting Ltd.<sup>88</sup>

Similar to the evaluation budgets proposed by the gas utilities, Staff submits that although the OEB will be taking a central role in the achievable potential study, the gas utilities will still be required to fund the potential study and have available budget amounts to facilitate the process. Staff recommends that the OEB approve the amounts proposed by both Enbridge and Union, and establish a specific DSM potential study variance account to track actual achievable potential study costs separate from other generic DSM deferral and variance account costs.

### Staff Submission – Enbridge's Proposals

Staff submits that the OEB should approve Enbridge's requested annual Innovation and Collaboration Fund with certain conditions, as recommended below. Enbridge notes that this is a new idea, with the fund proposed in response to the OEB's Guiding Principles #3 (coordination with electricity CDM) and #5 (programs that achieve high customer participation levels), as well as the key priority to develop new and innovative programs. Enbridge has requested an available budget to collaborate on pilot projects in the marketplace and notes that in order to collaborate with electricity distributors' developing new CDM programs; Enbridge is required to provide a contribution of time and money.<sup>89</sup> In response to interrogatories from Consumers Council of Canada (CCC), Enbridge noted that with requests to date for participation in pilots, spending may total in excess of \$250,000 in 2015. Enbridge further stated that it considers the

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<sup>88</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit C, Tab 1, Schedule 1, Navigant Consulting Ltd., Natural Gas Energy Efficiency Potential Study, Final Report, January 15, 2015

<sup>89</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 4, Schedule 2

fund to be ring-fenced, and that it intends to return unspent funds to ratepayers following the end of 2015.<sup>90</sup> Staff is concerned that Enbridge has not provided a detailed enough description of where it plans to use these budgeted amounts and that there is the potential that ratepayer funds may not be spent in a meaningful way. Enbridge provided criteria it uses to determine the initiatives that are eligible for funding in response to Vulnerable Energy Consumers Coalition (VECC) interrogatories<sup>91</sup>, which Staff has incorporated into its recommendation below. Staff recommends the OEB approve Enbridge's Collaboration and Innovation Fund, with the following conditions:

- 1) Ring-fence Collaboration and Innovation Fund amounts specifically for collaboration activities and programs with electricity CDM programs
- 2) Require Enbridge to perform a preliminary assessment using the criteria outlined below:
  - a. Has the initiative been endorsed/approved by the IESO?
  - b. Will it be straightforward to integrate/collaborate the initiative? (Ease in which gas and electric initiatives can be integrated)
  - c. Will the initiative address a new or unsaturated market opportunity?
  - d. Is the initiative innovative – either in approach or technology?
  - e. Does the initiative improve the customer's ability to access conservation programming?
  - f. Does the initiative broaden the reach of conservation programming?
  - g. Does the initiative aid in using program dollars more effectively?
  - h. Does a collaborative effort help the customer address all energy efficiency upgrades as possible?

Staff supports Enbridge's proposal to ring-fence the Collaboration and Innovation Fund as this will ensure these approved amounts are used specifically for collaborative efforts and not used for other DSM programs. Annually, Enbridge should be required to provide a detailed report and analysis on the use of the Collaboration and Innovation Fund, the pilots it has participated in, the number of electric distributors it has engaged and collaborated with, the number of offerings where both electricity and natural gas energy efficiency gains are promoted. At the mid-term review, the OEB will have the information it requires to assess whether there should continue to be a budget for collaboration and innovation activities.

### Staff Submission – Union's Proposals

#### M4, M5, M7 Pooling Proposal

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<sup>90</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T3.EGDI.CCC.16, p. 9

<sup>91</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T13.EGDI.VECC.29

Staff supports Union's proposal to pool the DSM costs of its M4, M5 and M7 rate classes and reallocate the costs in proportion to the 2015 approved billing units. Staff notes that customers in these three rate classes are similar and that they will all be able to participate in the same DSM offerings. Staff agrees that Union's proposal will more appropriately recover DSM costs from the appropriate customers.

### Residential Impacts

In response to interrogatories, Union indicated that an average Rate 01 residential customer in Union North participating in DSM will have a net bill increase of \$0.29/month. Union further indicated that an average Rate M1 participating in DSM residential customer in Union South will have a net bill increase of \$0.69/month<sup>92</sup> (for an average residential bill impact of \$0.49/month). Staff is of the view that although it appears as though the net impact for Union's participating customers may be violating the goal of energy efficiency programs, that being to help participating customers save both natural gas and lower their bill, Staff believes Union has displayed the impacts to participants in an overly conservative manner. Staff suggests that the inclusion of Union's 300,000 (annual) behavioural program customers have grossly understated the savings per participant. As part of Union's bill impact analysis, it shows average annual savings per residential participant in 2020 at 65 m<sup>3</sup>, which results in a monthly bill increase of \$0.29 for Rate 01 and \$0.69 for Rate M1 customers<sup>93</sup> (average of \$0.49 increase per month)<sup>94</sup>. By removing the 300,000 behavioural program customers from this calculation and the corresponding 5.82M m<sup>3</sup> of savings, the bill impacts per participant will be significantly altered as shown below. Union's other residential offerings: Home Reno Rebate and Energy Savings Kits have participation projections of 5,000 and 15,000 in 2020 respectively.<sup>95</sup>

Staff has conducted an analysis of the estimated net bill impacts to participants after removing the 300,000 behavioural customers and the corresponding savings from the behavioural program (but maintaining the costs of the behavioural program as they will still be required to be recovered). Staff has estimated that by removing the 300,000 behavioural program customers from the calculation the bill impact results are dramatically altered. The estimated average monthly net impact for the average Union participating residential customer is a bill decrease of approximately \$4.00/month as opposed to the average net bill increase of \$0.49/month provided by Union. Staff's estimated revised bill impact calculation for Union's residential customers compares favourably to the analysis provided by Enbridge, which shows that the average

<sup>92</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.BOMA.7

<sup>93</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix E, Schedule 4

<sup>94</sup> Based on average annual savings for residential customers of \$18.85 and average annual costs of \$24.75 for a net cost of \$5.90 or a monthly bill increase of \$0.49.

<sup>95</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, pp. 14-15

participating residential customer (after removing behavioural participants) will see an average monthly bill decrease of just under \$7.00.<sup>96</sup> Staff recommends that Union confirm Staff's interpretation of the impact of including the behavioural program customers in its bill impact calculations and provide a similar calculation to that provided by Enbridge.

### Annual Inflation Adjustment

Staff does not support Union's proposal to adjust its annual DSM budget for inflation. The DSM Framework does not discuss inflationary increases to the annual DSM budgets. Union noted that it has applied inflation consistent with the OEB's 2012 DSM Guidelines (EB-2008-0346).<sup>97</sup>

Staff is of the view that the gas utilities have been provided with a significant increase in DSM expenditures and Union should be able to successfully operate within its proposed budget, excluding inflation. Staff does not feel it is appropriate to apply inflation simply because this practice was accepted as part of the 2012 DSM Guidelines. The gas utilities have been provided the ability to significantly expand their DSM efforts and have the flexibility to do so at a pace they feel is reasonable over the course of the 2015 to 2020 term. Staff notes that Enbridge has not requested to include an inflationary increase to its annual budget. Further, Union has not provided any details where its inflation budget will be allocated or applied any impacts to its annual targets to reflect the fact that it will have additional funding available to it if approved.

## **4.0 SHAREHOLDER INCENTIVE**

### **Background**

Section 5 of the DSM Framework discusses the shareholder incentive available if the gas utilities are able to meet and exceed their annual targets. The OEB determined that an annual shareholder incentive of \$10.45M/utility will be made available annually and that the shareholder incentive will not increase due to budget increases or for inflation.

The OEB also made a cost-efficiency incentive available to the gas utilities. The gas utilities are able to use any unspent approved DSM budget amounts from one year in the immediately following year as incremental funds to the following year's approved budget if it has met its overall annual natural gas savings target. In the event a gas utility qualifies for a cost-efficiency incentive and carries forward unspent budget amounts from one year to the next, the OEB indicated that targets in the following year would remain unchanged.

### **Enbridge's Proposal**

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<sup>96</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J6.10

<sup>97</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.LPMA.18

For 2015, Enbridge has proposed to roll forward its 2014 maximum incentive (\$10.87M) into 2015 and adjusting for inflation. As a result, the proposed maximum shareholder incentive for Enbridge in 2015 will increase to \$11.09M.<sup>98</sup>

In response to the OEB introducing a cost-efficiency incentive, Enbridge has proposed to establish a DSM Cost Efficiency Incentive Deferral Account (DSMCEIDA) for each year of the new multi-year DSM Framework (i.e., 2015 to 2020). Enbridge proposes to record any amounts which become eligible to roll forward in this account after it has achieved its overall annual natural gas savings target on a pre-audit basis.<sup>99</sup>

### **Union's Proposal**

Similar to Enbridge, Union has proposed to roll forward its 2014 maximum incentive (\$10.82M) into 2015 and adjusting for inflation. As a result, the proposed maximum shareholder incentive for Union in 2015 will increase to \$11.00M.<sup>100</sup>

Union noted that it will strive to achieve the cost-efficiency incentive as outlined in the DSM Framework. If Union is unable to achieve its annual target, Union noted that it will refund any unspent DSM budget amounts through the DSMVA.

### **OEB Staff Submission**

#### **Submission Summary**

Staff is of the view that both Enbridge and Union have generally followed the OEB's guidance with respect to the treatment of the shareholder incentive. However, Staff submits that inflation should not have been applied to the 2015 shareholder incentive amount. Further, Staff submits that performance related to any individual metric should be capped at 150% of the weight of the metric.

With respect to the Cost Efficiency Incentive (CEI), Staff submits that eligibility should be based on each gas utility achieving 100% of the overall targeted natural gas savings across all scorecards. Finally, Staff submits that the calculation of budget amounts eligible to be carried forward under the CEI should include DSMVA related spending. Staff discusses these elements in greater detail below.

### **Discussion and Recommendations**

#### **Shareholder Incentive**

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<sup>98</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 3, pp. 4-5

<sup>99</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 6, pp. 2-3

<sup>100</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, p. 20

Staff submits that both gas utilities have proposed a shareholder incentive structure that is generally consistent with the OEB's guidance. However, Staff recommends one refinement to the shareholder incentive below.

Staff does not feel that it is appropriate for the gas utilities to apply inflation to the maximum shareholder incentive amount in 2015. In Section 5 of the DSM Framework, the OEB's determined that the incentive is not to be increased annually for inflation or be tied to the budgets. Although the OEB directed the gas utilities to roll forward their 2014 budgets, targets and shareholder incentives into the transition year of 2015, Staff does not feel that the intention was to provide the gas utilities with one final year of a larger incentive before ramping the amount back for the 2016 to 2020 period. Staff submits that as 2015 is a transition year, less overall DSM activity will be conducted and less activity towards meeting the key priorities and objectives of the DSM Framework will be put forth by the gas utilities if only due to smaller budgets. Staff submits that since less DSM activity will be undertaken in 2015 and that the OEB has indicated that inflation should not be applied to the shareholder incentive throughout the new multi-year term (and that a static maximum shareholder incentive of \$10.45M be made available annually), that it is not appropriate to use an additional amount of rate payer funds to increase the 2015 shareholder incentive for inflation. Staff submits that the maximum 2015 shareholder incentives should remain at \$10.87M for Enbridge and \$10.82M for Union. Staff notes that these amounts are still greater than that available from 2016 to 2020. As noted in the Draft DSM Framework, the jurisdictional review conducted by Concentric that compared the shareholder incentives available in other leading US jurisdictions with that available for Enbridge and Union found that the maximum available shareholder incentive in Ontario is much higher than any other jurisdiction included in the review.<sup>101</sup>

Staff is also of the view that performance metrics should be capped at 150% of the target level. This recommendation was also made by GEC in its expert evidence.<sup>102</sup> Staff provides more detailed discussion on this item in Section 2 – Targets.

### **Cost Efficiency Incentive**

There are a number of areas where Staff believes further guidance from the OEB will assist the gas utilities in appropriately applying the CEI throughout the new multi-year DSM term. Staff has provided below its recommendations related to the areas of the CEI it feels are important so that both gas utilities use the CEI in a consistent manner.

#### How to Qualify for the CEI

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<sup>101</sup> Review of DSM Framework for Natural Gas Distributors (Supplemental Report), Concentric Energy Advisors, September 15, 2014, pp. 19-21

<sup>102</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 7 and p. 34

Union noted that it believes the CEI is triggered once it has achieved the target incentive at 100% (or \$4.18M) which can be driven by any scorecard.<sup>103</sup> Section 5.2 of the Framework states:

“In the event that a gas utility is able to meet **its overall annual natural gas savings target**, the gas utility may choose to roll-forward and use any remaining approved DSM budget amounts in the following year with no subsequent impact on the approved targets for the following year.” (Emphasis added)

OEB staff submits that in order to qualify for the CEI, the natural gas utilities must have met their overall annual natural gas savings targets. Staff is of the view that the overall annual natural gas savings target is inclusive of all annual lifetime natural gas savings from all scorecards across the gas utilities’ DSM portfolio. Staff has provided its calculation of the gas utilities’ overall annual natural gas savings targets in the table below.

Table: Cost-Efficiency Annual Overall Natural Gas Savings Targets

<b>Portfolio Total Cumulative Cubic Metres (Lifetime) Natural Gas Savings</b>		
<b>Year</b>	<b>Enbridge</b>	<b>Union</b>
2015	774,359,281	N/A <sup>104</sup>
2016	1,001,743,852	1,161,124,553
2017	1,083,061,000	1,203,166,674
2018	1,147,902,770	1,249,450,353
2019	1,165,771,091	1,264,358,447
2020	1,182,290,348	1,280,059,007

Staff is of the view that by including the natural gas savings targets from all scorecards, the gas utilities are afforded some flexibility in achieving this overall natural gas savings target. The gas utilities have the ability to overachieve in one scorecard while possibly underachieving in another scorecard and still qualifying for the CEI based on its overall natural gas savings. Staff recommends that the OEB determine that the annual lifetime natural gas savings amounts be used as the target level when deciding if a gas utility has met the requirement of the DSM Framework and is eligible for a CEI. Staff suggests that in the event the OEB’s decision makes revisions to the gas utilities DSM plans, and the gas utilities are required to file updated plans, the amounts provided

<sup>103</sup> Union Gas Limited, EB-2015-0029, Exhibit JT2.21

<sup>104</sup> Union’s 2015 cumulative cubic metres target is the product of its formulaic method of calculating future year targets based on prior year performance. Union’s 2015 target will be available when its final audited 2014 results are filed.

above also be updated to reconcile with the DSM plan update provided by both Enbridge and Union.

### Timing of CEI Eligibility

Enbridge noted that it will record CEI amounts eligible to be carried forward into the following year after it achieved its overall annual natural gas savings target on a pre-audit basis. Staff is of the view that due to the possibility of adjustments to the overall savings results as a function of the evaluation and audit of the programs, it is inappropriate for the gas utilities to carry forward any eligible CEI amounts until the results have been audited. Staff recognizes that the final audited results of a program year typically are not available until the middle or third quarter of the following year. However, Staff submits that the gas utilities have been afforded significantly increased annual budgets to operate within. In the event that a gas utility has been determined eligible for the CEI following the final audit of program results, the gas utility will still have between three and six months to use the CEI funds to help meet and exceed its targets.

### Calculation of Eligible CEI Amounts

Union has proposed to calculate eligible CEI amounts as the total approved budget less the total actual spend, not including any amount spent from the 15% DSMVA allowance.<sup>105</sup> Staff does not support Union's proposed approach to calculate the CEI. Staff submits that any DSMVA amounts accessed by the gas utilities need to be included in the calculation of eligible unspent budget amounts. Since accessed DSMVA funds have the potential to be used to achieve the gas utilities' overall annual natural gas savings target, which is the requirement for being eligible for the CEI, DSMVA amounts need to be included in the eligible CEI calculation. Staff recommends that the OEB determine a gas utility eligible for the CEI if the following calculation results in remaining budget amounts:

Eligible CEI Amounts = Total Approved Budget – Total Overall Actual Spend (including DSMVA spending)

Further, Staff is of the view that it is reasonable that all unspent budget amounts, and not only those directly related to programs (as opposed to portfolio or administration budget amounts), should be eligible to be carried forward into the following year if eligible under the CEI. The OEB's direction in the DSM Framework related to the CEI was intended to act as an incentive to provide for greater flexibility and to reward the gas utilities for efficiently using its resources.

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<sup>105</sup> Union Gas Limited, EB-2015-0029, Exhibit JT2.21

Staff is of the view that any eligible CEI funds used in the following year should be able to be used at the gas utilities' discretion. To provide flexibility and an appropriate incentive for the gas utilities, Staff submits that there should be no boundaries placed on what programs eligible CEI funds must be used towards.

### Enbridge's DSMCEIDA Proposal

Staff is of the view that the DSMCEIDA that Enbridge has proposed is not needed. If eligible for the CEI, the gas utilities will simply carry forward the eligible funds for use in the following year. Further, Union has not proposed the establishment of such an account, rather stating that it does not anticipate disposing of the balance that would accumulate in this account directly to ratepayers on an annual basis but carry these amounts forward to the next year. Union simply proposes to capture any unused approved DSM budget eligible to be carried forward in a tracking account.<sup>106</sup> Staff submits this is an appropriate method to track eligible CEI amounts and supports Union's proposal to do so by way of an informal tracking account.

## **5.0 PROGRAM TYPES**

### **5.1 General Discussion**

Both Union<sup>107</sup> and Enbridge<sup>108</sup> have proposed a suite of energy efficiency offerings under the major program headings<sup>109</sup> outlined in Section 6 of the DSM Framework for the 2016-2020 period of their new DSM Plans. Offerings have been proposed for all types of customers that provide rebates for energy efficiency technologies, technical advice, operational improvements, energy audits, home and building envelope efficiency upgrades, building new energy efficient homes and buildings, and educational and training opportunities. The table below identifies the offerings proposed by the gas utilities.

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<sup>106</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T10.Union.Staff.29

<sup>107</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A

<sup>108</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 1

<sup>109</sup> Program Types include Resource Acquisition, Low-Income, Market Transformation, Large Volume and Performance-Based Programs. Within each larger program type are specific offerings.

ENBRIDGE GAS DISTRIBUTION		UNION GAS		Similar Offering
Resource Acquisition	Staff Discussion	Resource Acquisition	Staff Discussion	
1 Home Energy Conservation	Section 5.3	1 Home Reno Rebate	Section 5.3	Yes
2 Residential Adaptive Thermostats	No	2 Energy Savings Kit (ESK)	Section 5.5	No
3 Energy Leaders	No	3 Behavioural	Section 5.6	Yes
4 Commercial & Industrial Prescriptive (Fixed) Incentive	No	4 C&I Prescriptive	No	Yes
5 Commercial & Industrial Direct Install	No	5 Direct Install - Pilot	No	Yes
6 Custom Commercial	Section 5.9	6 C&I Custom	Section 5.9	Yes
7 Custom Industrial	Section 5.9			
8 Small Commercial New Construction	Section 5.8			
<b>Low Income</b>		<b>Low Income</b>		
9 Home Winterproofing	No	7 Home Weatherization	No	Yes
10 Low Income Multi-Residential – Affordable Housing	No	8 Multi-Family	No	Yes
11 Low Income New Construction	Section 5.8	9 Aboriginal	No	No
		10 Furnace End-of-Life Upgrade	No	No
		11 Large Volume	Section 5.7	No
<b>Market Transformation</b>		<b>Market Transformation</b>		
12 Residential Savings by Design	Section 5.8	12 Optimum Home	Section 5.8	Yes
13 Commercial Savings by Design	Section 5.8			
14 New Construction Commissioning	No			
15 My Home Health Record (Opower)	Section 5.6			
16 Home Rating	No			
17 Energy Compass	No			
18 School Energy Competition	No			
19 Run it Right	No	13 RunSmart	No	Yes
20 Comprehensive Energy Management	No	14 Strategic Energy Management	No	Yes
21 Small Commercial & Industrial Behavioural	Section 5.6			
22 Energy Literacy	No			
Indicates similar offerings				

Offerings that are similar in nature are highlighted above. There may be differences between similar gas utility offerings<sup>110</sup>, such as customer incentives available, eligibility requirements or energy efficiency technologies offered. Staff has provided a detailed discussion on the offerings with which it has concerns in the sub-sections below. Staff also discusses elements of some offerings in other sections of this submission. The sections where individual offerings are discussed are highlighted in the table.

As a general comment, Staff is of the view that the gas utilities' programs should be designed in a manner which reduces the reliance on free ridership rates. This will ensure that only those participants who are enrolled are truly customers who would not have undertaken the natural gas conservation or energy efficiency upgrades on their own. This program refinement should be a process that the gas utilities are continually

<sup>110</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T13.EGDI.EP.36, Pages 3-12

working on, with updates reported in their DSM Annual Reports and provided to the OEB at the mid-term review.

Staff recommends that the gas utilities, through the Evaluation Contractor and the EAC, further investigate the payback period for programs/measures directed to low-income, commercial and industrial customers to ensure that the appropriate programs are being delivered. This will provide the OEB with a sense as to the effective use of ratepayer funds in delivering DSM programs. Programs with significant payback periods (e.g., greater than 5 years) may be beneficial to the gas utilities' overall DSM portfolio, but are generally not the type of program that customers find the most attractive or useful.

## **5.2 Summary - Program Budget Changes**

Staff has proposed a number of budget changes throughout this submission. Staff suggests that in the event the OEB accepts Staff's recommendations, it adjust budgets as outlined below.

### Union Gas

Staff recommends that the OEB not approve two residential offerings proposed by Union: the residential behavioural offering (budget of approximately \$3 million/year for 2016-2020) and the Energy Savings Kit (ESK) offering (budget of approximately \$420,000/year for 2016-2020), as described in Sections 5.3 and 5.4. Staff suggests that this surplus budget of approximately \$3.42 million per year is shifted to the following offerings:

- Initiate a residential behavioural pilot offering, as described in Section 5.3. Staff estimates that the budget for this offering could be up to \$300,000 per year for 2015-2017, with the potential for full program rollout in 2018 depending on the results of the pilot.
- Continue the residential new construction program, Optimum Home, as described in Section 5.5. Staff estimates a budget for the continuation of the program of up to \$2 million/year from 2017-2020.
- Initiate a commercial new construction offering, with an estimated budget of \$1 million/year from 2016 to 2020.
  - Consider additional new construction offerings such as New Construction Commissioning, Low-income New Construction, and Small Commercial New Construction, for implementation during the 2016-2020 program period.
- Implement billing system upgrades required to initiate an on-bill financing offer, as discussed in Section 5.1. Staff estimates that using up to \$100,000 per year for these upgrades is reasonable.

## Enbridge

Staff recommends that the OEB not approve the behavioural residential offering proposed by Enbridge (budget of approximately \$5.5 million/year for 2015-2020), as discussed in Section 5.3. Staff also recommends reducing the Residential SBD financial incentives (budget of approximately \$500,000/year for 2016-2020) as described in Sections 5.5. Staff suggests that this surplus budget of approximately \$6 million per year is shifted to the following offerings:

- Continue the residential behavioural pilot offering started in October 2014, as described in Section 5.3. Staff estimates that the budget for this offering could be to \$400,000 per year for 2015-2017, with the potential for full program rollout in 2018 depending on the results of the pilot.
- Initiate an on-bill financing pilot based on the Open Bill Access (OBA) program, depending on the findings of the working group, as discussed in Section 5.1.

## Remaining Funds

Staff recommends that Union and Enbridge be provided with the flexibility to allocate any remaining budget amounts (after addressing Staff's recommendations above) to enhance new or existing offerings provided that the gas utility supports its request(s) with sufficient justification in the updated DSM plan following the OEB's Decision.

In the event the OEB does not accept Staff's suggestions on where to use funds for programs that are not approved, Staff suggests the OEB consider not re-allocating the funds and simply approving slightly smaller overall budgets, ensuring approved funds are used in a cost-effective manner that will benefit ratepayers.

### **5.3 Residential Home Energy Retrofit Programs**

Both gas utilities have proposed similar offerings for residential customers, but with different customer incentive models. Union's offering is titled Home Reno Rebate and Enbridge's offering is titled Home Energy Conservation.

#### **Union's Proposal**

Union's Home Reno Rebate offering<sup>111</sup> allows participating residential customers an opportunity to undertake an energy assessment (including a blower door test to measure air tightness), receive an energy efficiency report, the home's EnerGuide rating, and energy savings tips. Union makes building envelope rebates (air sealing, insulation) and energy efficiency product rebates (furnace, boiler, water heater, window, door or skylight) available. Customers are required to install at least two energy efficient measures to participate. A follow-up assessment is conducted after the

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<sup>111</sup> Union Gas Limited, EB-2015-0049, Exhibit A, Tab 3, Appendix A, Pages 3-8

customer has installed the energy efficiency equipment. Rebates ranging from \$40 (skylight) to \$1,500 (exterior wall insulation) are available as shown in the measure rebates table below.

Table – Union’s Home Reno Rebate Eligible Measures

Measure	Rebate	Description
Basement Insulation	\$1,000	For adding at least R23 to 100% of basement
	\$500	For adding at least R12 to 100% of basement
	\$800	For adding at least R23 to 100% of crawl space wall
	\$400	For adding at least R10 to 100% of crawl space wall
	\$450	For adding at least R24 to 100% of basement of floor above crawl space
Exterior Wall Insulation	\$1,500	Add at least R9 for 100% of building to achieve a minimum of R12
	\$1,000	Add at least R3.8 for 100% of building to achieve a minimum of R12
Attic Insulation	\$500	For increasing attic insulation from R12 or less to at least R50 from R12 or less
	\$250	For increasing attic insulation from R13 to R25 to at least R50
	\$500	For increasing cathedral/flat roof insulation by at least R14
Air Sealing	\$150	Achieve 10% or more above base target
	\$100	Achieve base target
Furnace/Boiler	\$500	For replacing low or mid-efficiency heating system with 95% AFUE or higher condensing natural gas furnace of 90% AFUE or higher ENERGY STAR ® condensing gas boiler
Water Heater	\$200	For replacing water heating with ENERGY STAR ® natural gas water heater with EF of 0.82 or higher
Window/Door/Skylight	\$40	For each window, door or skylight replaced with ENERGY STAR ® qualified model

To encourage the installation of multiple measures, Union provides a bonus rebate of \$250 for each measure installed beyond the first two. Starting in 2016, the maximum rebate payment for a customer is \$5,000 to encourage participants to address all energy efficiency opportunities available. Union targets having an annual average of approximately 4,400 participants in this program.<sup>112</sup>

### Enbridge’s Proposal

Enbridge’s Home Energy Conservation offering<sup>113</sup> aims to achieve similar goals to Union’s offering, requiring customers to complete a pre- and post-energy audit, and install at least two energy efficient measures<sup>114</sup> with the goal of achieving at least 15% gas savings per participant. Enbridge targets having an annual average of approximately 11,250 participants in this program.<sup>115</sup>

<sup>112</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, Page 14

<sup>113</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 1, Pages 22-27

<sup>114</sup> Eligible measures currently offered by Enbridge include: Heating system replacement, water heating system replacement, wall insulation, basement insulation, attic insulation, air sealing (minimum of at least 10% as measured by a blower door test), exposed floor insulation, drain water heat recovery system, and windows.

<sup>115</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T2.EGDI.EP.19

A major difference in the gas utilities' offerings is the manner in which customers receive incentives in Enbridge's offering. Enbridge has proposed a tiered incentive structure which provides up to \$500 for full (pre and post) energy audits and then increasing incentives based on the amount of annual gas savings as determined by Enbridge's natural gas modelling system:

Table – Enbridge's Home Energy Conservation Customer Incentives

Incentive Amount	Annual Gas Savings
Up to \$500	Full (pre and post) energy audits
\$500	15%-25%
\$1,100	26%-49%
\$1,600	50%+

### **GEC Expert Evidence**

In its evidence, GEC's expert observed that Union's participation levels for its Home Reno Rebate program is drastically lower than Enbridge's. GEC recommends that Union increase its participation levels to achieve greater levels of natural gas savings.<sup>116</sup> Union explained in cross-examination that Union is looking to extract more savings per home than Enbridge.<sup>117</sup>

Further, as part of its expert witness testimony, GEC's expert disagreed with the Synapse recommendation that the gas utilities' eliminate the requirement that participants must install a minimum of two eligible measures in the home energy retrofit programs. GEC noted that it is not very difficult to install two measures as many are related to each other. Further, GEC noted that the two-measure approach forces a more building science-centric approach.<sup>118</sup>

### **OEB Staff Expert Evidence**

In its report, Synapse noted that while the requirement to install at least two DSM measures as part of the home energy retrofit program encourages a deeper-savings approach, some customers may only consider installing one measure at a time due to cost commitments or other barriers. Synapse recommended the gas utilities consider revising the minimum requirement of installing two measures to be eligible for

<sup>116</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 21

<sup>117</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 11, pp. 151-152

<sup>118</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript Vol. 2, p. 59

participation so that the gas utilities do not miss opportunities for additional natural gas savings.<sup>119</sup>

Synapse recommended that both Union and Enbridge consider providing incentives such that they are structured on a per-square-foot basis, or on a percentage-of-total-project-cost basis. Such a structure would provide flexibility to the customer by allowing households of different sizes, housing shapes, and energy consumption levels to participate. Synapse noted that this may encourage a more holistic approach to savings, and that this approach is used for a similar program in Massachusetts.<sup>120</sup>

Synapse further commented that Union and Enbridge maximum incentive levels do not align, and that Enbridge should increase its offering incentive cap to be greater than \$2,000. Enbridge could be consistent with Union's incentive cap of \$5,000.<sup>121</sup>

## **OEB Staff Submission**

### **Submission Summary**

Staff submits that both gas utilities should review the customer incentive structures in these offerings to ensure they provide flexibility to the customers by allowing households of different sizes, housing shapes, and energy consumption levels to participate.

### **Discussion and Recommendations**

Staff notes although Enbridge and Union take different approaches to the number of customers they target and the method and amount of customer incentives they provide as part of their home energy retrofit offerings, the results of these expenditures appear to be very similar.

Union's Home Reno Rebate offering has an average annual budget of \$10.8M while producing an average of 114.3M cumulative m<sup>3</sup> of natural gas savings resulting in an average annual cost/CCM of approximately \$0.10/CCM. This compares favourably to Enbridge's Home Energy Conservation offering which has an average annual budget of \$16.5M while producing an average of 153.8M cumulative m<sup>3</sup> of natural gas savings resulting in an average annual cost/CCM of \$0.10.

Union has proposed to enroll an average of 4,000 participants each year, while Enbridge proposes to enroll an average of 11,250 participants each year. Staff is of the view that each gas utility has proposed offering designs based on past experience.

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<sup>119</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEBStaff.1, pp.1-32

<sup>120</sup> Ibid., p. 33

<sup>121</sup> Ibid., p. 36

Staff notes that the gas utilities are required to meet the proposed targets, which include metrics for both participation and natural gas savings levels, and that the gas utilities must optimize the offering designs in order to achieve the available shareholder incentives, as has been done in the past.

Staff has concerns about the incentive structures proposed by Union and Enbridge for these offerings. Staff agrees with Synapse that providing an incentive based on a per-square-foot basis, or on a percentage-of-total-project-cost basis for insulation measures, would be more equitable to households of different sizes, and would correspond better to the actual effort and cost expended by the customer. Therefore Staff recommends that Union and Enbridge adopt this approach for customer incentives in the Home Reno Rebate and Home Energy Conservation offerings.

Additionally, as highlighted by Synapse, Staff also notes that the maximum incentive levels provided in home retrofit offerings are significantly different, at \$2,000 for Enbridge and \$5,000 for Union. Staff submits that the gas utilities' home energy retrofit offerings have been designed by the gas utilities to specifically respond to their respective market conditions. However, the utilities are encouraged to review their program designs and conduct process evaluations of these offerings to determine if the incentive structures recognize the effort and cost investment made by participants, but have manageable impact on non-participant ratepayers.

## **5.4 On-bill Financing Background**

Section 6.2 of the DSM Framework outlined various key priorities that were identified in the Long Term Energy Plan (LTEP) and Conservation Directive. Key priority (b) refers to the development of new and innovative programs, including flexibility to allow for on-bill financing (OBF) options.

Both Enbridge and Union discussed OBF in their applications to the OEB.

### **Enbridge's Proposal**

Enbridge proposed to explore opportunities to incorporate the municipal Local Improvement Charge<sup>122</sup> within suitable DSM program offerings as Enbridge believes any OBF activities must not affect the risk profile of the utility.<sup>123124</sup>

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<sup>122</sup> Charges appear on a customer's property tax bill.

<sup>123</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 3, p. 2

<sup>124</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 3, p. 4

Enbridge offered OBF until 2000 as a convenient means for customers to pay for products and services offered as part of a retail business that sold and serviced equipment and appliances and a large scale water heater rental program. In 1999, Enbridge Gas Distribution had 38,000 customers that were participating in the program. In 2000, Enbridge Services acquired this business from Enbridge Gas Distribution and in 2002, this business was acquired by Direct Energy. Enbridge Gas Distribution presented Direct Energy's charges on their customers' bills until 2006, but it was called into question by the OEB in EB-2005-0001 / EB-2005-0437. The company was asked by the OEB to either provide a complete proposal regarding third party access, or set out how it intends to ensure its bill is separate from Direct Energy. The company responded with the Open Bill Access (OBA) proposal, which was negotiated, settled, and accepted by the OEB.<sup>125</sup>

Enbridge has offered the OBA program since 2007. The OBA program currently has approximately 83 third parties presenting their charges on Enbridge's customer bills, including 6 billers that offer financing for energy related products and services (e.g. Heating Ventilation and Air Conditioning equipment) purchased by that customer.<sup>126</sup> Enbridge indicated that to the degree that any DSM-specific OBF arrangement resembled or incorporated its current OBA service, the time and associated cost to implement such an arrangement may be reduced relative to a different approach or design.<sup>127</sup>

Enbridge explained during argument-in-chief that using the existing OBA program to create a DSM-specific OBF program would need to be further discussed with stakeholders.

### **Union's Proposal**

Union stated that it will not offer OBF in its DSM programs. Based on a customer survey<sup>128</sup>, Union reported that only 14% of residential customers and 23% of commercial and industrial customers cited access to financing options as extremely valuable in the undertaking of energy efficiency retrofits, as compared to 43% of residential customers and 59% of commercial and industrial customer who found rebates and incentives extremely valuable. The survey results were not broken down by target market.<sup>129</sup>

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<sup>125</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J6.11

<sup>126</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 8, p. 63

<sup>127</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J6.11

<sup>128</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T1.Union.Staff.1, Attachment 2, pp. 31-35

<sup>129</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 1, Appendix B

During cross-examination, Environmental Defence (ED) highlighted how Union's customer survey actually showed that more than 50% of Union's residential customers said access to financing options would be at least somewhat valuable. The survey further showed that 32% of residential customers and 49% of the commercial customers would be more likely to invest in energy efficiency upgrades for their homes or buildings if OBF with an interest rate of 5.5% was offered.<sup>130</sup>

In its application, Union proposed to investigate how to facilitate other financing options for customers through partnership and education, and to promote energy efficiency financing offered by third party vendors through bill inserts and a webpage.<sup>131</sup> Prior to preparing its application, Union investigated the feasibility of OBF and determined that a ratepayer-funded OBF program would cost approximately \$400,000 a year in human resources, legal, and financial administration costs, in addition to financial loans estimated at \$1M in 2015 and \$1.2M in 2019.<sup>132</sup><sup>133</sup> Union subsequently decided not to proceed with an OBF program in their application.

During its argument-in-chief, Union stressed that it was the only party that has conducted research into the effectiveness of an OBF program, and does not support OBF nor the development of an Ontario OBF working group.

### **OEB Staff Expert Evidence**

Synapse explained in their evidence that OBF has many benefits including enabling hard-to-reach customers to access DSM, such as low income, multi-family, and small business markets, and promoting more comprehensive upgrades. As a first step, Synapse recommended the formation of a financial working group to make recommendations for the development of a broader OBF program for Ontario. The financial working group could examine topics including how well existing financial offerings are meeting the needs of customers that participate in the gas utilities' programs, identification of additional sources of financing including third-party and ratepayers funds, and the value of offering financing to targeted customer segments.<sup>134</sup>

### **Environmental Defense Evidence**

ED highlighted a number of benefits that OBF provides, including facilitating low-interest financing by lowering the risk profile of borrowers since they are incentivized to repay the loan to maintain gas service. Further, ED discussed how OBF can increase the

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<sup>130</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T1.Union.Staff.1, Attachment 2, pp. 31-35

<sup>131</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 1, Appendix B, p. 3

<sup>132</sup> EB-2015-0029 / EB-2015-0049, Technical Conference, Vol. 1, pp. 123-124

<sup>133</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T1.Union.Staff.1, Attachment 3, p. 17

<sup>134</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 115

uptake of existing conservation programs, reduce cash-flow concerns, and provide lower interest rates through a subsidy where appropriate.<sup>135</sup>

## **OEB Staff Submission**

### **Submission Summary**

OEB Staff supports OBF as an important initiative to achieve cost-effective energy savings across Ontario. Staff submits that the gas utilities should be required to participate in an Ontario OBF working group. The working group should be asked to initially explore: OBF through Enbridge's OBA program, what programs and customer segments to target, the feasibility of offering low- or no-interest financing options, and, the feasibility of Union updating its billing systems to offer similar OBA and an OBF option. Staff discusses the rationale for this submission and provides further details and recommendations below.

### **Discussion and Recommendations**

The OEB indicated in the DSM Framework that it expects the gas utilities' multi-year DSM plans to enable the delivery of results in areas which have been identified as key priorities in the LTEP and the Conservation Directive. One of these key priorities is the development of new and innovative programs, including flexibility to allow for OBF financing options.

OEB staff agrees with Synapse's observations and recommendations, which are also supported by the benefits of OBF highlighted in ED's evidence.

Staff notes that in reviewing Union's customer survey data, although only 14% of customers cited financing options as extremely valuable, a total of 42% of residential and 67% of commercial and industrial customers indicate that access to financing option is at least somewhat valuable.<sup>136</sup> Within these customer segments, there are likely markets such as mid-to-low income, multi-family, and small business markets in which the majority of customers would find access to financing extremely valuable.

Staff also points out that according to the customer service rules included in the utilities Condition of Service policies that they have been approved by the OEB, the gas utilities are allowed to apply a customer's payment first to pay OBF and other third party charges and second on the natural gas charges. This would be a strong motivator for customers not to default on their OBF loans.

OEB staff notes that OBF can take several forms, including:

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<sup>135</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 12, p.84

<sup>136</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T1.Union.Staff.1, Attachment 2, pp. 31-35

1. Ratepayer-funded financing provided by gas utilities
2. Financing provided by third party financial institutions, such as banks or credit unions
3. Establishment of a ratepayer-funded revolving fund which would self-replenish by using re-payments of existing loans to provide new loans

Each of these financing options can either be offered at a market- or subsidized-interest rate. In the case of financing provided by third party financial institutions, the utility can buy-down the financial institution's loan interest rate using DSM funds.

Staff acknowledges that of the options shown above, the first exposes utilities to bad debt and therefore would not be the preferred option for Union and Enbridge, but that the second option of providing OBF through third parties could be implemented quickly given Enbridge's current OBA program. The third option of establishing a ratepayer-funded revolving fund could provide the same benefit and risk reduction as the second option, and would allow the utility to set eligibility criteria to optimize participation by customers in DSM, but would require higher DSM budgets.

Staff submits that the gas utilities should have an OBF program based on providing OBF through third parties or through a ratepayer-funded revolving fund (Option 2 or 3 above). As a first step, OEB staff supports the formation of an Ontario OBF working group. The working group will be asked to explore the following areas:

1. OBF for natural gas equipment through Enbridge's OBA program; including learning more about the existing third party lenders, types of equipment financed, conditions of participation / eligibility criteria, number and type of customers involved, default rates, interest rates offered, how DSM-based OBF could be incorporated into the OBA program, and whether any changes would be required to current billing agreements or regulatory instruments.
2. Appropriate programs and target markets for an OBF offering, and how well other energy efficiency financing mechanisms are currently working for customers participating in DSM programs.
3. The feasibility of offering low- or no-interest financing by using a rate-payer funded DSM budget to buy-down the interest rate offered by third party lenders.
4. The feasibility of Union upgrading their billing system to offer similar open bill access to that of Enbridge, including determining the estimated effort and cost associated with such an upgrade, and whether this upgrade would provide useful additional benefits beyond OBF for DSM, and what a suitable OBF program for Union's customers would look like.
5. How OBF can be used to address energy efficient electric equipment supported by CDM programs in collaboration with LDCs.

## 5.5 Union's Energy Savings Kit Offering

### Background

In Section 3 of the DSM Framework, the OEB noted that to ensure the gas utilities do not inappropriately dedicate resources to achieve shorter term savings results so that the 2020 goal is achieved, more focus and weight should be allocated to lifetime net savings, as these savings produce the greatest benefit to customers and the overall natural gas system. When discussing budgets, the OEB indicated that funding should be used to continue to transition programs from those which offer and focus on short-term benefits to primarily pursuing long-term natural gas savings.

### Union's Proposal

In its application, Union continues the Energy Savings Kits (ESK)<sup>137</sup> offering in 2015 as it carries forward its 2014 activities in accordance with Section 15.1 of the DSM Framework.

For 2016 to 2020, Union proposes to continue the ESK offering for the residential sector. The ESK units are proposed to be delivered for free to individually metered, residential customers with a natural gas water heater and furnace using door-to-door delivery and online orders. The programmable thermostat will continue to be bundled with the promotion of ESKs, whose costs and savings will count towards the ESK program costs and targets.

Union is of the view that the ESK offering strikes a balance between achieving all cost-effective DSM and minimizing lost opportunities. Union has considered its ESK program as an area for collaboration with LDCs, consistent with Section 12 of the DSM Framework. Although Enbridge ended its equivalent program by 2012, Union believes there remains the potential to pursue cost-effective savings over the next six years. Union indicates that the ESKs will complement other residential offerings such as its Home Reno Rebate and Behavioural offerings, and provide residential customers with broad access to DSM.<sup>138</sup>

### Budgets, Savings and Participants

Union proposes the following budget, savings, and number of participants for each year from 2016 to 2020.

Table – Union's 2016 to 2020 Budget, Participants and Savings<sup>139</sup>

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<sup>137</sup> An Energy Savings Kit contains: energy efficient showerhead, energy efficient kitchen aerator, energy efficient bathroom aerator, pipe wrap, Teflon tape, and a \$25 programmable thermostat rebate coupon.

<sup>138</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, p. 12

<sup>139</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A (inclusive of evaluation costs)

ESK Program	2016	2017	2018	2019	2020
Program Budget	\$ 422,618	\$ 420,618	\$ 419,618	\$ 419,618	\$ 419,618
Participants	15,000	15,000	15,000	15,000	15,000
Annual Savings (m3)	1,160,583	1,170,517	1,171,479	1,171,479	1,171,479
Lifetime Savings (m3)	11,990,584	12,089,924	12,099,542	12,099,542	12,099,542

A total of \$2.1 million has been budgeted for the ESK offering between 2016 and 2020, which is broken down into promotions (\$1.11 million), incentives (\$0.87 million) and impact evaluations on the ESKs (\$0.17 million) by 2020.<sup>140</sup> Union proposes to deliver 15,000 units each year, with savings increasing until 2018 and remaining flat until 2020. Through Union’s significant experience in delivering ESKs, it is able to deliver the offering very cost-effectively at an average TRC-plus test of 75 from door-to-door and online channels.<sup>141</sup>

## OEB Staff Submission

### Submission Summary

Despite the proven cost-effectiveness of the program, there is risk that the program has limited potential over the long-term framework given the ESKs have been delivered to 79% of the market.<sup>142</sup> As a result, Staff has concerns related to the forecasted savings from the ESK program over the next five years. Given the long history of ESKs in Union’s franchise area, Staff is of the view that the baseline has changed as consumers are already purchasing energy efficient measures on their own. Furthermore, as the ESKs are delivered for free, there is more than likely high free-ridership which raises significant concerns about the savings claimed and the offering’s cost-effectiveness. Based on the above rationale, Staff submits that the ESK program should be discontinued.

### Discussion and Recommendations

#### Market Potential, Savings and Baseline

Given the six-year plan set out in the DSM Framework, it is expected that the utilities will pursue opportunities and design programs that achieve deeper and holistic savings. Despite the ESK’s high cost-effectiveness, there is limited market and savings potential remaining for the program. This is supported by the fact that Enbridge ended its similar

<sup>140</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T5.Union.VECC.15

<sup>141</sup> This is the average TRC-Plus score of the ESK for the door-to-door and online delivery channels.

<sup>142</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T5.Union.Staff.21

offering, TAPS, in 2012<sup>143</sup> and that the market for showerheads and faucet aerators has been saturated since 2008.<sup>144</sup>

Union considers the remaining delivery channels including online and door-to-door approaches as the only appropriate delivery method remaining to achieve its ESK targets.<sup>145</sup> Staff is of the view that the gas utilities have done a good job delivering ESKs and other shallow measures to customers in the past to encourage early participation and develop a culture of conservation. In the context of the new Framework, Staff submits that these activities are no longer needed due to the customers' increased knowledge of their energy usage and significant benefits from the delivery of longer-life measures.

Furthermore, Staff is concerned with the reasonableness of net savings for programmable thermostats, whose incentive costs to customers that are offered with an ESK offering are material (at 40% of the overall program incentives each year).<sup>146</sup> Synapse recommends conducting a literature review or impact evaluation to determine whether there are any savings impacts related to standard thermostats to determine if the offering should be discontinued.<sup>147</sup> Staff's concern is also supported by Navigant's study that found that behaviour changes related to programmable thermostats yields only 2% gas savings.<sup>148</sup>

Because showerhead and faucet aerators can be easily installed, and based on the assumption that the baseline for home energy retrofits has improved over the last 15 years, Staff is of the view that customers are doing these types of retrofits on their own without an ESK offering. Staff submits that re-allocating the ESK offering's funds to other programs with more potential for deeper savings will be a better use of ratepayer funds.

### Enabling Broad Access to DSM

Although Staff recommends discontinuing the ESK offering, Staff recommends that some of the components of the ESK package, such as a showerhead, faucet aerator(s), pipe wrap, and Teflon tape be installed as part of any Union's Home Reno Rebate project.

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<sup>143</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T5.EGDI.BOMA.36

<sup>144</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p.40

<sup>145</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, p. 21

<sup>146</sup> Union Gas Limited, EB-2015-0029, Exhibit JT2.14

<sup>147</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 41

<sup>148</sup> EB-2015-0029, Exhibit B.T7.Union.CCC.25, p. 2

Furthermore, as Union has initiated discussions with the Independent Electricity System Operator (IESO) on promoting the ESK offering to the electricity distributors,<sup>149</sup> Staff suggests Union cancel the programmable thermostat promotion. Instead, Union and Enbridge should collaborate with the IESO and electricity distributors to deliver an adaptive thermostat offering that could achieve significant natural gas (space heating) and electricity (air conditioning) savings.

## **5.6 Behavioural Offerings**

### **Background**

The DSM Framework states that the gas utilities should design programs that achieve high customer participation levels, and that the utilities should implement DSM programs that are evidence-based and rely on detailed customer data.

In their applications, Union and Enbridge each proposed a residential behavioural offering with the objectives of achieving high participation levels, generating energy conservation awareness and literacy, and cross-promoting other DSM offerings. The proposed behavioural offerings will provide home energy reports to residential customers that compare their gas usage to similar homes in the same area. The ultimate goal of the offerings is to induce behavioural changes by the customer which will result in natural gas savings.

### **Enbridge's Proposal**

Enbridge's proposed residential behavioural offering is called My Home Health Record (MHHR).<sup>150</sup> Enbridge completed a pilot and proposed to move forward with a full offering from 2015-2020.

### **Pilot Program Results**

Enbridge conducted a pilot with Opower<sup>151</sup> between October 2014 and May 2015 with over 25,000 (high-use and low-income) participants.<sup>152</sup> The estimated average monthly gas savings for customers was 0.80% over the period.<sup>153</sup>

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<sup>149</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 1, Appendix C, p. 4 (This includes the potential of bundling the saveONenergy Retail Coupon offer with the ESK to be distributed by Home Reno Rebate service organizations)

<sup>150</sup> 70% was estimated by dividing 1.35 million (targeted) by approximately 2 million residential customers that Enbridge forecasted for 2018 (Exhibit B, Tab 2, Schedule 4, p. 9)

<sup>151</sup> Opower is a behavioural software vendor that prepares residential home energy reports for residential behavioural programs.

<sup>152</sup> Note that participants in the case of the offering are homes that receive a home energy report. All participants will have a clear method for opting out of the offer if they no longer want to receive the information (Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 1, p. 90)

<sup>153</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J8.4, Attachment, p. 18

## Proposed Behavioural Offering

Enbridge's proposed budget, savings, and number of participants from 2015 to 2020 for its residential behavioural offering are shown in table below.

Table – Enbridge's 2015 to 2020 Budget, Participants and Savings<sup>154</sup>

Enbridge	2015	2016	2017	2018	2019	2020	Total
Behavioural budget	\$ 2,650,000	\$ 3,910,000	\$ 6,910,000	\$ 6,910,000	\$ 7,060,000	\$ 7,210,000	\$ 34,650,000
Participants	500,000	1,000,000	1,000,000	1,350,000	1,350,000	1,350,000	1,350,000
Annual Savings (m3)	n/a	6,509,038	8,333,333	6,506,591	6,001,785	4,762,731	32,113,478
Cumulative Savings (CCM)	n/a	19,527,114	25,000,000	19,519,774	18,005,354	14,288,193	96,340,435
Residential budget		\$ 21,288,964	\$ 27,965,000	\$ 31,435,000	\$ 32,058,717	\$ 32,694,909	\$ 145,442,590
Total DSM budget		\$ 63,535,727	\$ 73,826,882	\$ 79,680,131	\$ 81,273,733	\$ 82,899,208	\$ 381,215,681

Enbridge proposed to work with OPower as its selected behavioural software service provider.

## Offering Participants

Enbridge has planned to reach approximately 70% (1,350,000) of its residential customers by 2018, starting with 500,000 participants to the offering in 2015, expanding by 500,000 new participants in 2016, and then expanding further to 350,000 in 2018.

## Budget and Savings

Enbridge proposes to spend 8% (approximately \$32 million)<sup>155</sup> of its 2016 to 2020 DSM budget, or 22% of its residential budget,<sup>156</sup> on the residential behavioural offering.

As shown in the table above, the offering budget increases almost every year, and the number of participants increase in 2016 and 2018, but annual and lifetime natural gas savings decline after peaking in 2017. Enbridge assumes participating customers achieve savings that persist for three years, and therefore customers that receive home energy reports starting in 2015 are not expected to achieve many additional savings in 2018 and beyond, despite continuing to receive home energy reports. Enbridge also explained that since they target the highest consuming residential customers first, the savings per household are expected to be lower for new customers joining the program in 2018.<sup>157</sup>

<sup>154</sup> References include EB-2015-0049, Exhibit J8.2; Exhibit I.T5.EGDI.EP.22; Exhibit I.T2.EGDI.STAFF.7. Residential Budget calculated as sum of residential program budgets in evidence.

<sup>155</sup> Note that, as shown in the table, Enbridge's offering starts in 2015 with a budget of \$2.65 million as part of its incremental budget, while this comparison focused on 2016-2020.

<sup>156</sup> Rate 1 class budgets (EB-2015-0049, Exhibit B, Tab 2, Schedule 4) as a portion of total DSM Budget.

<sup>157</sup> EB-2015-0049, Exhibit J8.2; Exhibit I.T5.EGDI.EP.22

## Offering Cost-Effectiveness

Enbridge has determined that this offering is cost-effective based on a TRC-Plus ratio of 1.14 for this offering.<sup>158</sup> Enbridge forecasts the savings to cost \$0.46 per CCM, inclusive of shareholder incentives, between 2016 and 2020.<sup>159</sup>

## Commercial Offering

Enbridge has also proposed a small commercial and industrial behavioural offering to be offered as a pilot in 2016. The proposed offering is similar to Enbridge's MHHR offering, with an initial pilot to 7,500 customers.<sup>160</sup>

## **Union's Proposal**

Union proposed to offer its residential behavioural offering from 2016 to 2020.

## Proposed Behavioural Offering

Union's proposed budget, savings, and number of participants from 2016 to 2020 for the behavioural offering are shown in table below.

Table – Union's 2016 to 2020 Budget, Participants and Savings<sup>161</sup>

Union	2015	2016	2017	2018	2019	2020	Total
Behavioural budget	n/a	\$ 2,749,000	\$ 3,378,000	\$ 3,378,000	\$ 3,378,000	\$ 3,378,000	\$ 16,261,000
Participants	n/a	300,000	300,000	300,000	300,000	300,000	300,000
Annual Savings (m3)	n/a	n/a	4,051,007	5,570,134	5,823,322	5,823,322	21,267,785
Cumulative Savings (CCM)	n/a	n/a	4,051,007	5,570,134	5,823,322	5,823,322	21,267,785
Residential budget		\$ 13,187,000	\$ 15,349,000	\$ 17,845,000	\$ 17,845,000	\$ 17,845,000	\$ 82,071,000
Total DSM budget		\$ 57,254,000	\$ 56,049,000	\$ 61,424,000	\$ 62,464,000	\$ 64,714,000	\$ 301,905,000

Union had not selected a vendor to deliver the offering at the time its application was filed, and did not specify when a vendor will be selected, but worked with OPower to inform the design of the offering and establish savings estimates.<sup>162</sup>

## Offering Participants

<sup>158</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J8.9, p. 1

<sup>159</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J8.17

<sup>160</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 1, p.90

<sup>161</sup> EB-2015-0029, Exhibit A, Tab 3, Appendix A, p. 14-15; Union Gas Exhibit B.T5.Union.SEC.31,p. 2. Residential budget from Synapse, Exhibit M Staff UNION 18 Att1\_20150812.

<sup>162</sup> Union Gas EB-2015-0029, Exhibit A, Tab 3, Appendix A, p. 19

Union has planned to reach only 20% (300,000) of its residential customer base over the 2016 to 2020 period through its behavioural offering starting in late 2016, with the savings being realized from 2017 onwards.<sup>163</sup> This compares with the 70% participation in Enbridge's offering over the term of the plan. Union's proposed offering begins in 2016 with 300,000 participants without adding any new customers over the next five year period, in contrast to Enbridge, which starts with 500,000 participants in 2015 and adds new participants in 2016, and 2018.

### Budget and Savings

Union proposes to spend about 5% (approximately \$16 million) of its DSM budget from 2016-2020, or on average 20% of the residential budget, on the residential behavioural offering.

As shown in the table above, the number of participants remains the same throughout the program period, and the offering budget remains constant from 2017-2020. Union assumed that savings persist for one year,<sup>164</sup> however Union has estimated that annual savings increase each year from 2017-2019 without adding new participants. This is different than the three year savings assumed by Enbridge for the same offering. Union's savings estimates suggest that customers receiving reports will achieve higher annual energy savings after they have been receiving home energy reports for one or two years.

### Offering Cost-Effectiveness

Union's residential behavioural offering is not cost-effective based on the TRC-Plus test.<sup>165</sup> Union's forecast cost of savings is \$0.88 per CCM inclusive of shareholder incentives between 2016 and 2020,<sup>166</sup> which is approximately double that of Enbridge's behavioural offering.

### **OEB Staff Expert Evidence**

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<sup>163</sup> 20% was estimated by dividing 300,000 (targeted customers) by 1.4 million (total residential customers in Union territory) that is reported for 2014 (Exhibit A, Tab 1, Appendix A, Schedule 5)

<sup>165</sup> Union Gas, EB-2015-0029, Exhibit B.T8.Union.SEC.32: The TRC-Plus score for the offering was not reported.

<sup>166</sup> Union Gas, EB-2015-0029, Exhibit B.T3.Union.SEC.31, p. 2

Due to the size of the budgets proposed by Enbridge and Union, Synapse has recommended that the utilities assess whether the offering budgets can be reduced or at least be justified if the program budgets were to be approved.<sup>167</sup>

With respect to Enbridge's small commercial and industrial behavioural offering, Synapse suggested that Enbridge should ensure that OPower has the ability to individualize data for commercial and industrial customers, including types of industry and major energy uses. Synapse indicated that they are not aware of evaluations for energy report offerings for the commercial sector, and therefore the benefits have not been rigorously analyzed. Synapse suggested that this offering could be combined with Enbridge's existing Energy Compass offering, which offers a free diagnostic service and performance report to commercial and industrial customers, subject to evaluation.<sup>168</sup>

## **OEB Staff Submission**

### **Summary of Staff Submission**

Staff proposes that the OEB modify the behavioural offerings as filed. The proposed offerings' budgets are too high and the cost-effectiveness results of the offerings are divergent. The inconsistencies in the cost and savings assumptions have led Staff to believe that the behavioural offerings proposed should be re-assessed.

Staff requests that rather than launching these offerings, Enbridge and Union should cooperate in undertaking a two-year pilot to develop better multi-year savings based on actual measurement data.

Depending on the results of the pilot, utilities can develop a revised behavioural offering for review and approval by the OEB at mid-term review.

Staff submits that Enbridge's small commercial and industrial behavioural pilot should also not proceed until there is more evidence of the value of this offering.

### **Discussion and Recommendations**

Staff acknowledges the value of residential behavioural offerings in improving customer awareness of energy consumption, promoting energy efficient behaviour, and generating leads for other residential offerings. However, Staff submits that the residential behavioural offerings proposed by Union and Enbridge should not be approved due to major concerns with the budgets, savings assumptions, cost-effectiveness and participant ramp-up rates.

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<sup>167</sup> Synapse Evidence, L.OEBStaff.1, p. 72

<sup>168</sup> Synapse Evidence, L.OEBStaff.1, pp. 78-80

### Budgets

Synapse notes that the proportion of the utilities' DSM budgets allocated to residential behavioural offerings is significantly higher than other jurisdictions.<sup>169</sup> Staff submits that the residential behavioural offerings as proposed are not a good use of ratepayer funding.

### Savings Assumptions

Staff has observed that Enbridge and Union used different assumptions to calculate year-over-year savings resulting from their residential behavioural offerings, despite having worked with OPower to establish their savings estimates. As a result of the differing assumptions, Union anticipates saving achievement levels to rise without adding new participants. Enbridge assumes that savings will last for three years and anticipates that savings achievement levels will fall after 2017 while adding new participants in 2018. It is unclear to Staff why the savings estimates differ, and which approach is correct.

Staff is also of the view the behavioural savings are short-term savings. If the offerings were to cease beyond 2020, there is risk that most of the achieved savings would be quickly lost if customers do not continue receiving the energy reports. Furthermore, there is no guarantee there will be continued leads to other offerings beyond the period of the program, as there have been no independent evaluations that specifically analyzed the long-term effects of the promoted program lift.<sup>170</sup>

### Cost-effectiveness

Enbridge's behavioural offering was demonstrated to be marginally cost-effective while Union's behavioural offering was shown not to be cost-effective at all. The accuracy of the TRC-plus benefits is also questionable, given the inconsistency of the savings estimated by each utility. Additionally, Staff notes that the cost of delivering the behavioural offering for Enbridge is almost five times higher than its Home Energy Conservation offering, which costs just over \$0.10 per CCM.<sup>171</sup> The cost of the behavioural offering for Union is almost nine times higher than its Home Reno Rebate offering, which is also on average about \$0.10 per CCM over the six-year period.<sup>172</sup> School Energy Coalition noted during the technical conference that participants are

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<sup>169</sup> Synapse commented that Massachusetts' residential behavioural offering is 1.5% of their proposed budget, as opposed to 6% and 8% of the total budget for Union and Enbridge.

<sup>171</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J8.14

<sup>172</sup> Union Gas, EB-2015-0029, Exhibit B.T5.Union.CCC.26, Attachment 1

paying two to three times more for acquiring gas savings than purchasing a unit of gas.<sup>173</sup>

### Participant Ramp-up Rates

Although both utilities expect that the behavioural offerings can be used to cross-promote other offerings, they do not seem to have considered using a gradual participant ramp-up rate throughout the program period consistent with the DSM budgets available. As a result, Staff is concerned that the utilities could increase demand in other offerings such as home energy retrofits without having sufficient funds in those offerings to meet the demand.

### Pilots

For the reasons mentioned above, Staff submits that the gas utilities should cooperate in augmenting Enbridge's pilot and undertaking a two-year pilot to estimate savings based on actual measurement data. After the completion of these pilots, utilities could develop a revised behavioural offering for review and approval by the OEB at mid-term review. Staff recommends that the OEB require the utilities to address the following:

- Enbridge and Union to offer a joint offering design including a joint contract with a service provider;
- A gradual participation ramp-up rate that generates customer leads for other residential offerings that is consistent with the utilities' available budgets for those offerings;
- Coordination with the Ontario Government's Green Button Initiative that is planned to be implemented in the natural gas sector over the next two years;
- Cooperation with electricity distributors to move towards a coordinated CDM/DSM residential behavioural offering in which customers would receive a home energy report that includes both gas and electric consumption data and energy efficiency recommendations.

The results from the pilot will assist utilities in developing realistic multi-year saving estimates for their behavioural program, based on actual measurement data.

Both utilities should also analyze to what extent the residential behavioural offering generates leads for their other residential DSM offerings to determine participation ramp-up rates.

### Design of the Revised Offering

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<sup>173</sup> EB-2015-0029, Technical Conference, Transcript volume 2, pp. 199-200

If the pilots show that a residential behavioural offering is a cost-effective offering that helps cross-promote other offerings, OEB Staff submits that the gas utilities should develop a revised behavioural offering for review and approval by the OEB at mid-term review. The multi-year savings assumptions developed through the evaluation of pilot results should be used as the basis for the development of targets. Additionally, Staff recommend that the OEB require the utilities to address several aspects in the design of their revised offering.

#### *Joint offering delivery by the gas utilities*

In Argument-in-Chief, the gas utilities addressed the option of jointly delivering the behavioural offering. Utilities noted potential issues, including customer confidentiality and system integration, as barriers to joint delivery.<sup>174</sup>

Staff submits that a jointly-delivered residential behavioural offering for Ontario would enable the gas utilities to negotiate more flexible contract options, streamline future administration and marketing costs and eliminate potential redundancies.

#### *Participant ramp-up rates*

Based on the evaluation of the pilot's cross-promotional value, OEB recommends that the gas utilities develop gradual participant ramp-up rates that correspond to the budgets and participation levels for those other offerings.

#### *Green Button Initiative*

Both utilities have indicated in their applications that they are working with the Ministry of Energy on the Green Button Initiative. There are two components:

1. Utilities adopt a common data standard, to be made available to their customers in a standardized digital format;
2. Utilities allow consumers to authorize and direct secure transfers of their usage data for use in software applications.

Staff proposes that the gas utilities consider the data availability and data sharing platforms associated with the Green Button initiative in the development of the utilities' revised residential behavioural offerings, in order to avoid duplication and minimize costs.

#### *Working with electricity distributors*

In addition, Staff believes there is significant value in exploring a province-wide residential behavioural offering in collaboration with electricity distributors.<sup>175</sup> The gas

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<sup>174</sup> Union/Enbridge Transcript volume 13, pp. 17-19

utilities should address the design of the residential behavioural offering in their ongoing discussions with the electricity distributors to investigate the collaboration potential for an integrated electric and gas savings home energy report.

### Commercial and Industrial Pilot

Enbridge should not proceed with the commercial and industrial behavioural pilot in 2016 until the benefits of an energy report offering to commercial and industrial customers have been more rigorously analyzed. Instead, Enbridge should investigate the extent to which the objectives of this proposed pilot can be met through the Energy Compass offering, as recommended by Synapse.

### **Results**

Implementation of Staff's recommendation to not approve the behavioural offerings is anticipated to decrease Union's and Enbridge's annual budgets by \$2.7 – 3.4 million and \$3.9 – 7.2 million per year for 2016-2020, respectively. Staff has recommended options for how these surplus funds can be used to support other offerings at the beginning of Section 5.

## **5.7 Union's Large Volume Program**

### **Background**

In section 6 of the DSM Framework, the OEB concluded that rate funded DSM programs for large volume customers are not mandatory. The OEB's view is that these customers are sophisticated and typically competitively motivated to ensure their systems are efficient. The OEB however allowed that, if in consultation with its large volume customers, the gas utility determined that substantial interest exists for the gas utility to providing energy efficiency advice to its customers, the gas utilities were able to propose a fee-for-service program that OEB could approve on its merits. This expertise could include technical expertise, energy audits, operational advice, and engineering studies.

Large volume customers are few in number<sup>176</sup> and have very high annual gas consumption. Union has offered DSM programs and incentives to large volume

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<sup>175</sup> Since 2012, Hydro One has conducted a pilot with Opower on residential customers. Greater Sudbury Hydro, PUC Distribution, and Northern Ontario Wires have partnered with Ecotagious in 2014 which delivers Home Energy Reports to customers, similar to the functions of Opower. The IESO evaluations will be available for review by Staff to assess the results from the electricity sector, as a potential combined approach with LDCs should be considered, in addition to the review of Enbridge's pilot results.

<sup>176</sup> Enbridge has approximately 5 customers in their large volume rate class, while Union has approximately 33 customers if Union's proposal to move T1 customers to M7 is accepted. (Union Gas Limited, EB-2015-0029, Exhibit A, Tab 1, Appendix A, Schedule 5; Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 4, p. 5)

customers for many years. Enbridge has one large volume rate class and has not proposed to offer DSM programs to those customers.

In the last few years, a number of intervenors and OEB staff have expressed concern about the high level of free-ridership that may be occurring in the large volume self-direct program, even above Union's assumed free ridership rate of 54%.<sup>177</sup>

## **Union's Proposal**

For 2016-2020, Union has proposed a new large volume program design based on DSM Framework and feedback received through consultations with its customers. Union's Technical Account Managers will deliver technical support and customer training to large volume customers. No financial incentives will be offered, and savings achieved by customers will not be tracked, and therefore there is no scorecard for this program and no shareholder incentive associated with its successful delivery. The budget for this program is approximately \$800,000 per year, and will be collected through rates rather than as a fee-for-service program.<sup>178</sup>

Union confirmed during cross-examination that even with the large volume program, customers will not achieve all cost-effective DSM, and fewer savings will be achieved in 2016-2020 given Union's proposed large volume program than if the 2013-2014 large volume program were to be reinstated.<sup>179</sup>

## **OEB Staff Expert Evidence**

Synapse noted that other jurisdictions offer DSM programs to large volume customers, but generally employ a mechanism to ensure the technical assistance provided by the utility results in energy savings. Synapse recommended several refinements to Union's proposed program, including adding a program requirement that the customer must agree to show customer energy savings commitments, or that the customers must implement all recommended measures that meet certain conditions (e.g. a payback period of 1.5 years or less) as a condition of participation in the program.<sup>180</sup>

Synapse, in response to an interrogatory from GEC, noted that they are not aware of any evidence to suggest that large volume customers will acquire all cost-effective savings on their own.<sup>181</sup>

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<sup>177</sup> Union Gas Limited, EB-2013-0109, Decision and Order, March 27, 2014; Union Gas Limited, EB-2013-0109, Staff Submission, November 26, 2013

<sup>178</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, pp. 64-71

<sup>179</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 4, p.33

<sup>180</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, pp. 83-84

<sup>181</sup> EB-2015-0029 / EB-2015-0049, Exhibit M.Staff.GEC.12

## **GEC Expert Evidence**

GEC's expert evidence recommended that Union continue its large volume self-direct program in 2016-2020. GEC pointed out that even after applying Union's 54% free ridership rate, Union's self-direct program achieved approximately half of Union's 2013 and 2014 DSM natural gas savings, and the termination of the program represents a dramatic decline in natural gas savings for Union and for Ontario. GEC suggests that without the self-direct program, large volume customers will not pursue all cost-effective DSM. GEC recommended that the program be reinstated with certain modifications such as precluding O&M projects with a payback of less than 1.5 or 2 years to reduce free ridership, and allowing customers to opt-out and receive a rebate on their incentive if they can demonstrate that all energy efficiency projects with a 10-year payback or less have already been completed.

## **OEB Staff Submission**

### **Submission Summary**

Staff recommends that the OEB approve Union's proposed 2016-2020 large volume program with certain reporting requirements. Staff submits that in addition to technical support and customer training, Union should provide an update and discussion in its annual report on the energy efficiency projects large volume customers have implemented where Union has provided technical support, and the estimated savings of these projects. This regular progress update will help justify the rate impacts of the program considering that there will be no large volume scorecard targets under the new framework. Staff also recommends that the OEB review Union's large volume program during its mid-term review when further details will be available for the OEB to better understand the impacts on large volume customers related to the province's cap-and-trade program.

## **5.8 Market Transformation Offerings**

### **Background**

In section 6.5 of the DSM Guidelines, the OEB highlighted that market transformation programs should be focused on facilitating fundamental changes that increase market share of energy efficient products and services, influence customer behaviour and attitudes, and result in a permanent change in the market place over a long period of time.

Given the difficulty in attributing natural gas savings directly to market transformation programs, the gas utilities were instructed to use market transformation programs to complement other programs in their DSM portfolios to avoid lost opportunities, but that they should otherwise limit their participation in this type of program.

## Enbridge's Proposal

Enbridge proposed five market transformation programs targeting the new construction markets.

Enbridge has proposed to continue its largest new construction offering, Residential Savings by Design (Residential SBD), throughout the 2015-2020 program period with an average annual budget of approximately \$3.3M.<sup>182</sup> Residential SBD aims to encourage builders to build homes that are 25% more energy efficient than the 2012 OBC using holistic design approach called the integrated design process (IDP), and financial incentives.

For the 2016-2020 period, Enbridge has proposed to allow builders to enroll in SBD up to three times. Enbridge noted it is necessary to allow builders to participate more than once so they can apply the IDP to different building types and geographies. Enbridge proposed a descending incentive scale for repeat builders where it provides:

- 1) \$2,000 per home for first time participants, for up to 50 homes;
- 2) \$1,000 per home for second time participants, for up to 100 homes;
- 3) \$500 per home for third time participants, for up to 200 homes.

In total, a participating builder can receive a maximum incentive of \$300,000 if they participate in the offering three times during the 2016-2020 program period and build 350 energy efficient homes. Enbridge explained in cross-examination that this incentive structure drives towards helping builders achieve a more efficient building stock. In 2012-2015, participating builders could only participate in the program once, and could receive up to a maximum incentive of \$100,000 for the construction of 50 homes (or \$2,000/home, similar to first time participants in the proposed 2016-2020 offering).<sup>183</sup>

Enbridge has also proposed four smaller new construction offerings, including Commercial SBD, New Construction Commissioning, Low Income New Construction and Small Commercial New Construction:

- Commercial SBD provides up to \$60,000 in incentives for buildings built to 25% above the 2012 OBC,<sup>184</sup> with an average annual budget of approximately \$1.1M.<sup>185</sup>
- New Construction Commissioning helps builders use the building commissioning phase of construction to ensure that energy efficiency is optimized. Participating

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<sup>182</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p.27

<sup>183</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol.8, pp. 65-71

<sup>184</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 1, pp. 58-62

<sup>185</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p. 27

buildings receive \$12,500 to put towards the cost of developing a Commissioning Plan.<sup>186</sup> This offering has been proposed to start in 2016, with a budget of approximately \$1 million.<sup>187</sup>

- Low-Income New Construction assists affordable housing builders to build 15% above current OBC.<sup>188</sup> This offering has been proposed as a pilot in 2015 with an initial budget of \$250,000, then as a full offering from 2016 to 2020.<sup>189</sup>
- Small Commercial New Construction offering provides assistance to small commercial to build 5% above OBC, recognizing that energy performance improvements are more difficult to achieve in small buildings. This offering has been proposed as a pilot in 2015 with an initial budget of \$250,000, then as a full offering from 2016 to 2020 with an average annual budget of approximately \$1.3M.<sup>190,191</sup>

### New Construction Offering Budgets

Table – Enbridge’s 2016 to 2020 New Construction Offering Budgets<sup>192</sup>

Market Transformation	2015	2016	2017	2018	2019	2020
Residential Savings by Design	\$2,494,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,320,000	\$3,390,000
Commercial Savings by Design	\$969,000	\$1,350,000	\$950,000	\$1,080,000	\$1,100,000	\$1,120,000
Low Income New Construction	\$250,000	\$1,120,000	\$1,200,000	\$1,400,000	\$1,430,000	\$1,460,000
New Construction Commissioning	N/A	\$850,000	\$930,000	\$1,000,000	\$1,020,000	\$1,040,000
Small Commercial New Construction	N/A	\$396,933	\$1,305,566	\$2,396,825	\$2,444,762	\$2,493,657

### **Union’s Proposal**

Union proposed to continue its 2012-2014 residential new construction offering, Optimum Home, until 2016. Optimum Home aims to increase the market share of highly efficient homes built at least 20% more efficient than specified in the 2012 Ontario Building Code (OBC), thereby avoiding lost opportunities in residential new construction market. In 2012-2014, Union enrolled 22 builders in the offering. Optimum Home includes three phases<sup>193</sup> to be completed by a builder during the program period. A

<sup>186</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 2, Schedule 1, pp.62-67.

<sup>187</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p.27.

<sup>188</sup> Currently, Enbridge’s program is designed to provide incentives to build to 15% above the 2012 OBC. Enbridge noted that the program design may need to change in response to updates to the 2017 OBC.

<sup>189</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 2, Schedule 1, p. 47.

<sup>190</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 2, Schedule 1, p. 47.

<sup>191</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p. 19.

<sup>192</sup> Enbridge Gas Distribution. EB-2015-0049, Exhibit B, Tab 1, Schedule 4, p. 19, p. 27. Small Commercial New Construction budgets were estimated using the total of marketing and financial incentives (Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T3.EGDI.EP.18)

<sup>193</sup> The three phases of Optimum Home include: 1) Discovery: enroll qualified builders and help develop a Builder Option Package; 2) Production: develop efficiency knowledge with builder and build a prototype home; and, 3) Transformation: long-term, integrated adjustments to builder’s business model including the development of a sustainment plan to maintain momentum of building to the higher efficiency level.

builder can receive up to \$75,000 if they complete all three phases. Each builder can receive incremental support and incentives up to \$17,500 after the three phases are completed, for a total of up to \$92,500 available per builder throughout the 2012-2016 period.

Union has proposed to shift its focus from recruiting new builders to helping enrolled builders complete the program by the end of 2016. Union is also undertaking activities to encourage spillover<sup>194</sup> and eliminate barriers to consumer demand through education and outreach.<sup>195</sup> Spillover, in this case, refers to encouraging the construction of energy efficient homes by builders not enrolled in the Optimum Home offering. Union intends to disseminate best practices and host “forums” for non-participating builders to learn about the program.

Union has not proposed a residential new construction offering or budget for 2017 and beyond because of uncertainties related to the timing and efficiency requirements of the anticipated 2017 update to the OBC. However, Union has proposed to investigate the possibility of introducing a new version of Optimum Home at the mid-term review.<sup>196</sup>

Union indicated that it considered developing a commercial new construction offering for its 2015-2020 plan, but decided not proceed because of the same uncertainties around the 2017 OBC.

### New Construction Offering Budget

Table – Union’s 2016 to 2020 Optimum Home Budget<sup>197</sup>

Market Transformation	2016	2017	2018	2019	2020
Optimum Home Program Budget	\$ 1,042,000	\$ -	\$ -	\$ -	\$ -

### **OEB Staff Expert Evidence**

Synapse questioned whether the proposed incentive structure in Enbridge’s Residential SBD is a good use of program funding. Synapse was of the view that builders would be able to increase their understanding of improved home design through Enbridge’s offering by receiving incentives for far fewer than 50-200 energy efficient homes.<sup>198</sup>

Synapse recommended that Union should commit to continuing its residential new construction offering, regardless of OBC updates, because it is important to address new construction in a comprehensive DSM plan. Synapse recommended that Union

<sup>194</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix A, p. 104

<sup>195</sup> Ibid., pp. 99-100

<sup>196</sup> Ibid., p. 99

<sup>197</sup> Ibid., p. 105

<sup>198</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 70

should not turn away builders that are not already enrolled in the program, as this would create lost opportunities.<sup>199</sup> Synapse also indicated that a comprehensive low-income program should include a new construction offering, similar to Enbridge.<sup>200</sup>

## **GEC Expert Evidence**

GEC notes in their evidence that commercial new construction is a key “lost opportunity” market. Union should launch a commercial new construction program, and Enbridge’s commercial SBD should have higher participation rates. The gas utilities in Massachusetts, a leading jurisdiction, attained approximately one third of their total commercial & industrial savings from commercial new construction projects in 2014.<sup>201</sup>

## **OEB Staff Submission**

### **Submission Summary**

For Enbridge’s Residential SBD, consistent with Synapse’s recommendation, Staff recommends that Enbridge reduce the maximum incentive available to a participating builder from the proposed \$300,000 to \$175,000 during 2016-2020 program period. Staff recommends that builders are offered a declining incentive per home as was recommended by Enbridge, but for no more than 50 homes each time they participate in the offering.

Staff recommends that the OEB approve Enbridge’s Commercial SBD, New Construction Commissioning, and Low-Income New Construction as filed. For the small commercial new construction offering, Enbridge should raise its energy efficiency target from 5% above OBC to at least 15% above the 2012 OBC code.

Staff is of the view that Union should continue its Optimum Home offering throughout the new multi-year DSM term and establish annual budgets for this offering from 2017 to 2020. The design of the offering can be similar to the current Optimum Home, but the offering should incentivize builders to build homes to efficiency levels above OBC 2017, as proposed by Enbridge in its Residential SBD offering. Also, Union should raise their energy efficiency standard for Optimum Home from 20% above code to 25% above 2012 OBC, to be consistent with Enbridge’s residential new construction offering.

Consistent with the GEC recommendation, Staff submits that Union should develop a commercial new construction offering immediately. Further, OEB Staff recommends that Union work with Enbridge to determine whether a commercial new construction

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<sup>199</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 70

<sup>200</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 58

<sup>201</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 26

commissioning offering, low income new construction offering, and/or small commercial new construction offering would be appropriate for its customer base, and incorporate in its DSM plan.

## **Discussion and Recommendations**

As explained in Section 6.5, the DSM Guidelines acknowledge the importance of market transformation programs in making permanent changes in a marketplace over the long-term and avoiding lost opportunities, but advise the natural gas utilities to limit their participation in this type of program. Based on the review of their applications, both gas utilities are required to make modifications in their proposed market transformation programs to achieve this balance.

### Enbridge's Proposal

Enbridge has demonstrated a commitment to market transformation through new construction offerings in the residential, commercial, and low-income sector.

#### *Residential New Construction Offering*

Consistent with Synapse's recommendation, Staff is of the view that the proposed customer incentives for Enbridge's Residential SBD offering are not necessary to achieve the goals of the offering. Although allowing builders to participate more than once has some merit, the maximum incentive available is higher than needed to educate one builder about the IDP, particularly if that builder is a second or third time participant. Staff is of the understanding that the IDP is a design philosophy that is taught through the offering, therefore builders will not have to re-learn this design process when choosing to apply it to different housing types and geographies during their second or third enrolment. A reduced customer incentive will also allow Enbridge to engage more builders to participate in the offering, and allow Enbridge to create spillover by disseminating best practices to non-enrolled builders, as Union is doing as part of Optimum Home. In the event that additional builders do not participate, Enbridge will maintain budget flexibility to allocate approved funds to other successful programs, optimizing its overall DSM plan.

Staff recommends that the proposed incentive levels and structure for first time participants in this offering be approved. Staff recommends that builders are provided an incentive on fewer homes than proposed by Enbridge during their second and third enrolments in the offering, as outlined in the table below.

Table – Proposed Residential SBD Incentive Levels

	Proposed by Enbridge			Proposed by Staff		
	Customer Incentive	Number of Homes	Total Available Incentive	Customer Incentive	Number of Homes	Total Available Incentive
First Time Participant	\$2,000	50	\$100,000	\$2,000	50	\$100,000
Second Time Participant	\$1,000	100	\$100,000	\$1,000	<b>50</b>	\$50,000
Third Time Participant	\$500	200	\$100,000	\$500	<b>50</b>	\$25,000
Total Customer Incentives			<b>\$300,000</b>			<b>\$175,000</b>

Over time, this declining incentive should encourage builders to become more independent and less reliant on Enbridge’s support, as well as provide a more reasonable maximum incentive per builder. Staff estimates that the proposed reduction in customer incentives reduces the annual residential SBD budget by \$500,000.<sup>202</sup>

#### *Other New Construction Offerings*

Enbridge has indicated in their evidence that the 2017 OBC is expected to include an increase in the required energy efficiency of newly constructed buildings of approximately 15% above the 2012 OBC. Enbridge has proposed that its small commercial new construction program will assist builders to build to 5% above the 2012 OBC, citing that energy savings are harder to achieve in small buildings. Staff is of the view that 5% above code seems too conservative a goal to be worth the proposed ratepayer funding allocated to this offering. Staff submits that Enbridge should raise this requirement to at least 15% above the 2012 OBC, so that the offering is helping small commercial builders to meet the anticipated 2017 OBC requirements. Additionally, this program should be moved from the Resource Acquisition scorecard to the Market Transformation and Energy Management Scorecard.

Staff recommends that Enbridge’s commercial SBD, low-income new construction program, and new construction commissioning offerings be approved as filed.

#### Union’s Proposal

##### *Residential New Construction Offering*

Although Union has indicated that it plans to investigate the possibility of introducing a new version of Optimum Home at the mid-term review in 2017, Union should start developing this offering now, and continuing to recruit new builders. Staff is of the view that a building code update is a great opportunity to help builders incrementally improve

<sup>202</sup> This was calculated using the 2017 middle band builder enrollment target (20 builders) receiving incentives \$125,000 lower than originally proposed by Enbridge.

their energy efficiency because they are already making design changes. By delaying the program design and budget approval for a future Optimum Home offering to the mid-term review, Staff believes that Union will lose a critical opportunity to recruit new builders in advance of the OBC update.

Given Union's success and lessons learned through the Optimum Home offering, Union should be able to design a 2017-2020 residential new construction offering even if the exact timing and efficiency levels of the 2017 OBC are not yet confirmed. Based on Union's Optimum Home budgets for 2012-2015, and Enbridge's Residential SBD budget, OEB staff recommends that Union allocate an annual Optimum Home budget of approximately \$2 million from 2017 to 2020, as compared to Union's budget of \$1.042 million for this offering.

Also, Union's Optimum Home offering assists builders to build homes 20% above the 2012 OBC, but Enbridge's Residential SBD assists builders to build homes 25% more efficient than 2012 OBC. OEB staff sees no valid reason for this difference, and is concerned that this inconsistency causes confusion in the market. Union should raise the efficiency level for the program to 25% above the 2012 OBC.

#### *Other New Construction Offerings*

Union should add more new construction offerings to its DSM portfolio.

Consistent with GEC's recommendation, Staff submits that Union should develop a commercial new construction offering for immediate implementation in this important sector. Union indicated in their evidence that it considered a commercial new construction offering, but chose not to proceed based on uncertainties related to the timing and efficiency levels of the 2017 OBC. Staff submits that, similar to the residential new construction offering, a change in building code is an important opportunity to work with builders because they are already making design changes. Union should be able to design a 2016-2020 commercial new construction offering even if the exact timing and efficiency levels of the 2017 OBC are not yet confirmed. Based on Enbridge's Commercial SBD budget, OEB staff recommends that Union consider an annual Optimum Home budget of approximately \$1 million from 2016 to 2020.

OEB staff recommends Union investigate whether a new construction commissioning offering, low-income new construction offering, and/or small commercial new construction offering would be appropriate for Union's customer base. Union should collaborate with Enbridge where appropriate to align approaches and efficiency levels. Union should be encouraged to design and develop these new construction offerings for review and approval at the mid-term review.

## **Results**

## Enbridge

Implementation of Staff's recommendation for modified market transformation programs is anticipated to decrease Enbridge's annual budget by \$500,000. Staff has recommended options for how the required funds can be accessed to support this proposal at the beginning of Section 5.

## Union

Implementation of Staff's recommendation for modified market transformation programs is anticipated to increase Union's budget by \$3 million per year from 2017 to 2020 (\$2 million for residential new construction and \$1 million for commercial new construction).

### **5.9 Financial Screening Criteria for Reducing Free Riders Background**

The DSM Framework encourages the gas utilities to design programs with appropriate screening criteria to minimize free ridership.

Free ridership adjustment takes into account the savings that would have occurred if the customer had undertaken an energy efficiency retrofit on their own without participating in the utility's DSM offering. In the previous DSM framework, gross savings for both Enbridge and Union's custom commercial and industrial offerings have been reduced by a pre-determined free ridership rate to estimate final net savings. As an example, for industrial custom projects, Enbridge applies a free ridership of 50% and Union applies a free ridership of 54%.<sup>203</sup>

The utilities have not considered using payback periods, return on investment (ROI) or internal rate of return (IRR) thresholds to screen customers' participation in an offering. Staff has concerns related to the extent to which the utilities try to minimize the participation of free riders in their commercial and industrial programs and particularly in their custom offerings to these sectors.

### **Enbridge's Proposal**

Enbridge does not propose to apply a minimum payback period or other financial metrics to screen out potential free riders from its custom commercial and industrial offerings as it believes minimum payback criteria would be perceived as a barrier for customers to participate.<sup>204</sup>

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<sup>203</sup> Joint Gas Utility Filing, Updated DSM Input Assumptions, EB-2014-0354

<sup>204</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T5.EGDI.STAFF.15, p. 3

Enbridge stated that implementing a payback threshold would eliminate a material number of projects, exclude the achievement of all cost-effective DSM and create a negative impact on customer relationships.<sup>205</sup>

### **Union's Proposal**

Union does not propose to include either a payback threshold requirement or ROI as an eligibility criterion for its custom offerings due to the variability by customer and project type.<sup>206</sup> Union stated that payback is one of many factors, including budget constraints, productivity goals and standards, timing constraints and operational prioritization that affect the customer's investment decision in energy efficiency improvements.<sup>207</sup>

### **OEB Staff's Expert Evidence**

Synapse provided a review of payback criteria used in other jurisdiction.<sup>208</sup> Synapse found that on average, a minimum of 1.5 years payback threshold is used for industrial projects. Synapse recommended that payback period is key to screen out free riders for commercial and industrial projects and that both gas utilities should review simple payback years for each participant and determine if a payback threshold is reasonable.

### **GEC Expert Evidence**

GEC has recommended that the utilities preclude operational and maintenance projects with a minimum 1.5 or 2 year payback screen to reduce free ridership.<sup>209</sup>

### **OEB Staff Submission**

#### **Submission Summary**

Staff submits that the utilities are not taking adequate action to minimize free ridership in the design of their commercial and industrial offerings and in particular custom commercial and industrial programs. Staff recommends that the gas utilities include a minimum payback threshold of 1.5 years or longer in their custom commercial and industrial offerings depending on the sector and sub-segment.<sup>210</sup>

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<sup>205</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, p. 22

<sup>206</sup> Enbridge Gas Distribution, EB-2015-0029, Exhibit B.T5.Union.Staff.16, p. 1

<sup>207</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, p. 29

<sup>208</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, p. 47

<sup>209</sup> Union Gas Limited, EB-2015-0029, Exhibit J6.5, p. 3

<sup>210</sup> This recommendation does not impact the available or achievable shareholder incentive as the gas utilities have an opportunity to address any changes to projected results due to including a payback criterion.

## Discussion and Recommendations

Research indicates that industries typically make investment decisions based on simple payback criteria, return on investment (ROI) and internal rate of return (IRR) thresholds.<sup>211</sup> Staff is of the view that the same financial metrics that influence a customer's investment decision should be taken into consideration when the gas utilities design and deliver DSM programs to their commercial and industrial customers in order to minimize free riders.<sup>212</sup>

### Experiences In Other Jurisdictions

Staff is of the view that as highlighted in the Synapse and GEC expert evidence, based on the best practices in other jurisdictions, the rigor of the gas utilities' screening criteria for 2016-2020 industrial and commercial programs including custom offerings should be considerably enhanced by including a payback threshold with the goal of minimizing free ridership.

Further, the ACEEE's 2013 study of exemplary commercial and industrial programs indicated that NorthWestern Energy, Xcel Energy and Southern California only provided incentives for measures that had a simple payback of over one year.<sup>213</sup> In the electricity sector, the IESO's Process and Systems Program under the Industrial Accelerator Program does not incent custom projects with a payback of less than one year.<sup>214</sup>

### Historic DSM Results

Based on Staff's review of the gas utilities' 2013 custom commercial and industrial projects, it was found that a significant number of projects were undertaken with a payback time of less than one year. In particular, Staff identified that 30% of Enbridge's custom commercial projects had less than a one-year payback and represented 30% of audited gas savings.<sup>215</sup> Further, 20% of Union's commercial and industrial projects had less than a one-year payback and represented 40% of the audited gas savings.<sup>216</sup> Additionally, Staff found that over 65% of large volume projects with less than a one-

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<sup>211</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.GEC.24, Attachment 2, p. 89

<sup>212</sup> Union Gas Limited, Clearance of 2013 DSM Variance and Deferral Accounts, OEB Staff Submission, EB-2014-0273, pp. 3-4 (According to the payback acceptance curves used commonly in electric and gas achievable potential studies, it has been found that more than 80% of commercial and industrial customers undertake DSM measures without the influence of a utility's financial incentive if the payback period is less than two years).

<sup>213</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.GEC.24, Attachment 2

<sup>214</sup> EB-2015-0029 / EB-2015-0049, Exhibit K12.7, Section 1.6, sub-section (f), p. 6

<sup>215</sup> Union Gas Limited, 2013 DSMVA, OEB Staff Submission, EB-2014-0277, Table 2.2, p. 7: The 30% savings represents the portion of total commercial savings that had less than 1 year payback (13,629,839 m3 / 49,991,484 m3 total)

<sup>216</sup> Ibid, p. 14

year payback represented about 89% of audited gas savings.<sup>217</sup> This indicates that free ridership issues remain present in Enbridge and Union's custom offerings. As there are no screening metrics proposed for 2016-2020 commercial and industrial programs, Staff is concerned that high free ridership will continue to be an issue for custom and other commercial and industrial programs under the new DSM framework.

## **Recommendation**

Staff submits that based on the evidence provided above, it is reasonable to expect Enbridge and Union to include a payback period threshold requirement in their commercial and industrial offerings including custom offerings. Further, Staff is of the view that it is appropriate to maintain consistency with the electricity CDM offerings in Ontario as many of the same industrial and commercial customers who participate in electricity CDM programs are the same as those targeted by Enbridge and Union.

Staff recommends that the gas utilities include a payback threshold of 1.5 years or longer for their commercial and industrial offerings including custom projects.

## **5.10 Adoption of New Measures in Programs**

### **Background**

Both Enbridge and Union have proposed comprehensive programs in the residential, low-income, commercial and industrial sectors for the term of the DSM Framework. However, Staff submits there is potential for increased long-term gas savings opportunities from including additional technologies, such as advanced air source<sup>218</sup> and ground source<sup>219</sup> heat pumps, in the utility's residential and commercial DSM portfolios.

### **Enbridge's Proposal**

In response to interrogatories, Enbridge stated that it has neither submitted a proposal for the inclusion of these technologies nor submitted evidence that it has engaged with the IESO or electricity distributors to collaborate in promoting these technologies.<sup>220</sup>

During the technical conference, Enbridge indicated that it will encourage the adoption of non-traditional technologies including ground-source heat pumps to commercial and

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<sup>217</sup> Ibid, p.16

<sup>218</sup> Advanced air source heat pumps can provide significant savings but may need a supplementary heat source if temperatures fall below -20C to -30C.

<sup>219</sup> A ground source heat pump has the potential of generating very significant natural gas savings in the winter and electricity savings in the summer by providing air conditioning.

<sup>220</sup> Enbridge Gas, EB-2015-0049, Exhibit I.T5.EGDI.STAFF.19

industrial customers through the Energy Leaders offering<sup>221</sup> or the Savings By Design offering.<sup>222</sup> During cross-examination, Enbridge submitted it has not considered advanced air-source or ground source heat pumps in their proposed programs as they have long payback periods and are cost-prohibitive.<sup>223</sup>

## **Union's Proposal**

During cross-examination, Union stated that the significantly long paybacks of heat pumps and high costs of many new technologies make them cost-prohibitive.<sup>224</sup> However, Union submitted that it has not studied the TRC impacts for air source heat pumps or ground source heat pumps.<sup>225</sup>

## **OEB Staff Submission**

### **Summary of Staff Submission**

Staff submits that including heat pump technologies in the residential and commercial DSM programs can increase the potential for long-term natural gas savings.

Staff suggests that utilities cooperate with the IESO and electricity distributors in pilot projects to assess the savings and the costs associated with the installation of advanced air source and ground source heat pumps in residential and commercial buildings. To facilitate the implementation of these technologies, Staff recommends the use of on-bill financing to reduce the high initial installation cost.

### **Discussion and Recommendations**

Air source heat pumps and ground source heat pumps are mature technologies, but evidence suggests that the penetration of heat pumps in the residential sector is still very low.<sup>226</sup> Staff acknowledges that the low natural gas prices can make the technologies appear to be less cost-effective. However, Staff submits there is value in testing the feasibility and the potential of these technologies through collaborative efforts with electricity distributors to make these technologies more cost-effective to customers. Further, the payback period of heat pumps do not appear to be as long as the utilities claim. NRCAN has estimated the payback period for ground source heat pumps to be about ten years for the Toronto region.<sup>227</sup>

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<sup>221</sup> Enbridge Gas, EB-2015-0049, Technical Conference, July 6, 2015, Transcript pp. 236-238

<sup>222</sup> Enbridge Gas, EB-2015-0049, Technical Conference, July 6, 2015, Transcript p. 144

<sup>223</sup> Ibid, p. 237

<sup>224</sup> Union Gas, EB-2015-0029, Technical Conference, Transcript p. 39

<sup>225</sup> Ibid

<sup>226</sup> Union Gas, 2012-2014 DSM Plan, EB-2011-0327, Appendix K: Updated 2011 Potential Study by ICF, page 15

<sup>227</sup> [NRCAN Heating Energy Cost Comparison: Heat Pump and Electric Heating Systems](#)

These technologies can be installed in existing and new houses as well as small commercial buildings that use natural gas for space heating and require air-conditioning. Heat pump technologies are supported by the IESO through HVAC initiatives to consumer and business segments.<sup>228</sup> Furthermore, Staff notes that the March 2014 Conservation Directive directed the OPA to consider how fuel switching measures may be integrated into conservation programs designed by electricity distributors in the 2015-2020 CDM Framework, which included geothermal heating and cooling among others.<sup>229</sup> Staff believes that a collaborative pilot program between gas and electricity distributors will be appropriate and supported by the electricity sector.<sup>230</sup>

## Recommendation

Staff submits that the development of a successful DSM program using these technologies will require the collaboration of natural gas distributors with the IESO and electricity distributors in the program design and delivery of these technologies.

Staff recommends that the utilities assess the potential impacts of including these technologies in their DSM programs through a pilot study conducted with the IESO and electricity distributors.

## 6.0 DSM EVALUATION

### Background

Section 7 of the DSM Framework outlined the OEB's position that it will centrally coordinate the evaluation process throughout the DSM Framework period. The OEB noted that its process will include the gas utilities, stakeholders and evaluation experts to ensure the operational characteristics of DSM programs will generate the data and information needed to undertake robust evaluations that produce accurate results.

The OEB indicated that the gas utilities are still responsible for filing an evaluation plan as part of their broader DSM filings.

On August 21, 2015, the OEB issued [a letter](#) establishing its process to evaluate the results of the gas utilities' DSM programs from 2015 to 2020. The letter outlined the OEB's DSM Evaluation Governance Structure and indicated that the gas utilities' responsibilities include developing an initial evaluation plan, filing an annual draft evaluation report and providing program data and coordination support to the OEB's Evaluation Contractor and OEB staff, as requested. The OEB also established a new

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<sup>228</sup> [IESO Measures and Assumptions list](#)

<sup>229</sup> March 26, 2014 Conservation Directive, Section 3, subsection (ii)

<sup>230</sup> Major electricity distributors, including Hydro One, are currently conducting pilot studies on air-source heat pumps in the residential and small business segments.

Evaluation Advisory Committee (EAC) to provide input and advice to the OEB on the evaluation and audit of DSM results.

### **Enbridge's Proposal**

Enbridge included an evaluation plan that discusses the evaluation projects and research activities it proposes over the multi-year term, as well as specific evaluation plans for each of its DSM programs. Enbridge noted that the evaluation plans related to its DSM programs (or Offer Evaluation Plans) have been guided by the IESO's EM&V protocols.<sup>231</sup> Enbridge has also provided proposed evaluation budgets for 2016 to 2020.<sup>232</sup> Staff discusses the reasonableness and treatment of these budget amounts in Section 3 – Budgets of the submission.

### **Union's Proposal**

Union has also included an evaluation plan for each of its proposed programs and the related research activities for the duration of the multi-year term. Similar to Enbridge's proposal, Union's evaluation plan covers the following areas: description of the program (or offering), goals and objectives, target market, eligibility criteria, key elements, timing, evaluation goals and objectives (including research questions), and the evaluation approach (including process evaluation, cost-effectiveness evaluation and data collection).<sup>233</sup>

### **Expert Evidence**

#### **OEB Staff Expert Evidence**

Synapse identified several key issues common to both Enbridge and Union's program and offering evaluation plans, generally related to both utilities providing insufficient information to properly and effectively support its evaluation efforts.<sup>234</sup> Synapse highlights savings verification activities, gross impact evaluation approaches, evaluation study schedules, issues related to process evaluation (timing, methods), evaluation budgets, and cross-offering evaluation studies as the central areas of concern.

#### **GEC Expert Evidence**

GEC provided its recommendations related to improvements to the EM&V process, including those related to who oversees the custom project savings verifications and how to handle non-consensus on items at the Technical Evaluation Committee.

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<sup>231</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 2

<sup>232</sup> Ibid., p. 5

<sup>233</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, Appendix C

<sup>234</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEBStaff.1, p. 16

## OEB Staff Submission

### Submission Summary

Staff submits that although there are some flaws throughout the gas utilities' proposed evaluation plans, the OEB should accept them as filed but indicate that the evaluation plans, including details related to verification activities and data collection are subject to any updates and revisions as developed by the new evaluation process announced by the OEB. Staff is of the view that the OEB's newly established process for evaluating the gas utilities' program results, including the development of a robust EM&V plan, is the appropriate process for making revisions and updates to the evaluation plans proposed by the gas utilities to ensure the evaluation activities that are undertaken result in accurate final results.

### Discussion and Recommendations

Staff is of the view that the gas utilities' evaluation plans and comments received from all experts and stakeholders should be fully reviewed by the OEB's Evaluation Contractor and the EAC to ensure that all inputs have been considered in the development of the EM&V Plan of the OEB.

## 7.0 INPUT ASSUMPTIONS

### Background

Section 8.0 in the DSM Framework specifies that input assumptions are approved engineering assumptions that represent the best available information regarding various characteristics of an energy efficiency technology, as shown in the table below. In addition to input assumptions, net-to-gross (NTG) adjustment factors such as free ridership, spillover, and persistence of savings are often included by the utilities in discussions about input assumptions.

Type of Assumption	Prescriptive Measures <sup>235</sup>	Custom Measures <sup>236</sup>
Input Assumptions	gas savings per measure, measure life	measure life
NTG Adjustment Factors	free ridership, spillover,	free ridership, spillover,

<sup>235</sup> Prescriptive measures are measures where the energy savings are pre-determined based on how the typical conservation program participant obtains resource savings as a result of implementing the measure (the savings are determined by applying fixed input assumptions into energy and demands savings equations). ([Conservation First EM&V Protocols and Requirements, v2.0](#), p.45)

<sup>236</sup> Custom measures do not have pre-determined energy savings associated with their implementation, and are more common in industrial and commercial facilities where equipment is more specialized and operational characteristics are more variable. Custom project savings are calculated on a case-by-case basis, although measure life may be assumed based on typical lifetimes of that type of equipment.

	persistence	persistence
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The input assumptions and adjustment factors are used in the following areas of the DSM framework:

- a) Cost-effectiveness screening of technologies and programs
- b) Establishment of DSM targets
- c) Program savings evaluations<sup>237</sup>

For the purpose of this submission, the adjustment factors applied to prescriptive and custom programs will be included in the discussion of input assumptions.

This section addresses the use of input assumptions in the calculation of shareholder incentive and lost revenue adjustment mechanism (LRAM). In 2011, the OEB directed gas utilities to use the best available information that results from DSM program evaluations. This best available information is used to establish the utilities' final savings results, and to calculate LRAM and shareholder incentive amounts.<sup>238</sup>

Best available information refers to the updated input assumptions resulting from the evaluation and audit process of the same program year. For example, the LRAM and shareholder incentive amounts for the 2015 program year should be based on the updated input assumptions resulting from the evaluation and audit of the 2015 results. The updates to the input assumptions resulting from the evaluation and audit of the 2015 results would likely be completed in the second half of 2016.

The application of updated input assumptions and adjustment factors in this manner is referred to as "retrospective" application of input assumptions. When the updates to input assumptions and adjustment factors resulting from program evaluations and audits for the program year are applied on the evaluation results for the following year, this approach is referred to as a "prospective" application of updated input assumptions.

The 2015-2020 DSM Framework, consistent with the OEB's decision in 2011, continues to require the retrospective application of the updated input assumptions for the calculation of both LRAM and shareholder incentive.

## Enbridge's Proposal

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<sup>237</sup> Adjustment factors are used in the evaluation of all prescriptive and custom programs. Input assumptions are used in to evaluate program savings where measuring actual values is not feasible or economically practical.

<sup>238</sup> Filing Guidelines to the DSM Framework, EB-2008-0346

Enbridge also used the input assumptions contained in the DSM measures application filed with the OEB on March 27, 2015 in the preparation of its 2015-2020 DSM Plan.<sup>239</sup>

Enbridge has proposed to use the best available information when calculating both LRAM and shareholder incentive amounts, consistent with the DSM Guidelines. However, Enbridge has proposed to adjust its annual targets related to any changes in input assumptions that may occur between 2015 and 2020 through a Target Adjustment Factor (TAF) as discussed in Section 2. By adjusting its targets on an annual basis to reflect changes to input assumptions, Enbridge has proposed to eliminate the impact of any input assumption changes on its shareholder incentive. Enbridge is of the view that the TAF is consistent and complementary to the DSM Framework.<sup>240</sup>

As discussed in Section 2, Enbridge is of the view that the input assumptions used to evaluate program savings for a given year should be the same set of input assumptions reflected in the target for that year.

### **Union's Proposal**

Similar to Enbridge, Union used the input assumptions contained in the DSM measures application filed with the OEB on March 27, 2015 in their 2015-2020 Application.<sup>241</sup>

Union has proposed to apply updates to input assumptions resulting from the audit and evaluation process on a prospective basis for the purpose of calculating its shareholder incentive, and retrospectively for the purpose of calculating LRAM amounts. This approach is counter to the direction provided in the DSM Framework.

Similarly, Union has proposed to apply any input assumption changes resulting from the Technical Reference Manual (TRM) and Net-to-Gross (NTG) study to its savings in 2016 on a prospective basis.<sup>242, 243</sup>

Union's formulaic target-setting approach uses previous year's lifetime natural gas savings to calculate current year targets, as discussed in Section 2. Union proposed that input assumptions be applied retrospectively for the purpose of calculating next year targets, but applied prospectively to lifetime natural gas savings for the purpose of calculating the shareholder incentive.<sup>244,245</sup> Union noted that although the current

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<sup>239</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 6, pp. 1-2

<sup>240</sup> Enbridge Gas Distribution, EB-2015-0049, EGD.Staff.8, pp. 3-4

<sup>241</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, p. 43

<sup>242</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, p. 17

<sup>243</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T2.Union.GEC.31

<sup>244</sup> Ibid.

<sup>245</sup> For example, the evaluation of 2016 results will occur during the 2017 program year. If the 2016 auditor were to recommend revisions to certain input assumptions, those updated input assumptions would be used starting in 2017 to calculate the lifetime natural gas savings. Therefore, the 2016 shareholder incentive would be based on

policy is that changes to input assumptions are applied retrospectively, their proposed approach is consistent with the previous approach used in the Generic DSM Framework (EB-2006-0021) that was in place from 2007 to 2011. The Generic DSM Framework allowed for the prospective application of input assumption changes for the calculation of shareholder incentives. Union argued that the retrospective application of updated input assumptions for the purpose of calculating shareholder incentive is inappropriate as these changes in assumptions could not have been reasonably foreseen at the time the utility delivered the program. On the other hand, Union explained that LRAM should be calculated using best available information, i.e., retrospectively, because LRAM represents lost revenue that would have been collected if not for the program.<sup>246</sup>

In support of its position, Union provided an American Council for an Energy-Efficient Economy (ACEEE) jurisdictional scan from 2012 that showed 81% of U.S. jurisdictions reviewed apply assumptions on a prospective basis.<sup>247</sup>

### **OEB Staff Expert Evidence**

Synapse indicated that some jurisdictions may have different policies for LRAM and shareholder incentive, including applying input assumptions prospectively. However, Synapse also commented that it is up to the regulator to decide on how evaluation results are used in the calculation of shareholder incentives and LRAM amounts. Synapse concluded that there is no major reason to deviate from the OEB's current evaluation policies on the application of input assumptions, acknowledging that the policy context in the DSM Framework is the result of the OEB's decision in 2011.<sup>248</sup>

### **GEC Expert Evidence**

GEC's expert witness Mr. Neme opined on the issue of whether utilities should be at risk of losing shareholder incentive if input assumptions change throughout the framework period. Mr. Neme specified that input assumptions for prescriptive programs, particularly for equipment that is promoted through mass-market channels and installed by residential and small/medium business customers, should not be adjusted retrospectively, since changes to those input assumptions are out of the utilities' control. However, this would not apply to the input assumptions for custom projects, because the utility has far more control over the case-by-case calculation of energy savings for each project.

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the savings achieved using the old input assumptions. The cost-effectiveness of the 2016 program year would be calculated using the updated input assumptions for the purpose of calculating the 2017 targets. LRAM for 2016 would also be calculated using the updated input assumptions.

<sup>246</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 1, pp. 125-127

<sup>247</sup> Kushler, Martin; Nowak, Seth; White, Patti (2012) "A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs".

<sup>248</sup> EB-2015-0029 / EB-2015-0049, L.OEBStaff.1, pp. 116-127

Further, Mr. Neme commented on net-to-gross assumptions (or adjustment factors). He indicated that adjustment factors for prescriptive measures should be locked-in (i.e., not adjusted retroactively), but that he was not inclined to say this would be true for custom projects, because utilities can influence the level of free ridership in an offering by how they design and deliver it.<sup>249</sup> It was not clear from Mr. Neme's comments how adjustment factors should be applied to a program like Home Reno Rebate or Home Energy Conservation, in which energy savings resulting from the installation of prescriptive list of measures are calculated on a whole-home basis.

## **OEB Staff Submission**

### **Submission Summary**

OEB staff recommends the continued use of the best available information from the evaluation and audit of programs to calculate both shareholder incentive and LRAM amounts retrospectively. Although Staff agrees with the utilities' position that LRAM should be calculated using best available information, it rejects the utilities' attempt to mitigate the impact of evaluation results on shareholder incentive for a given year by proposing to use evaluation results prospectively or to adjust targets. Further, Staff clarifies that natural gas savings calculated for the purpose of calculating LRAM and shareholder incentive should be based on measured actual results, rather than input assumptions, where feasible and economically practical. Where not feasible or economically practical to use measured actual results, the input assumptions used should be verified periodically against measurement data.

### **Discussion and Recommendations**

Consistent with the OEB's direction in the DSM Framework, calculation of LRAM and shareholder incentive should be based on the same set of input assumptions, which are determined based on the best available information. Staff submits that ratepayers should not be held accountable for savings that did not actually occur during a given program year, even if this is only discovered during an evaluation process that occurs after the program year is complete.

The OEB has provided consistent guidance to the gas utilities on this issue in both the 2012 DSM Guidelines and the most recent DSM Framework. As part of the consultation process for the 2012 DSM Guidelines, OEB staff discussed its position on the appropriate use of input assumptions in the 2011 Staff Discussion Paper.<sup>250</sup> Until that time, the gas utilities were calculating LRAM based on best available information, but shareholder incentive was based on locked-in program input assumptions that were

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<sup>249</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 11, pp. 137-138

<sup>250</sup> Staff Discussion Paper on Draft DSM Guidelines, EB-2008-0346

not updated based on best available information resulting from the program evaluation cycle. Staff estimated that the natural gas savings used to calculate LRAM were about 7% lower (on average) than the amount used to calculate shareholder incentive between 2007 and 2009, supporting Staff's concern that shareholder incentive was being calculated using inappropriate savings amounts.<sup>251</sup> Staff position was supported by five ratepayer representatives as well as one environmental interest representative.<sup>252</sup>

Staff's position in support of using updated input assumptions instead of locked-in values for both LRAM and shareholder incentive remains unchanged. Using updated input assumptions to calculate both LRAM and shareholder incentive amounts rewards natural gas utilities that develop programs with robust savings and low free ridership while reacting in a timely manner to new information. This approach supports both the achievement of greater savings and realization of actual savings. Given the gas utilities' significant experience in DSM, expanded DSM budgets, cost-efficiency incentives and funding re-allocation provisions, Staff submits that the gas utilities have the program flexibility to address evolving market conditions and changes to input assumptions related to energy efficiency technologies. Further, Staff does not expect there to be significant and unforeseeable risk to the utility if best available input assumption information is used in the calculation of shareholder incentive. Finally, Staff submits that the proposed targets were built by the gas utilities that hold the institutional knowledge, program history and technical expertise to ensure that the best available information was applied in the development of the proposed targets.

Staff notes that DSM Framework approach to input assumptions is consistent with the IESO's approach to evaluating CDM savings, which maintains a collection of electricity conservation measures based on best available information to serve as the basis for the design, implementation, and evaluation of CDM programs.<sup>253</sup>

### ACEEE Studies

Both utilities discussed the ACEEE studies that support their view that best adjusting input assumptions prospectively is best practice. In particular, Union discussed a study that included 38 U.S. jurisdictions, of which 31 (81%) reviewed apply assumptions on a prospective basis only.<sup>254</sup> The survey also found that 6 (16%) of jurisdictions reviewed applied input assumptions retrospectively, consistent with Ontario's DSM Framework.

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251 Staff Discussion Paper on Draft DSM Guidelines, EB-2008-0346, p. 25

252 Staff Discussion Paper on Draft DSM Guidelines, EB-2008-0346, p. 23

253 IESO's Measures Assumption Lists, located at <http://www.powerauthority.on.ca/opa-conservation/conservation-information-hub/evaluation-measurement-verification/measures-assumptions-lists>

254 Kushler, Martin; Nowak, Seth; White, Patti (2012) "A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs".

These jurisdictions include Massachusetts, Montana, and Oregon. Only 1, North Carolina, applied input assumptions retrospectively for some purposes, and prospectively for others. Union's proposal to apply input assumptions to LRAM calculations retrospectively and to shareholder incentive prospectively is actually consistent with only 3% of jurisdictions surveyed, not 81% of jurisdictions as has been claimed.

### Measured Actual Results

Staff also recommends that the gas utilities use actual measured savings to determine LRAM and shareholder incentive amounts, instead of input assumptions, to the extent that it is feasible and economically practical.

Using of input assumptions for evaluation may be entirely appropriate if a large number of customers are only installing one measure. However, Staff notes that the input assumptions used for these measures should be verified periodically using actual measurement data.

## **9.0 AVOIDED COSTS**

### **Background**

Section 10 of the DSM Framework notes that the successful implementation of DSM program should ultimately lead to the gas utilities avoiding costs related to not having to purchase, or provide, an extra unit of natural gas. The OEB indicated that avoided supply costs should be a consideration when conducting cost effectiveness calculations of potential DSM programs.

The avoided costs should be based on long-term estimates and include: avoided supply-side and delivery costs, such as capital for distribution infrastructure, operating and commodity costs<sup>255</sup>; avoided demand-side costs; and, avoided upstream costs directly incurred by the natural gas utility: storage costs.

In order to ensure consistency, the OEB indicated that the gas utilities should use a common methodology to determine utility-specific avoided costs and coordinate the timing for selecting commodity costs so that they are comparable.<sup>256</sup>

Avoided costs are a key element of the Total Resource Cost (TRC) and Program Administrator Cost (PAC) tests that the OEB indicated were to be used in developing the gas utilities' multi-year DSM Plans.

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<sup>255</sup> Commodity costs include those for natural gas and, if applicable, for other resources such as electricity, water, heating fuel oil and propane.

<sup>256</sup> Commodity costs include those for natural gas and, if applicable, for other resources such as electricity, water, heating fuel oil and propane.

## Enbridge's Proposal

In response to Section 10 of the Filing Guidelines, Enbridge engaged Navigant Consulting Ltd. to conduct a Distribution Avoided Cost Study<sup>257</sup> and incorporated the results of this study into its avoided costs for 2015. Enbridge has continued to use 2012 avoided cost data, which was used to develop its 2012-2014 DSM plan and was the most recent avoided cost data available to be used for its achievable potential study. The 2012 avoided cost data uses a natural gas price forecast developed by PIRA and relates primary supply prices to the NYMEX prices at Henry Hub, and other receipt points. The commodity price forecast at each supply point depends on the basis differential at that point relative to Henry Hub.<sup>258</sup> During the IRR process, Enbridge discovered that the avoided natural gas costs used to calculate TRC-Plus and PAC cost-effectiveness results were incorrect due to an input error. Enbridge subsequently corrected its avoided natural gas costs. Enbridge noted that the impact to the results of the TRC-Plus test is not material as none of Enbridge's DSM offers have reduced in cost-effectiveness below a TRC-Plus ratio of 1.<sup>259</sup>

Enbridge noted that it is currently reviewing an alternate approach to incorporate long-term market forecast for natural gas commodity prices into its avoided costs with the potential change extending avoided cost estimates for the final 20 years of program impacts. Enbridge plans to file final 2015 avoided costs with the OEB at the same time as its next updated input assumptions application by the Q4, 2015.<sup>260</sup> The new avoided costs would be applied for screening purposes to offers occurring in 2016.

Enbridge noted that it views matters of avoided costs related to carbon emissions as an area for consideration at the mid-term review when further details around Ontario's cap and trade program are known and able to be fully incorporated into the decision-making process.<sup>261</sup>

In response to suggestions by GEC that including additional avoided cost impacts will increase available funding within the OEB's residential cost threshold of \$2/month, Enbridge submitted in its Argument in Chief that it has appropriately calculated and incorporated avoided costs into its DSM plan and cost-effectiveness tests. Enbridge submitted that its avoided costs should not be adjusted for the purposes of its TRC screening.<sup>262</sup>

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<sup>257</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit C, Tab 1, Schedule 4, Navigant Distribution Ltd. Distribution Avoid Cost Study

<sup>258</sup> Enbridge Gas Distribution, EB-2012-0394, Exhibit B, Tab 2, Schedule 2

<sup>259</sup> Enbridge Gas Distribution, EB-2015-0049, Cover Letter to Interrogatory Responses, June 23, 2015, p. 2

<sup>260</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 5, p. 2

<sup>261</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit J7.3

<sup>262</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, pp. 87-95

## **Union's Proposal**

Union contracted ICF International to review the methodology both Union and Enbridge have relied on to calculate avoided gas costs since 2007.<sup>263</sup> ICF concluded that Union's use of this methodology is reasonable and appropriate and provided four refinements<sup>264</sup> to the methodology. Union indicated that these refinements have been incorporated, except for avoided infrastructure costs which it will assess through its planned DSM's role in infrastructure study.<sup>265</sup> Union relied on forecasted Dawn prices for its southern region and AECO prices for its northern region, and also increased its commodity prices for inflation after the first 3 years.<sup>266</sup>

Union will consider what changes (if any) are required should the government apply cap-and-trade revenues toward energy efficiency. Further, Union noted that once the details of any cap-and-trade mechanism are known, it will contemplate the potential impacts on its programs.<sup>267</sup>

During Argument-in-Chief, Union noted that the DSM plan filed is cost-effective and any changes to increase avoided cost would make its plan more cost-effective. Union noted it does not feel it is appropriate to divert from the OEB's budget and bill impact guidance. Union submitted that its avoided cost methodology should be accepted and that GEC's proposal should not be approved.<sup>268</sup>

## **OEB Staff Expert Evidence**

The Synapse evidence focused mainly on DSM programs but it made a recommendation with respect to avoided costs. Synapse noted that although Enbridge indicated it might need to develop a new cost-benefit test for screening DSM programs focused on addressing gas infrastructure, Synapse did not believe that was necessary. Synapse recommended that the gas utilities continue to screen using the existing tests but that it is necessary to modify some of the inputs, particularly those related to avoided costs to reflect the value of avoiding peak hour gas consumption.

## **GEC Expert Evidence**

Avoided gas costs and the resulting benefits were a central area of focus in the GEC expert evidence. GEC experts concluded that the gas utilities' estimates of avoided

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<sup>263</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, Appendix C

<sup>264</sup> The refinements suggested include accounting for: avoided fuel losses; avoided storage costs; avoided, deferred or delayed infrastructure (T&D) costs; and, incorporate a long term gas commodity price forecast.

<sup>265</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, pp. 25-26

<sup>266</sup> Union Gas Limited, Exhibit A, Tab 2, Appendix C

<sup>267</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T13.Union.GEC.3

<sup>268</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, pp. 20

costs are too low and that additional net economic benefits of a more aggressive DSM portfolio could be even greater than the benefits proposed by the gas utilities.<sup>269</sup>

GEC outlined a number of recommendations it believed the OEB should implement, including the elimination of budget caps included in the Framework. GEC relied on its analysis of the rate reducing impacts of distribution avoided costs, commodity price suppression, reduced purchases of relatively expensive gas and emission reduction cost avoidance.<sup>270</sup> The table below from the GEC evidence was a central point of discussion on this topic.<sup>271</sup> The table quantifies the avoided costs and system benefits in four areas where GEC believed the benefits of the gas utilities' DSM portfolios increased the overall system benefits, therefore reducing the net impact to customers and enabling the gas utilities to increase their proposed annual DSM budgets.

**Table 3: Efficiency Benefits that Put Downward Pressure on Rates**

Benefit	NPV of Lifetime Benefits per Annual m <sup>3</sup> Saved <sup>36</sup>		Average Annual Value from Utilities' 2016-2020 DSM Plans (millions \$) <sup>37</sup>		Benefits as a % of Average Annual (2016-2020) DSM Plan Budget <sup>38</sup>	
	Enbridge	Union	Enbridge	Union	Enbridge	Union
1 Avoided carbon regulation costs <sup>39</sup>	\$0.98	\$0.98	\$73.2	\$73.9	101%	129%
2 Price suppression effects <sup>40</sup>	\$0.08	\$0.08	\$6.2	\$6.3	9%	11%
3 Reduce purchase of most expensive gas <sup>41</sup>	\$0.10	\$0.18	\$7.2	\$13.3	10%	23%
4 Avoided distribution system costs <sup>42</sup>	\$0.38	\$0.24	\$28.1	\$18.2	39%	32%
<b>Total</b>	<b>\$1.54</b>	<b>\$1.49</b>	<b>\$114.7</b>	<b>\$111.7</b>	<b>158%</b>	<b>195%</b>

Ultimately, GEC recommended that the OEB determine its guidance in the Framework to be obsolete, or outdated, due to the availability of new information. The new information is the analysis GEC conducted in relation to Table 3 above on various avoided cost components. GEC believes this new information indicates that the gas utilities avoided costs are understated and that a proper representation of the actual avoided costs would allow for larger DSM budgets that would not result in increased bill impacts for customers.

## OEB Staff Submission

### Submission Summary

Staff submits that both Enbridge and Union have generally incorporated avoided costs into their multi-year DSM plans in accordance with the direction provided by the OEB in

<sup>269</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, pp. 28-29

<sup>270</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, pp. 45-47

<sup>271</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, p. 18 (Table 3)

the DSM Framework. Staff has a concern that the gas utilities have not relied on consistent natural gas commodity price forecasts. Staff is of the view that the OEB should direct the gas utilities to update their avoided cost calculations using an agreed on natural gas commodity price forecast and include the updated results in their revised DSM plans. Staff is of the view that the forecasted natural gas commodity costs are a central component to the avoided cost calculation which should be consistent between both Enbridge and Union (outside of minor differences due to individual gas supply plans). Staff recommends that any new information arising from the provincial cap-and-trade program, the achievable potential study and the DSM in infrastructure planning studies should be reviewed and considered by the OEB at the mid-term review.

## **Discussion and Recommendations**

Below Staff discusses its position on the different natural gas commodity price forecasts used by Enbridge and Union, as well as the avoided carbon regulation costs, price suppression effects, and avoided distribution system costs that are identified in GEC's evidence and which are outlined above.

### Natural Gas Commodity Price Forecasts

Staff has observed an apparent difference in the natural gas commodity price forecasts used by Enbridge and Union. This was also confirmed in GEC's expert evidence.<sup>272</sup> Staff has provided a comparison of the gas utilities' variable gas costs that were filed with the avoided gas costs calculations to evaluate the degree of inconsistency in the gas price forecasts.<sup>273</sup> The commodity costs represent the majority of the utility's variable costs. Staff is of the view that this is indicative of the trend of the price forecasts used by Enbridge and Union. The graph below shows the gas utilities' variable costs for residential/commercial baseload.

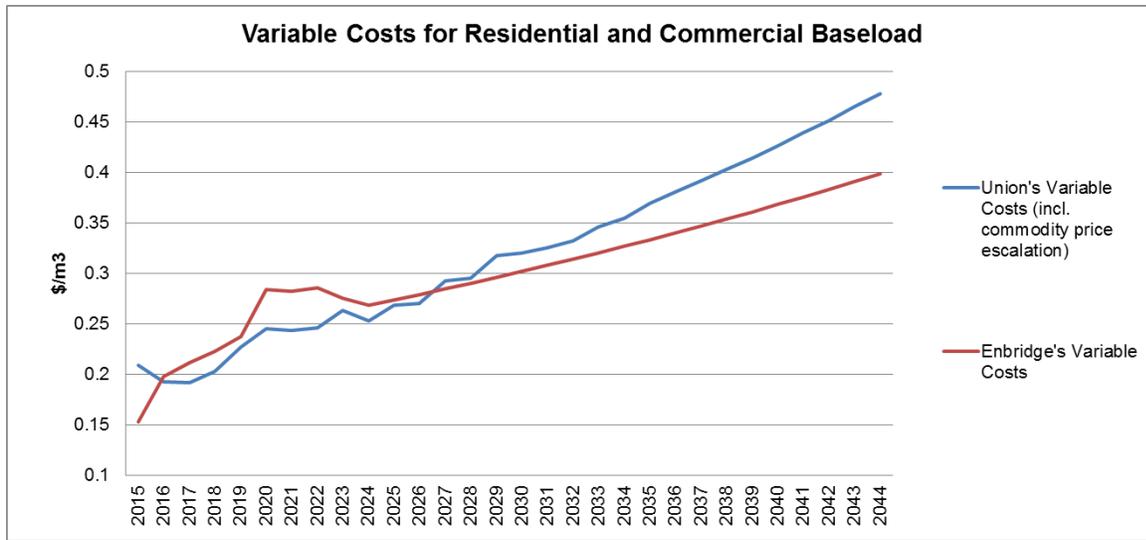
### Utilities' Variable Costs for Residential and Commercial Baseload<sup>274</sup>

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<sup>272</sup> EB-2015-0049/ EB-2015-0029, Exhibit L.GEC.2, p. 55 (Figure 4) It was confirmed in July 7th Technical Conference, p. 94 that Union's gas escalation rate is represented by the ICF Dawn trend line.

<sup>273</sup> Enbridge did not file the commodity price forecast due to confidentiality reasons.

<sup>274</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T9.Union.GEC.21 Excel Attachment 1\_20150623; Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 2, Schedule 5, p. 3



As the graph above shows, Enbridge’s variable costs are higher than Union’s variable costs for the first 10 years. Enbridge has escalated its commodity prices by 2% after the first 10 years which had remained constant in real terms.<sup>275</sup> Union has used the forecast of Dawn prices for its southern region and AECO prices for its northern region, and has increased its commodity prices by an inflation rate of 1.68% after the first 3 years. Additionally, in response to recommendations from ICF<sup>276</sup>, Union applied long-term commodity price escalators until 2044 which leads to Union’s long-term variable costs to be higher than Enbridge.

Section 10 of the DSM Guidelines states that the natural gas utilities should coordinate the timing for selecting commodity costs so that they are comparable. Based on this direction, Staff is of the view that the long-term price forecast assumptions should be similar (or the same), to the extent possible, for both Enbridge and Union, and updated each year based on similar assumptions to ensure that the commodity costs are comparable. Since it does not appear that Enbridge and Union have relied on the same natural gas commodity price forecasts, Staff recommends that the gas utilities be directed to update their avoided cost calculations using an agreed on natural gas commodity price forecast.

Avoided Carbon Regulation Costs

GEC has provided analysis indicating that the benefits of avoided carbon regulation costs (\$0.98 NPV of lifetime benefits per annual m<sup>3</sup> saved based on \$20 (2014US) per tonne value of carbon) alone would account for 101% of Enbridge’s average annual 2016-2020 DSM budget and 129% of Union’s average annual DSM budget. Staff suggests that the assumptions made in this analysis cannot be reasonably accounted

<sup>275</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T9.EGDI.GEC.29

<sup>276</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, Appendix C

for at this time as there is no price of carbon in Ontario. Although the additional benefits of avoided carbon regulation costs may be significant, Staff submits that it is not reasonable for the OEB to divert from the budget guidance it has provided in the Framework and approve increased budgets until the details regarding the implementation of the province's cap-and-trade program are available and the costs associated with compliance of the natural gas distributors with the GHG emissions cap are known. The price of carbon in Ontario has not been established. When it has been, the implications of carbon costs and the details surrounding carbon emissions quotas and the market for carbon emissions will allow the gas utilities and the OEB to appropriately consider implications to DSM and other areas of the gas utilities' business.

Further, Staff is of the view that although the current 15% TRC-Plus non-energy benefits adder may only account for some of carbon related costs<sup>277</sup>, the utilities should continue to use the 15% adder at this time for two reasons; first, the 15% adder is consistent with the approach used by the IESO pursuant to a letter of direction from the Minister of Energy<sup>278</sup>; and second, the OEB does not currently have the information it requires to consider the appropriateness of revising the 15% non-energy benefits adder or applying an additional avoided carbon cost adder at this time. The price which is ultimately established may be lower<sup>279</sup> than that which has been used in the hypothetical calculations provided by GEC. If that is the case, the current 15% TRC-Plus non-energy benefits adder will continue to be reasonable. Nevertheless, Staff submits that the current budget guidance is appropriate and should remain in place until the mid-term review of the DSM framework. At the time of the mid-term, the OEB will be afforded a number of new pieces of information to consider, including the results of the updated DSM potential study which will include pricing of carbon emissions, cap-and-trade program details including GHG caps allocated to the natural gas utilities, and more reliable market-based carbon prices.

### Price Suppression Effects

GEC provided evidence and analysis on its estimation of the demand reduction induced price effects (DRIPe or price suppression effect) of Ontario's DSM results on the Henry Hub price.<sup>280,281</sup> GEC estimated the effect of price suppression using the results from 13 price impact scenarios included in the U.S. Energy Information Administration's 2014

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<sup>277</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit K.5.1, p. 19 (Calculated cost of carbon is equal to \$36.43M using a \$15.22CAD/tonne rather than \$20USD/ton whereas the 15% non-energy benefits adder is equal to \$29.86M (or 122%) based on a total 2018 NPV benefits of its DSM programs being \$228.93M).

<sup>278</sup> Letter of Direction from Minister Chiarelli to the Ontario Power Authority, October 23, 2014, Section 2

<sup>279</sup> May 28, 2015, Joint Auction Results – 2018 Vintage Annual Auction Reserve (Mean) Price for the California and Quebec cap-and-trade program is \$12.46USD/ton or \$15.22CAD/tonne, California Air Resources Board and Quebec Ministry of Sustainable Development, Environment and the Fight against Climate Change

<sup>280</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.2, pp. 8-17

<sup>281</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1, pp. 17-19

Annual Energy Outlook. Each scenario estimated the impact of gas demand change on the Henry Hub natural gas price, keeping the gas supply constant. GEC used regression analysis to model the impacts of changes from the reference case of natural gas consumption on Henry Hub prices using the results from the 13 scenarios from 2015 to 2035. The analyses used changes in base case assumptions to forecast shifts in the US's 2020 natural gas consumption and the 2020 Henry Hub natural gas price. GEC's analysis found a statistically significant relationship between the changes in demand and changes in price. Specifically, it was estimated that a change in demand by  $1 \times 10^9 \text{ m}^3$  in any part of North America will reduce the price at Henry Hub by  $\$0.00027/\text{m}^3$ . This value was then multiplied by the natural gas usage in Ontario of ( $28.21 \times 10^9 \text{ m}^3$ ) to calculate a benefit (reduced price of natural gas) to Ontario customers of \$7.6 million (or  $\$0.0076$  per  $\text{m}^3$  conserved), assuming Ontario's cumulative DSM savings over the 2016-2010 period is  $1 \times 10^9 \text{ m}^3$ . GEC has calculated that the annual price reduction will result in a \$6.2M present value benefit to Union's and Enbridge's customers.

Staff submits that the OEB should not accept the analysis related to price suppression effects provided by GEC for two main reasons; one, there are a number of flaws in GEC's methodology, which are discussed briefly below; and, two, if properly analyzed, the price suppression effects of Ontario DSM on the North American gas market is not significant. Additionally, price suppression impacts will be evaluated as part of the natural gas conservation potential study that Staff is coordinating. The updated potential study will be completed by July 1, 2016.

GEC's methodology is flawed for several reasons. Its analysis is not based on empirical data. Rather, GEC's analyses uses results from 13 scenarios produced from a US Energy Model, as discussed above, in order to establish a correlation between changes in demand for gas to changes in natural gas prices in the US.

Finally, and most critical to this discussion, GEC compares changes in US consumption to prices at the Henry Hub. If there are any price suppression effects, they will be much lower than what has been proposed by GEC as most of Ontario's gas is sourced from the Dawn Hub and Dawn Hub prices are affected by regional market conditions as well as the large volumes of natural gas storage in Ontario. ICF noted that the DRIPE effect is not a significant factor and did not recommend it be included in the Union avoided cost.<sup>282</sup>

Staff submits that the OEB cannot rely on the analysis of the effects of price suppression conducted by GEC for all the reasons Staff has discussed above: it is based on a flawed methodology; it is not based on empirical evidence; it does not take

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<sup>282</sup> Union Gas Limited, Exhibit K14.1, p. 103

the response of natural gas producers into account; it ignores the fact that Ontario does not have any natural gas supply constraints and has access to large gas storage facilities.

Staff is of the view that it would be more appropriate to use a North American natural gas flow model to estimate if there are any price suppression impacts associated with natural gas savings from DSM programs. It is Staff's expectation that price suppression impacts will be considered as part of the updated natural gas conservation potential study. Staff submits that the findings from this study will be incorporated in the mid-term review of the DSM framework.

### Reduce Purchase of Most Expensive Gas

GEC's analysis also included additional benefits attributable to a reduction in purchases of the most expensive gas due to DSM lowering overall demand and subsequently, the need to purchase gas at high prices. GEC estimates that benefits for reduced purchases of the most expensive gas amounts to an average annual value of \$7.2M for Enbridge and \$13.3M for Union. In its report on avoided costs provided for Union, ICF noted that the price forecast model used by Union (SENDOUT) chooses the least cost mix of commodity purchases, consistent with pipeline capacity constraints when determining the optimal supply mix for each demand scenario. The reduction in demand associated with DSM programs leads to a reduction in purchases of the most expensive source of incremental supply. For Union north, this is generally purchased at Empress and citygate purchases at Dawn for Union south.<sup>283</sup>

Staff submits that the additional estimated benefits from reductions of purchases of gas when it is at the most expensive price does not appear to be applicable to Ontario for several reasons pointed out by ICF that are discussed below.

First, in response to cross examination from GEC, ICF noted that it is difficult to isolate and use a reduction of gas purchases from one distinct point in the system and quantify the effects from these reduced purchases to the overall cost of gas due to a series of different sources of supply.<sup>284</sup> ICF further noted that the relationship between reduced costs at one point in time and the effect of these reduced costs on the cost of gas to customers is not a linear one due to a number of factors, including the components of the supply portfolio, such as costs, security and diversity of supply.<sup>285</sup> Union noted that its forecast used to determine its supply plan has been reduced for the effects of DSM.

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<sup>283</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 2, Appendix C, p. 21 (Section 3.3.1)

<sup>284</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, p. 57

<sup>285</sup> Ibid., pp. 58-59

This forecast is used in Union's supply plan to determine when and how much gas should be purchased.<sup>286</sup>

With respect to pipeline capacity requirements, ICF noted that there would likely be no significant differences in the overall avoided cost estimate due to the impacts of DSM programs changing Union's pipeline portfolio. ICF indicated that a reduction in pipeline capacity into any supply market would lead to an increase in average commodity prices, offsetting much of the cost savings associated with holding pipeline capacity.<sup>287</sup> As highlighted by ICF, markets that are capacity constrained and subject to large increases in gas prices during high demand periods, often include a significant cost component associated with a decrease in the regional price of natural gas resulting from a decline in demand attributed to DSM programs. ICF noted that although this effect is seen in New England (due to the relatively small size of the market and degree of infrastructure restraints), it is not seen by Union due to the general integration of the Dawn market with the broader North American markets.<sup>288</sup>

Additionally, ICF noted that Union has 100 PJs of storage capacity located in the Dawn area reserved to serve demand requirements for its customers. Given the availability of Union's storage amounts, the differences in avoided costs that would result from changes in load reductions would have only minor impacts on the resulting avoided costs.<sup>289</sup> ICF noted that the difference between baseload and weather sensitive avoided costs seem relatively low for Union. There is a difference of only 1.7% between baseload and weather sensitive avoided costs for residential and commercial gas supply due to Union's extensive in-franchise storage capacity, as well as Union's existing pipeline capacity, which is able to meet all peak season requirements. This compared to a difference of 13.7% between avoided costs for heating and non-heating loads for Vermont<sup>290</sup>.

Staff is of the view that the proposed effects due to reduced purchases of the most expensive gas are not significant, if applicable at all. Staff submits that due to the complexity of the gas utilities' supply portfolios, the effects proposed by GEC do not appear to be significant. As discussed above, there are no system constraints that would cause the gas utilities to see the effect of large increases in gas prices during high demand periods. Also, the availability of storage, particularly for Union, enables the ability to offset any material impacts of seasonal demand impacts on the price of natural gas.

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<sup>286</sup> Ibid., p. 58

<sup>287</sup> Union Gas Limited, EB-2015-0049, Exhibit A, Tab 2, Appendix C, pp. 21-22

<sup>288</sup> Ibid., p. 30

<sup>289</sup> Ibid., p. 27

<sup>290</sup> Ibid., p. 25

## Avoided Distribution System Costs

With respect to avoided distribution system costs, OEB staff submits that the results of the gas utilities' DSM and infrastructure planning study should be taken into consideration by the OEB at the mid-term review. Any resulting changes in avoided costs due to the results of that study can be appropriately considered at that time.

## **11.0 INTEGRATION AND COLLABORATION OF DSM WITH CDM**

### **Background**

Section 12.0 of the DSM Framework states that the gas utilities should pursue coordinated and integrated programs with electricity distributors and/or the IESO to achieve efficiencies and convenient, integrated programs for their customers. The OEB has outlined specific evidence that distributors should include in their applications to show how the elements of each of their proposed programs can be integrated with electricity Conservation and Demand Management (CDM) programs and coordinated with electricity distributors and/or the IESO. Both Union and Enbridge identified collaboration opportunities in their applications.

### **Enbridge's Proposal**

In its application, Enbridge stated that it has been approached by a number of electricity distributors and the IESO regarding development and involvement in LDC pilot programming, CDM programs, research, and stakeholder consultation.<sup>291</sup> Enbridge further stated that it is currently involved in a number of business case development discussions regarding collaborative CDM programs and pilots.

Enbridge provided an outline of the collaboration discussions with electricity distributors with the key areas of focus being in the following areas: Low Income, Residential Whole Home Retrofits and New Construction, Small Commercial, and Industrial/Commercial custom projects.<sup>292</sup>

In addition, Enbridge noted that it is has been an active participant in various meetings and groups with electricity distributors regarding CDM programs and opportunities for collaboration and integration.

Enbridge has proposed a Collaboration and Innovation Fund (CIF) in each year of its DSM Plan in order to have some available budget to collaborate with electricity distributors on pilot projects. In 2015, Enbridge's CIF is included within its incremental budget. For 2016 to 2020, Enbridge proposed a budget of approximately \$1 million for

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<sup>291</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 4, Schedule 1, p. 2

<sup>292</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 4, Schedule 1, pp. 3-6

each year.<sup>293</sup> Enbridge noted that some electricity distributors are proposing business cases for pilots which in many cases include the requirement for a contribution of time and money from Enbridge.

In its Argument-in-chief, Enbridge stated that there continues to be a good deal of collaboration between the two gas distributors through the technical evaluation committee, the undertaking of joint studies, and the development of the technical reference manual.<sup>294</sup>

### **Union's Proposal**

In its application, Union stated that it will continue to build on its experience of working with the electricity distributors and the IESO to identify opportunities to further collaborate and integrate DSM and electricity CDM programs.<sup>295</sup> Union outlined a preliminary summary of potential collaboration opportunities it has identified which includes program offerings in the following areas: Residential, Commercial/industrial, Performance Based, Large Volume, Low Income, and Market Transformation.<sup>296</sup>

Similar to Enbridge, Union noted that it has been an active participant in various meetings and groups with electricity distributors regarding CDM programs and opportunities for collaboration and integration.

Union did not propose a CIF. Union's proposed budget for pilot projects for the period from 2016 to 2020 will be used to fund pilot projects identified by Union and/or industry partners (such as Enbridge), electricity distributors, and the IESO.<sup>297</sup> The proposed budget for pilots is \$1.0 million for 2016 and 2017, respectively, and \$0.5 million for each remaining year (2018, 2019, and 2020).<sup>298</sup>

In its Argument-in-chief, Union stated that it will continue to focus on collaboration with Enbridge and electricity distributors, as it has done in the past.<sup>299</sup>

### **OEB Staff Expert Evidence<sup>300</sup>**

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<sup>293</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit B, Tab 1, Schedule 4, pp. 3-5

<sup>294</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, p. 109

<sup>295</sup> Union Gas Limited, Exhibit A, Tab 1, Appendix C, p. 1

<sup>296</sup> Union Gas Limited, Exhibit A, Tab 3, Appendix C, pp. 3-7

<sup>297</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T11.Union.OGVG.7

<sup>298</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 3, p. 6 (Table 2)

<sup>299</sup> EB-2015-0029 / EB-2015-0049, Hearing Transcript, Vol. 14, 2015, p. 37

<sup>300</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEB.Staff.1, p. 106-111

Synapse made recommendations in its evidence regarding coordination between the gas utilities and electricity distributors and regarding coordination between the gas utilities. Overall, Synapse noted that the gas utilities should take a more proactive role regarding collaboration with each other and with the electricity distributors. Synapse indicated that the gas utilities' current "ad hoc" approach to collaboration leads to inefficient and inconsistent efforts. As a result, Synapse recommended that the gas utilities should develop a consistent, transparent, and efficient approach to program design. Specific to this, the gas utilities should develop standard program design "templates" for coordinating electricity and gas programs. Synapse suggested that the standard template approach will also result in much more consistent and transparent arrangements between electric and gas distributors.

### **OEB Staff Submission Submission Summary**

Staff supports the gas utilities proposals to continue to look into collaborative efforts in the identified program areas discussed in their applications, and the continued collaboration between the gas utilities. In addition, Staff submits that the gas utilities should continue to look into other areas of potential collaboration with electricity distributors given that the CDM Programs are now being finalized under the new framework for electricity distributors.

Staff also recommends a new collaboration scorecard to motivate and incent the gas distributors to more fully pursue collaborative efforts with electricity distributors. Below Staff discusses its position on collaboration in more detail.

### **Discussion and Recommendations**

Staff submits that continuing collaborative efforts with electricity distributors are beneficial in meeting the expectations set out in the DSM Framework. The gas utilities should continue to pursue collaborative efforts on home weatherization programs, low-income programs, and commercial and industrial programs.

Staff recommends that Enbridge and Union implement a new scorecard to further incent and encourage the gas utilities to pursue and initiate collaborative opportunities with electricity distributors. As the gas utilities have noted that the availability of a shareholder incentive attracts senior management attention and ensures that DSM activities receive the necessary resources to drive performance, Staff submits that allocation a portion of the overall shareholder incentive level to collaborative efforts should provide the necessary motivation to ensure the gas utilities fully pursue and implement collaborative DSM/CDM programs within the new multi-year DSM term.

Staff submits that a weighted scorecard be developed, with a shareholder incentive equal to 10% of the overall maximum incentive, as a reasonable starting point considering the gas utilities have not had a collaboration scorecard in the past and some implementation decisions may be out of their control. Staff proposes that the following metrics be included in the collaboration scorecard:

- a) Percent of electricity distributors the gas utilities have partnered with for at least one joint offering
- b) Percent of the DSM programs that are delivered in collaboration with electricity distributors
- c) Percent of natural gas customers who have participated in a collaborative program with electricity distributors

In addition, OEB staff supports Synapse's recommendation to develop a standard design of programs for collaboration purposes. OEB staff believes it would be beneficial to the gas utilities to continue leveraging the resources of electricity distributors where necessary to facilitate joint DSM and CDM efforts.

## **12.0 FUTURE INFRASTRUCTURE PLANNING ACTIVITIES**

### **Background**

Section 13.0 of the DSM Framework sets out the OEB's expectation that applications by gas utilities for leave-to-construct natural gas infrastructure projects, evidence must be provided on how DSM has been considered as an alternative at the preliminary stage of project development.

The DSM Framework states that if a gas utility identifies DSM as a practical alternative to a future infrastructure investment project, it may apply for incremental DSM funds to administer a specific DSM program to the geographic area where a system constraint has been identified.

The DSM Framework requires that the gas utilities should each conduct a study based on a consistent methodology to determine the appropriate role that DSM may serve in future system planning efforts. The studies are to be completed as soon as possible and no later than in time to inform the mid-term review of the DSM Framework. As part of their DSM plans, the gas utilities were to include a preliminary scope of the study they plan to conduct and propose a preliminary transition plan that outlines how they plan to begin to include DSM as part of their future infrastructure planning efforts.

### **Enbridge's Proposal**

In its application, Enbridge filed an outline of the scope, preliminary timeline, and preliminary transition plan of the Integrated Resource Planning (IRP) study. Enbridge also outlined the approach and method that it will undertake to include DSM as part of its future infrastructure planning efforts. As part of its preliminary transition plan, Enbridge stated that it plans to begin to include DSM as part of its future infrastructure planning efforts by developing and testing transition activities as part of its study.<sup>301</sup> This will be done by using real examples of planned infrastructure projects as case studies in the research and the case study examples will be used to develop and test the method(s) by which the DSM alternative will be assessed.<sup>302</sup>

An initial amount of \$300,000 has been budgeted for the IRP study. Enbridge states that if a decision from the OEB is received by early Q4 it anticipates it would commence the IRP study in late 2015.<sup>303</sup>

### **Union's Proposal**

In its application, Union did not provide a preliminary study plan. Union only outlined its preliminary proposed approach which outlined the questions it will study to determine the potential effects DSM can have on deferring, postponing or reducing future capital investments.<sup>304</sup> Union stated that at the time of filing its application it was premature for it to propose a transition plan and that it does not currently have the information to propose a transition plan.<sup>305</sup> Union has allocated \$200,000 for 2015 and \$250,000 for 2016 for its study.<sup>306</sup>

### **Expert Evidence**

#### **OEB Staff Expert Evidence**

Synapse noted that Enbridge's proposed scope of work for its IRP study is a reasonable start and provided several potential areas for improvement for Enbridge to consider as follows:

- a) Investigate the potential for demand response programs to address gas infrastructure needs.
- b) Investigate the role that new construction programs, both residential and commercial and industrial, can play in addressing infrastructure needs.

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<sup>301</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit C, Tab 1, Schedule 3, p. 10

<sup>302</sup> Ibid.

<sup>303</sup> Enbridge Gas Distribution, EB-2015-0049, Exhibit I.T12.EGDI.CCC.19

<sup>304</sup> Union Gas Limited, EB-2015-0029, Exhibit A, Tab 1, Appendix D, p. 1

<sup>305</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T12.Union.GEC.14

<sup>306</sup> Union Gas Limited, EB-2015-0029, Exhibit B.T3.Union.LPMA.16

- c) Modify the avoided cost inputs to its cost-benefit screening practice, but does not need to develop a new screening test.
- d) Develop its first integrated resource plan in a timely fashion, and should allow time for stakeholder feedback and input.
- e) Incorporate best practices from electricity IRP in its gas IRP study, as appropriate.
- f) Work with Union to develop consistent IRP Scope Studies, and consistent IRP Studies.<sup>307</sup>

With respect to Union, Synapse noted that it provided significantly less detail than Enbridge and did not include a transition plan. Synapse also made the same recommendations for Union as it made for Enbridge (which are noted above). Synapse also recommended that Union should provide more detail on (a) the study scope; (b) the study approach; (c) the study method; (d) the timeline; and, (e) a preliminary transition plan. Synapse noted that Union's argument that it is premature to develop a transition plan is not compelling, particularly in light of the transition plan that was filed by Enbridge.

### **GEC Expert Evidence**

The GEC expert evidence stated the approach proposed by Enbridge has merit but needs refinement, while Union's proposed approach was inadequate. The GEC expert made the following recommendations for the OEB<sup>308</sup>:

- a) Accept Enbridge's proposed study scope with the following modifications:
  - i. Make the development of hourly peak day load shapes for each major efficiency measure the first task and deliverable of the study.
  - ii. Case studies for the study should be selected through a structured process.
  - iii. Ensure that at least one case study is launched as a pilot project before the end of 2016 to enhance the transition plan.
- b) Instruct Union to work with Enbridge on its study.
- c) Require Union to adopt the same transition plan as Enbridge's, including the launch of a pilot infrastructure deferral project before the end of 2016.
- d) Instruct both utilities to work with interested stakeholders on their studies and the development of pilot projects.
- e) Establish penalties for the utilities if they do not abide by the OEB's previous order to consider DSM as an alternative to infrastructure investments in all future leave to construct projects.

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<sup>307</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEB.Staff.1, pp. 128-131

<sup>308</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.GEC.1 (Corrected August 12, 2015), pp. 47

## **OEB Staff Submission Submission Summary**

Staff submits that the utilities must work together and complete individual, but consistent, studies in how to integrate DSM in infrastructure planning by the middle of 2017.

### **Discussion and Recommendations**

Staff is of the view that the proposed scope of work filed by Enbridge should be used as a basis for the gas utilities' studies and that an expanded joint scope of work be developed, incorporating the recommendations provided by GEC and Synapse. Specifically, the gas utilities should ensure that hourly peak day load shapes (and/or an estimate of the relationship between peak hour savings and annual savings) are developed for each potential efficiency measure, as suggested by GEC.

The studies should develop a long-term forecast of potential infrastructure needs for at least 10 years, with defined criteria for selecting case studies for potential infrastructure projects, considering question such as: is the project driven by load growth? How many years before the infrastructure is needed? What is the maximum load reduction required? What is the cost of the infrastructure project?

The gas utilities should incorporate the best practices in their studies as noted by Synapse.<sup>309</sup>

Given the importance of future infrastructure planning, staff believes that the utilities may benefit from learning from the experiences in the electricity sector. Staff recommends that the gas utilities should complete their individual infrastructure studies by the middle of 2017. This will ensure that they can be fully considered and incorporated into their DSM plans and/or system planning as soon as possible, and that they will be filed in time to inform the mid-term review of the DSM Framework. It will also ensure that the OEB is informed on the results of the studies in order to determine the appropriateness of the utilities' DSM budgets.

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<sup>309</sup> EB-2015-0029 / EB-2015-0049, Exhibit L.OEB.Staff.1, p. 129

## 13.0 OTHER

### 13.1 – DSM Plan Updating Process

In the event the OEB makes findings that require amendments/updates to the gas utilities' DSM plans, Staff recommends the OEB initiate a process that allows the gas utilities to update their plans based on the OEB's findings.

Staff views this process as similar to that which is followed in a rates proceeding. As opposed to the gas utilities filing a draft rate order, they will file updated DSM plans that are revised in accordance with the findings from the OEB's Decision. A written comment period would follow prior to the OEB making its Final Decision. Staff is of the view that allowing for comments from parties helps ensure that the OEB's findings have been fully and appropriately included in the updated DSM plans.

Staff suggests that the OEB indicate that comments for parties are limited to the gas utilities' updates/revisions to their DSM plans in response to the OEB's Decision. A suggested process outline is provided below.

<b>Process to Update DSM Plans</b>	
<b>1) OEB Decision</b>	- Direction to the gas utilities to file updated DSM Plans addressing the OEB's findings
<b>2) Gas Utilities File Updated DSM Plans</b>	- Updates DSM Plans clearly show where changes have been made and include a summary of all changes - Allocated time allows for stakeholder input
<b>3) Written comments from all parties</b>	- Parties, including Staff, to provide comments on the consistency of the updates compared to the OEB's direction. Parties are not to argue issues which the OEB has made findings.
<b>4) Written reply comments from gas utilities</b>	
<b>5) Final OEB Decision</b>	

### 13.2 – Mid-Term Review

The March 26, 2014 Directive from the Minister of Energy requires the DSM Framework to span a period of six years, commencing on January 1, 2015, and must include a mid-term review to align with the mid-term review of the electricity Conservation First Framework. In the letter of direction to the OPA, the Minister requires that the POA complete a mid-term review of the Conservation First Framework no later than June 1, 2018.<sup>310</sup>

<sup>310</sup> Letter of Direction from Minister Bob Chiarelli to the Ontario Power Authority, March 31, 2014, Section 6

Section 1.3 of the DSM Framework discusses the mid-term review of the 2015-2020 DSM plans. The OEB indicated that the mid-term review will allow it to assess the gas utilities' performance and the appropriateness of the long-term DSM targets. The OEB also stated that the mid-term review will examine annual metrics, budget levels, impact on customer rates and shareholder incentives.

Both Enbridge and Union offered suggestions on the process the OEB should take when conducting the mid-term review. Both gas utilities were generally of the view that this should be a higher-level review to ensure their plans are still reasonable.

Staff is of the view that the full scope of the mid-term review cannot be addressed at this point. Staff notes that the cap-and-trade program may have a material impact on the size of the gas utilities' DSM plans. Further, the results of the updated achievable natural gas energy efficiency potential study and DSM's role in infrastructure planning study will be available for the OEB and stakeholders to consider. At the time of the mid-term review, the gas utilities will also be two years into their new multi-year DSM plans, with results available to a number of new offerings (including the results of the behavioural and large volume programs, as well as collaboration efforts).

Throughout this submission Staff has proposed a number of items for the OEB to either approve until the mid-term review, or review and consider at the mid-term review. Staff has summarized these items below:

<b>Recommendations – Approve until Mid-term</b>	
Item	Section
Union's Optimum Home offering	Section 5.4 & Section 5.5
Residential behavioural pilot programs	Section 5.3

<b>Recommendations – Review at Mid-term</b>	
Item	Section #
Targets – review appropriateness (cap-and-trade program)	Section 2
Budget – consider cap-and-trade details, infrastructure study, achievable potential study	Section 3
Union's Large Volume program – consider cap-and-trade details	Section 5.2
Residential behavioural pilot results – both gas utilities	Section 5.3
Union's Optimum Home offering – review effectiveness to determine if it should continue	Section 5.4 & Section 5.5
Union – Proposals for additional market transformation new construction offers	Section 5.5
Gas utilities' infrastructure planning studies	Section 9 & Section 12

All of which is respectfully submitted.