

March 10, 2021

VIA RESS AND EMAIL

Ms. Christine Long
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Long:

**Re: Enbridge Gas Inc. (Enbridge Gas)
Ontario Energy Board File No.: EB-2021-0072
2019 Demand Side Management (DSM) Deferral and Variance Account
Disposition Application**

Enclosed is Enbridge Gas's application and evidence concerning the final disposition and recovery of certain 2019 DSM program year-end deferral and variance account balances.¹ The accounts which are the subject of this Application and the balances recorded (excluding interest) are as follows in Tables 1 and 2.

Table 1
2019 DSM Deferral and Variance Account Balances - EGD Rate Zone

| Account (\$ millions) | 2019 |
|--------------------------------|-----------------|
| DSM Incentive Deferral Account | \$6.717 |
| DSM Variance Account | \$6.422 |
| LRAM Variance Account | \$0.009 |
| Total Balance | \$13.148 |

Table 2
2019 DSM Deferral and Variance Account Balances - Union Rate Zones²

| Account (\$ millions) | 2019 |
|--------------------------------|----------------|
| DSM Incentive Deferral Account | \$5.950 |
| DSM Variance Account | \$2.336 |
| LRAM Variance Account | \$0.928 |
| Total Balance | \$9.214 |

¹ Enbridge Gas was formed by the amalgamation of Enbridge Gas Distribution Inc. ("EGD") and Union Gas Limited ("Union"), on January 1, 2019 pursuant to the Ontario Business Corporations Act, R.S.O. 1990, c. B. 16. Enbridge Gas carries on the business of selling, distributing, transmitting and storing natural gas in Ontario within the meaning of the Ontario Energy Board Act, 1998 (the "Act").

² Collectively, the Union North and Union South rate zones are referred to as the "Union rate zones".

March 10, 2021

Page 2

Enbridge Gas proposes that disposition of these deferral and variance account balances be implemented in alignment with other rate changes through the Quarterly Rate Adjustment Mechanism (QRAM), effective as soon as October 1, 2021. For a typical residential customer in the EGD rate zone with annual consumption of 2,400 m³, the estimated one-time billing adjustment charge is \$7.40. For a typical residential customer in the Union South rate zone with annual consumption of 2,200 m³, the estimated one-time billing adjustment charge is \$7.99. For a typical residential customer in the Union North rate zone with annual consumption of 2,200 m³, the estimated one-time billing adjustment charge is \$0.80.

The above noted submission has been filed electronically through the OEB's RESS and will be made available on Enbridge Gas's website at:

<https://www.enbridgegas.com/Regulatory-Proceedings>

If you have any questions, please contact the undersigned.

Sincerely,

(Original Digitally Signed)

Asha Patel
Technical Manager, Regulatory Applications

cc.: D. O'Leary (Aird & Berlis)
EB-2019-0003 (Intervenors)
EB-2020-0067 (Intervenors)

A – Administration

| <u>Exhibit</u> | <u>Tab</u> | <u>Schedule</u> | <u>Appendix</u> | <u>Contents of Schedule</u> |
|----------------|------------|-----------------|-----------------|-----------------------------|
| A | 1 | 1 | | Exhibit List |
| | 2 | 1 | | Application |
| | 3 | 1 | | Background and Overview |
| | 4 | 1 | | 2019 DSM Annual Report |

B – EGD Rate Zone

| <u>Exhibit</u> | <u>Tab</u> | <u>Schedule</u> | <u>Appendix</u> | <u>Contents of Schedule</u> |
|----------------|------------|-----------------|-----------------|--|
| B | 1 | 1 | | EGD Rate Zone: Account Balances and Approvals Sought |
| | 2 | 1 | | EGD Rate Zone: Rate Allocation |
| | | | A1 | EGD Rate Zone: 2019 LRAMVA Balance |
| | | | A2 | EGD Rate Zone: Unit Rate & Type of Service (Clearing in October 2021) |
| | | | A3 | EGD Rate Zone: 2019 DSM Deferral & Variance Account Balances to be Cleared including Interest |
| | | | A4 | EGD Rate Zone: 2019 Classification & Allocation of Deferral & Variance Account Balances |
| | | | A5 | EGD Rate Zone: 2019 Allocation & Unit Rate Derivation by Type of Service |
| | 3 | 1 | | EGD Rate Zone: Estimated Annual Bill Impact |
| | | | A1 | EGD Rate Zone: 2019 DSM Deferral & Variance Account Clearing Bill Adjustment in October 2021 for Typical Customers |

C – Union Rate Zones

| <u>Exhibit</u> | <u>Tab</u> | <u>Schedule</u> | <u>Appendix</u> | <u>Contents of Schedule</u> |
|----------------|------------|-----------------|-----------------|--|
| C | 1 | 1 | | Union Rate Zones: Account Balances and Approvals Sought |
| | | 2 | | Union Rate Zones: Rate Allocation |
| | | | A1 | Union Rate Zones: 2019 LRAMVA Balance |
| | | | A2 | Union Rate Zones: 2017 LRAM Audited Revenue Impacts |
| | | | A3 | Union Rate Zones: 2018 LRAM Audited Revenue Impacts |
| | | | A4 | Union Rate Zones: 2019 LRAM Audited Revenue Impacts |
| | | | A5 | Union Rate Zones: Combined Unit Rates |
| | | | A6 | Union Rate Zones: 2019 DSM Deferral & Variance Account Balances to be Cleared including Interest |
| | | | A7 | Union Rate Zones: 2019 Allocation of Deferral & Variance Account Balances |
| | | | A8 | Union Rate Zones: 2019 General Service Unit Rates for Prospective Recovery/(Refund) |
| C | 3 | 1 | A9 | Union Rate Zones: 2019 Contract Unit Rates for One-Time Adjustment |
| | | | | Union Rate Zones: Estimated Annual Bill Impact |
| | | | A1 | Union Rate Zones: 2019 Deferral & Variance Account Clearing Bill Impacts for General Service Customers |
| | | | A2 | Union Rate Zones: 2019 Deferral & Variance Account Clearing Bill Impacts for Contract Customers |

ONTARIO ENERGY BOARD

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

AND IN THE MATTER OF an application by Enbridge Gas Inc. for an Order or Orders approving the balances and clearance of certain non-commodity 2019 Demand Side Management Deferral and Variance Accounts into rates, within the next available QRAM.

APPLICATION

1. Enbridge Gas Inc. (“Enbridge Gas” or the “Company”), was formed by the amalgamation of Enbridge Gas Distribution Inc. (“EGD”) and Union Gas Limited (“Union”), on January 1, 2019 pursuant to the *Ontario Business Corporations Act*, R.S.O. 1990, c. B. 16. Enbridge Gas carries on the business of selling, distributing, transmitting and storing natural gas in Ontario within the meaning of the *Ontario Energy Board Act*, 1998 (the “Act”).
2. EGD and Union (collectively, referred to as the “Utilities”) filed an application dated November 2, 2017 with the Ontario Energy Board (“OEB or the Board”) pursuant to section 43(1) of the Act for an order or orders granting leave to amalgamate into a single company, referred to as “Amalco”, effective January 1, 2019.¹ On November 23, 2017, the Utilities applied to the Board pursuant to section 36 of the Act, for an order approving a rate setting mechanism and associated parameters for the deferred rebasing period, effective January 1, 2019.² The Board issued its Decision and Order for the amalgamation and rate setting mechanism (the “MAADs Decision”) on August 30, 2018.

¹ EB-2017-0306 Enbridge Gas Distribution Inc. and Union Gas Limited – MAAD.

² EB-2017-0307 Enbridge Gas Distribution Inc. and Union Gas Limited – Rate Setting Mechanism.

3. Enbridge Gas hereby applies to the OEB pursuant to Section 36 of the Act and pursuant to the MAADs Decision and Order for such final or interim Orders and Accounting Orders as necessary approving the final balances in the 2019 Demand Side Management (“DSM”) Deferral and Variance Accounts (set out in Table 1 and Table 2 – excluding interest) and the disposition of these balances within the next available Quarterly Rate Adjustment Mechanism (“QRAM”) application following the OEB’s approval,³ effective as soon as October 1, 2021: (i) for the EGD rate zone through a one-time adjustment in rates; and (ii) for the Union rate zones,⁴ through a one-time adjustment in rates.

Table 1
2019 DSM Deferral and Variance Account Balances - EGD Rate Zone

| Account | 2019 |
|--------------------------------|---------------------|
| DSM Incentive Deferral Account | \$6,717,372 |
| DSM Variance Account | \$6,421,667 |
| LRAM Variance Account | \$9,082 |
| Total Balance | \$13,148,121 |

Table 2
2019 DSM Deferral and Variance Account Balances - Union Rate Zones

| Account | 2019 |
|--------------------------------|--------------------|
| DSM Incentive Deferral Account | \$5,950,363 |
| DSM Variance Account | \$2,335,533 |
| LRAM Variance Account | \$928,440 |
| Total Balance | \$9,214,336 |

4. Enbridge Gas further applies to the OEB for all necessary Orders and Directions concerning pre-hearing and hearing procedures necessary for the determination of this application.

³ Please see Exhibit B, Tab 3, Schedule 1 and Exhibit C, Tab 3, Schedule 1, for details of proposed allocation and disposition methodologies, timing of disposition and derivation of unit rates.

⁴ Collectively, the Union North and Union South rate zones are referred to as the “Union rate zones”.

5. Enbridge Gas requests that the OEB's review of this application proceed by means of a written hearing in English.
6. This application is supported by written evidence. This evidence may be amended, from time to time, as required by the OEB or as circumstances may require.
7. The persons affected by this Application are the customers resident or located in the municipalities, police villages, and Indigenous communities served by Enbridge Gas, together with those to whom Enbridge Gas sells gas, or on whose behalf, Enbridge Gas distributes, transmits or stores gas. It is impractical to set out the names and addresses of all the customers because they are too numerous.
8. Enbridge Gas requests that all documents relating to this application and its supporting evidence, including the responsive comments of any interested party, be served on:

The Applicant:

Regulatory Contact:

Ms. Asha Patel
Technical Manager, Regulatory Applications
Enbridge Gas Inc.

Address for personal service:

500 Consumers Road
Willowdale, Ontario M2J 1P8
P. O. Box 650
Scarborough, Ontario M1K 5E3

Mailing address:

Telephone:

416-495-5642

Email:

Asha.Patel@enbridge.com
EGIRegulatoryProceedings@enbridge.com

The Applicant's counsel:

Dennis M. O'Leary
Aird & Berlis LLP

Address for personal service and mailing
address:

Brookfield Place, Box 754
Suite 1800, 181 Bay Street
Toronto, Ontario
M5J 2T9

Telephone

(416) 865-4711

Email:

doleary@airdberlis.com

DATED: March 10, 2021

Enbridge Gas Inc.

(Original Digitally Signed)

Asha Patel
Technical Manager, Regulatory Applications

BACKGROUND AND OVERVIEW

1. The Deferral and Variance Account balances which are the subject of this proceeding relate to DSM activities in 2019 (please see Table 1 and 2 below for a summary of these balances). Enbridge Gas is seeking approval for the balances and clearance through to rates for 2019 DSM program year DSM-related Deferral and Variance Accounts. Enbridge Gas proposes to dispose of the account balances with the first available QRAM following Board approval. For the purposes of calculating bill impacts, Enbridge Gas assumes implementation with the October 1, 2021 QRAM.
2. As outlined in the OEB's 2015-2020 DSM Framework for Natural Gas Distributors (EB-2014-0134) (the "Framework"),¹ the Board indicated it "...is of the view that it [the Board] is in the best position to coordinate the evaluation process throughout the DSM framework period".² As outlined in the Filing Guidelines to the DSM Framework for Natural Gas Distributors (2015-2020) (EB-2014-0134) (the "Guidelines"):³

Consistent with past practices, recovery and disposition of DSM related amounts (i.e., DSM Variance Account ("DSMVA"), DSM Incentive Deferral Account ("DSMIDA"), and Lost Revenue Adjustment Mechanism Variance Account ("LRAMVA")) will be filed by the natural gas utilities annually, based on the actual amount of natural gas savings resulting from the utilities' DSM programs in relation to the annual plans targets. The DSM amounts include program spending, shareholder incentive amounts and lost revenues in relation to the DSM programs delivered by the natural gas utility.

¹ EB-2014-0134, Report of the Board, DSM Framework for Natural Gas Distributors (2015-2020), December 22, 2014.

² Framework, p. 30.

³ Guidelines, p. 36.

3. On August 21, 2015, the OEB issued a letter which provided additional details regarding a new OEB-Staff coordinated evaluation governance structure.⁴ This letter included the following information:
- The OEB would be responsible for coordinating and overseeing the evaluation and audit process, including selecting a third-party Evaluation Contractor (“EC”).
 - The EC would carry out the evaluation and audit processes and would draft an Evaluation, Monitoring and Verification (“EM&V”) plan for the natural gas utilities’ (EGD and Union, collectively referred to as the “Utilities”) DSM programs.
 - An Evaluation Advisory Committee (“EAC”) would be formed to provide input and advice to the OEB on the development of the EM&V plan and on the evaluation and audit of the DSM results.
4. Furthermore, the letter noted that the EAC would be comprised of:
- Experts representing non-utility stakeholders, with demonstrated experience and expertise in the evaluation of DSM technologies and programs, natural gas energy efficiency technologies, multi-year impact assessments, net-to-gross (“NTG”) studies, free ridership analysis and natural gas energy efficiency persistence analysis;
 - Expert(s) retained by the OEB;
 - Representatives from the Independent Electricity System Operator (“IESO”);
 - Representatives from each natural gas utility; and
 - Representatives from the Ministry of Energy and the Environmental Commissioner of Ontario, who will participate as observers.

⁴ EB-2015-0245, OEB Letter, 2015-2020 DSM Evaluation Process of Program Results, August 21, 2015.

2019 EM&V Process

5. The 2019 DSM program year represents the fifth year of operation under the OEB's Framework and Guidelines and Enbridge Gas's (formerly EGD and Union) OEB-approved 2015-2020 DSM Plans (EB-2015-0029/0049) (the "DSM Plans").⁵

In 2019, the non-utility stakeholders appointed to the EAC were:

- Chris Neme, Energy Futures Group; and
- Jay Shepherd, Shepherd Rubenstein Professional Corporation.

In 2019, the independent experts appointed to the EAC were:

- Ted Kesik, Knowledge Mapping Inc.; and
- Robert Wirtshafter, Wirtshafter Associates Inc.

6. The methodologies used by Enbridge Gas to determine the amounts recorded in the DSMVA,⁶ LRAMVA⁷ and DSMIDA⁸ for the 2019 DSM program year for each of the EGD rate zone and the Union rate zones, were the subject of the:

- (i) Framework;
- (ii) Guidelines;
- (iii) Decision and Order and Revised Decision and Order of the Board on Enbridge Gas's DSM Plans;⁹
- (iv) OEB's Mid-Term Review of the Framework (EB-2017-0127/0128) and related Report of the Board;¹⁰

⁵ EB-2015-0029, 2015-2020 DSM Plan, Enbridge Gas Distribution Inc, April 1, 2015; EB-2015-0049, 2015-2020 DSM Plan, Union Gas Limited, April 1, 2015.

⁶ EGD rate zone Account No. 179.06 and Union rate zones Account No. 179-111.

⁷ EGD rate zone Account No. 623.010 and Union rate zones Account No. 179-75.

⁸ EGD rate zone Account No. 179.26 and Union rate zones Account No. 179-126.

⁹ EB-2015-0029/0049, Decision and Order, January 20, 2016; EB-2015-0029/0049, Revised Decision and Order, February 24, 2016.

¹⁰ EB-2017-0127/0128, Report of the Ontario Energy Board – Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020), November 29, 2018.

- (v) Utilities' 2015 Clearance of DSM Deferral and Variance Accounts proceedings (EB-2017-0323 and EB-2017-0324); and
 - (vi) Utilities' 2016 Clearance of DSM Deferral and Variance Accounts proceedings (EB-2018-0300/0301).
 - (vii) Utilities' 2017 and 2018 Clearance of DSM Deferral and Variance Accounts proceeding (EB-2020-0067)
7. The EC concluded 2019 DSM program year EM&V activities in 2020 with the release and presentation of the following report to OEB Staff and the EAC:
- 2019 Natural Gas DSM Annual Verification (December 3, 2020).¹¹
8. Enbridge Gas is in receipt of the 2019 Natural Gas Demand-Side Management Annual Verification report (the "Verification Report") for the EGD rate zone and Union rate zones completed by the EC (DNV GL Energy Insights USA, Inc., f/k/a KEMA, Inc.) that was selected by OEB Staff. The 2019 Verification report provides the EC's conclusions regarding the amounts of: energy savings, lost revenue, shareholder incentive amounts and cost-effectiveness, for the DSM programs offered by Enbridge Gas in 2019. The report also includes the EC's findings and recommendations regarding cost reduction, improvement of savings accuracy and risk reduction related to Enbridge Gas's DSM programs. Enbridge Gas's responses to each finding and recommendation were provided by the Company to the EC, and embedded into the Verification Report in Section 10.
9. The 2019 DSM-related Deferral and Variance Account balances, which are the subject of this Application and proposed for disposition as set out in Tables 1 and 2

¹¹ <https://www.oeb.ca/sites/default/files/2019-Natural-Gas-Demand-Side-Management-Annual-Verification-Report.pdf>

below,¹² are consistent with the above reports and the EC's opinion on energy savings, lost revenue, shareholder incentive amounts and cost-effectiveness.

Table 1
2019 DSM Deferral and Variance Account Balances - EGD Rate Zone

| Account | 2019 |
|--------------------------------|---------------------|
| DSM Variance Account | \$6,717,372 |
| DSM Incentive Deferral Account | \$6,421,667 |
| LRAM Variance Account | \$9,082 |
| Total Balance | \$13,148,121 |

Table 2
2019 DSM Deferral and Variance Account Balances - Union Rate Zones¹³

| Account | 2019 |
|-------------------------------------|--------------------|
| DSM Variance Account | \$5,950,363 |
| DSM Incentive Deferral Account | \$2,335,533 |
| LRAM Variance Account ¹⁴ | \$928,440 |
| Total Balance | \$9,214,336 |

10. Details of Enbridge Gas's proposed allocation of 2019 DSM-related Deferral and Variance Account balances to rate classes, disposition methodology and unit rates for disposition are set out at Exhibit B, Tab 3, Schedule 1, for the EGD rate zone and at Exhibit C, Tab 3, Schedule 1, for the Union rate zones.
11. Final 2019 DSM Annual Reports are included within this submission at Exhibit B, Tab 2, Schedules 1 for the EGD rate zone and at Exhibit C, Tab 2, Schedule 1 for the Union rate zones, respectively.

¹²These balances as presented do not include interest. Interest will be accrued up to the disposition date in accordance with the applicable accounting orders and reflected in the draft rate order filed following the Board's Decision in this proceeding.

¹³ Collectively, the Union North and Union South rate zones are referred to as the "Union rate zones".

¹⁴The 2019 LRAMVA account balance includes volume variances related to 2017, 2018 and 2019 audited Union rate zones results at 2019 rates. This is discussed in further detail in Exhibit C, Tab 3, Schedule 1.

2019 Demand Side Management Annual Report

Enbridge Gas Inc.
March 9, 2021



Table of Contents

| | |
|---|-----------|
| Table of Contents | 1 |
| List of Tables | 4 |
| Executive Summary | 7 |
| 1. Introduction | 8 |
| 2. DSM Framework | 9 |
| 2.1 2015-2020 DSM Plans | 9 |
| 2.2 Scorecard Target Setting | 11 |
| 2.3 Evaluation Governance | 11 |
| 2.4 Cost-Effectiveness Screening | 12 |
| 2.5 Avoided Cost Assumptions | 12 |
| 2.6 Technical Resource Manual | 12 |
| 3. OEB Data Reporting Requirements (EGD Rate Zone) | 14 |
| 4. OEB Data Reporting Requirements (Union Rate Zones) | 21 |
| 5. Programs and Offerings (EGD Rate Zone) | 28 |
| 5.1 Resource Acquisition Program | 28 |
| 5.1.1 Home Efficiency Rebate Offering | 28 |
| 5.1.2 Residential Adaptive Thermostat Offering | 30 |
| 5.1.3 Custom Commercial Offering | 31 |
| 5.1.4 Custom Industrial Offering | 32 |
| 5.1.5 Commercial & Industrial Prescriptive (Fixed) Incentive Offering | 33 |
| 5.1.6 Commercial & Industrial Direct Install Offering | 35 |
| 5.1.7 Energy Leaders Offering | 36 |
| 5.2 Low-Income Program | 36 |
| 5.2.1 Home Winterproofing Offering | 37 |
| 5.2.2 Multi-Residential Affordable Housing Offering | 38 |
| 5.2.3 Savings by Design Affordable Housing Offering | 39 |
| 5.3 Market Transformation & Energy Management Program | 40 |



| | | |
|-------|---|----|
| 5.3.1 | Savings by Design Residential Offering | 40 |
| 5.3.2 | Savings by Design Commercial Offering | 41 |
| 5.3.3 | School Energy Competition Offering | 42 |
| 5.3.4 | Run it Right Offering | 43 |
| 5.3.5 | Comprehensive Energy Management Offering | 44 |
| 6. | Programs and Offerings (Union Rate Zones) | 46 |
| 6.1 | Residential Program | 46 |
| 6.1.1 | Home Efficiency Rebate Offering | 46 |
| 6.1.2 | Residential Adaptive Thermostat Offering | 48 |
| 6.2 | Commercial/Industrial Program | 49 |
| 6.2.1 | Commercial/Industrial Prescriptive Offering | 49 |
| 6.2.2 | Commercial/Industrial Direct Install Offering | 51 |
| 6.2.3 | Commercial/Industrial Custom Offering | 52 |
| 6.3 | Low-Income Program | 53 |
| 6.3.1 | Home Weatherization Offering | 53 |
| 6.3.2 | Furnace End-of-Life Upgrade Offering | 54 |
| 6.3.3 | Indigenous Offering | 55 |
| 6.3.4 | Multi-Residential Affordable Housing Offering | 56 |
| 6.4 | Large Volume Program | 56 |
| 6.4.1 | Large Volume Direct Access Offering | 57 |
| 6.5 | Market Transformation Program | 57 |
| 6.5.1 | Optimum Home Offering | 58 |
| 6.5.2 | Commercial Savings by Design Offering | 59 |
| 6.6 | Performance-Based Program | 59 |
| 6.6.1 | RunSmart Offering | 60 |
| 6.6.2 | Strategic Energy Management Offering | 61 |
| 7. | Evaluation | 62 |
| 7.1 | Impact Evaluation and Audit | 62 |
| 7.2 | Process Evaluation | 62 |
| 8. | Results and Spend (EGD Rate Zone) | 64 |



| | | |
|------------|---|------------|
| 8.1 | Scorecard Results and Shareholder Incentive | 64 |
| 8.2 | Lost Revenue Adjustment Mechanism | 65 |
| 8.3 | Cost-Effectiveness results | 66 |
| 8.4 | Budgets and Spending | 67 |
| 9. | Results and Spend (Union Rate Zones) | 72 |
| 9.1 | Scorecard Results and Shareholder Incentive | 72 |
| 9.2 | Lost Revenue Adjustment Mechanism | 74 |
| 9.3 | Cost-Effectiveness Results | 74 |
| 9.4 | Budgets and Spending | 76 |
| | Appendix A: 2019 Avoided Costs | 81 |
| | Appendix B: Target Setting Methodology | 85 |
| | Appendix C: Offering Details (EGD Rate Zone) | 87 |
| | Appendix D: Offering Details (Union Rate Zones) | 97 |
| | Appendix E: Abbreviations and Acronyms List | 108 |
| | Appendix F: Home Efficiency Rebate Offering Process Evaluation Report (Union Rate Zones) | 110 |



List of Tables

| | | |
|------------|---|----|
| Table ES1. | 2019 DSM Results, Budgets, and Spend Summary | 7 |
| Table 2.0 | 2019 DSM Portfolio (EGD Rate Zone) | 10 |
| Table 2.1 | 2019 DSM Portfolio (Union Rate Zones) | 10 |
| Table 3.0 | Annual and Long-Term DSM Budgets (\$ million) (EGD Rate Zone) | 14 |
| Table 3.1 | Actual Annual Total DSM Costs* (\$ million) (EGD Rate Zone) | 14 |
| Table 3.2 | Historic Annual Total DSM Spending (\$ million) (EGD Rate Zone) | 15 |
| Table 3.3 | DSM Spending as a Percent of Distribution Revenue (EGD Rate Zone) | 15 |
| Table 3.4 | Historic Annual DSM Shareholder Incentive Amounts Available and Earned (\$ million) (EGD Rate Zone) | 15 |
| Table 3.5 | DSM Shareholder Incentive Earned as a Percent of DSM Spending (EGD Rate Zone) | 16 |
| Table 3.6 | Annual and Long-Term Natural Gas Savings Targets (million m ³) (EGD Rate Zone) | 16 |
| Table 3.7 | Total Annual and Cumulative Natural Gas Savings for 2019 (Gross and Net) (million m ³) (EGD Rate Zone) | 16 |
| Table 3.8 | Total Historic Annual Natural Gas Savings (Gross and Net) (million m ³) (EGD Rate Zone) | 17 |
| Table 3.9 | Total Historic Cumulative Natural Gas Savings (Gross and Net) (million m ³) (EGD Rate Zone) | 17 |
| Table 3.10 | Total Annual Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (EGD Rate Zone) | 18 |
| Table 3.11 | Total Cumulative Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (EGD Rate Zone) | 18 |
| Table 3.12 | Actual Annual Gas Operating Revenue (\$ million) (EGD Rate Zone) | 19 |
| Table 3.13 | Total Natural Gas Sales Volumes (million m ³) (EGD Rate Zone) | 19 |
| Table 3.14 | Number of Customers by Customer Type (EGD Rate Zone) | 19 |
| Table 3.15 | Number of Customers by Rate Class (EGD Rate Zone) | 20 |
| Table 4.0 | Annual and Long-Term DSM Budgets (\$ million) (Union Rate Zones) | 21 |
| Table 4.1 | Actual Annual Total DSM Costs* (\$ million) (Union Rate Zones) | 21 |
| Table 4.2 | Historic Annual Total DSM Spending (\$ million) (Union Rate Zones) | 22 |
| Table 4.3 | DSM Spending as a Percent of Distribution Revenue (Union Rate Zones) | 22 |
| Table 4.4 | Historic Annual DSM Shareholder Incentive Amounts Available and Earned (\$million) (Union Rate Zones) | 22 |
| Table 4.5 | DSM Shareholder Incentive Earned as a Percent of DSM Spending (Union Rate Zones) | 23 |



| | | |
|------------|--|----|
| Table 4.6 | Annual and Long-Term Natural Gas Savings Targets (million m ³) (Union Rate Zones) | 23 |
| Table 4.7 | Total Annual and Cumulative Natural Gas Savings for 2019 (Gross and Net) (million m ³) (Union Rate Zones) | 23 |
| Table 4.8 | Total Historic Annual Natural Gas Savings (Gross and Net) (million m ³) (Union Rate Zones) | 24 |
| Table 4.9 | Total Historic Cumulative Natural Gas Savings (Gross and Net) (million m ³) (Union Rate Zones) | 24 |
| Table 4.10 | Total Annual Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (Union Rate Zones) | 25 |
| Table 4.11 | Total Cumulative Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (Union Rate Zones) | 25 |
| Table 4.12 | Actual Annual Gas Operating Revenue (\$ million) (Union Rate Zones) | 26 |
| Table 4.13 | Total Natural Gas Sales Volumes (million m ³) (Union Rate Zones) | 26 |
| Table 4.14 | Number of Customers by Customer Type (Union Rate Zones) | 26 |
| Table 4.15 | Number of Customers by Rate Class (Union Rate Zones) | 27 |
| Table 5.0 | 2019 Home Efficiency Rebate Offering Results (EGD Rate Zone) | 29 |
| Table 5.1 | 2019 Residential Adaptive Thermostat Offering Results (EGD Rate Zone) | 30 |
| Table 5.2 | 2019 Custom Commercial Offering Results (EGD Rate Zone) | 31 |
| Table 5.3 | 2019 Custom Industrial Offering Results (EGD Rate Zone) | 32 |
| Table 5.4 | 2019 Commercial & Industrial Prescriptive (Fixed) Incentive Offering Results (EGD Rate Zone) | 33 |
| Table 5.5 | 2019 Commercial & Industrial Direct Install Offering Results (EGD Rate Zone) | 35 |
| Table 5.6 | 2019 Energy Leaders Offering Results (EGD Rate Zone) | 36 |
| Table 5.7 | 2019 Home Winterproofing Offering Results (EGD Rate Zone) | 37 |
| Table 5.8 | 2019 Multi-Residential Affordable Housing Offering Results (EGD Rate Zone) | 38 |
| Table 5.9 | 2019 Savings by Design Affordable Housing Offering Results (EGD Rate Zone) | 39 |
| Table 5.10 | 2019 Savings by Design Residential Offering Results (EGD Rate Zone) | 41 |
| Table 5.11 | 2019 Savings by Design Commercial Offering Results (EGD Rate Zone) | 41 |
| Table 5.12 | 2019 School Energy Competition Offering Results (EGD Rate Zone) | 42 |
| Table 5.13 | 2019 Run it Right Offering Results (EGD Rate Zone) | 43 |
| Table 5.14 | 2019 Comprehensive Energy Management Offering Results (EGD Rate Zone) | 44 |
| Table 6.0 | 2019 Home Efficiency Rebate Offering Results (Union Rate Zones) | 47 |
| Table 6.1 | 2019 Residential Adaptive Thermostat Offering Results (Union Rate Zones) | 48 |
| Table 6.2 | 2019 Commercial/Industrial Prescriptive Offering Results (Union Rate Zones) | 49 |



| | | |
|------------|--|----|
| Table 6.3 | 2019 Commercial/Industrial Direct Install Offering Results (Union Rate Zones) | 51 |
| Table 6.4 | 2019 Commercial/Industrial Custom Offering Results (Union Rate Zones) | 52 |
| Table 6.5 | 2019 Home Weatherization Offering Results (Union Rate Zones) | 53 |
| Table 6.6 | 2019 Furnace End-of-Life Upgrade Offering Results (Union Rate Zones) | 54 |
| Table 6.7 | 2019 Indigenous Offering Results (Union Rate Zones) | 55 |
| Table 6.8 | 2019 Multi-Residential Affordable Housing Offering Results (Union Rate Zones) | 56 |
| Table 6.9 | 2019 Large Volume Direct Access Offering Results (Union Rate Zones) | 57 |
| Table 6.10 | 2019 Optimum Home Offering Results (Union Rate Zones) | 58 |
| Table 6.11 | 2019 Commercial Savings by Design Offering Results (Union Rate Zones) | 59 |
| Table 6.12 | 2019 RunSmart Offering Results (Union Rate Zones) | 60 |
| Table 6.13 | 2019 Strategic Energy Management Offering Results (Union Rate Zones) | 61 |
| Table 8.0 | 2019 Maximum Shareholder Incentive & Achievement by Scorecard (EGD Rate Zone) | 64 |
| Table 8.1 | 2019 Resource Acquisition Scorecard Results (EGD Rate Zone) | 64 |
| Table 8.2 | 2019 Low-Income Scorecard Results (EGD Rate Zone) | 65 |
| Table 8.3 | 2019 Market Transformation & Energy Management Scorecard Results (EGD Rate Zone) | 65 |
| Table 8.4 | 2019 LRAM Statement (EGD Rate Zone) | 66 |
| Table 8.5 | 2019 TRC-Plus Summary (EGD Rate Zone) | 66 |
| Table 8.6 | 2019 PAC Summary (EGD Rate Zone) | 66 |
| Table 8.7 | 2019 Budget/Spend/Variance (EGD Rate Zone) | 67 |
| Table 9.0 | 2019 Maximum Shareholder Incentive & Achievement by Scorecard (Union Rate Zones) | 72 |
| Table 9.1 | 2019 Resource Acquisition Scorecard Results (Union Rate Zones) | 72 |
| Table 9.2 | 2019 Low-Income Scorecard Results (Union Rate Zones) | 73 |
| Table 9.3 | 2019 Large Volume Scorecard Results (Union Rate Zones) | 73 |
| Table 9.4 | 2019 Market Transformation Scorecard Results (Union Rate Zones) | 73 |
| Table 9.5 | 2019 Performance-Based Scorecard Results (Union Rate Zones) | 74 |
| Table 9.6 | 2019 LRAM Statement (Union Rate Zones) | 74 |
| Table 9.7 | 2019 TRC-Plus Summary (Union Rate Zones) | 75 |
| Table 9.8 | 2019 PAC Summary (Union Rate Zones) | 75 |
| Table 9.9 | 2019 Budget/Spend/Variance (Union Rate Zones) | 76 |



Executive Summary

Enbridge Gas Inc. (“Enbridge Gas” or “the Company”) reports 2.1 billion lifetime cubic meters of natural gas saved from its DSM activities in 2019. These savings are a direct result of the Company’s ongoing efforts delivering resource acquisition programs to residential, commercial, and industrial customers. Results attributable to market transformation programs are not included in this total, as results for these programs are not measured by cubic meters of natural gas saved.

A summary of the Company’s 2019 DSM results, budgets, and spend is provided in Table ES1 below.

Table ES1. 2019 DSM Results, Budgets, and Spend Summary

| ITEM | EGD RATE ZONE | UNION RATE ZONES |
|------------------------------------|----------------------------|------------------------------|
| Net Cumulative Natural Gas Savings | 988,545,151 m ³ | 1,087,316,514 m ³ |
| Budget | \$66,421,773 | \$63,268,773 |
| Actual Spend | \$72,843,440 | \$65,604,306 |
| Shareholder Incentive Achievement | \$6,717,372 | \$5,950,363 |
| Lost Distribution Revenue | \$30,969 | \$186,485 |



1. Introduction

Enbridge Gas has been designing and delivering DSM programs under OEB frameworks for nearly 25 years. Since 1995, Enbridge Gas has saved its customers 30 billion lifetime cubic meters of natural gas and 56.2 million tonnes of greenhouse gas emissions, the equivalent of taking 12.2 million cars off the road for a year.

The 2019 Annual Report provides a summary of Enbridge Gas' DSM activities and results during the 2019 program year, including:

- A summary of the DSM Framework as it relates to the 2019 program year (Section 2);
- OEB data reporting requirements (Sections 3 and 4);
- Program and offering summaries, including offering results, offering changes, lessons learned, and anticipated offering changes for 2020 (Sections 5 and 6);
- Evaluation activities (Section 7); and,
- Results, including scorecard results, shareholder incentive achievement, lost distribution revenue calculations, cost-effectiveness results, budgets and spending (Sections 8 and 9).

At the current time, Ontario and many other jurisdictions around the world are experiencing the effects of the COVID-19 pandemic. While the 2019 program year was not impacted by the pandemic, this report does reference anticipated offering changes in 2020. The future offering changes outlined in this report do not include considerations for the pandemic. Any such considerations will be discussed in the Company's 2020 Annual Report.



2. DSM Framework

On December 22, 2014 the OEB released its Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2014-0134) (“DSM Framework”) and Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2014-0134) (“DSM Guidelines”). Given the timing, the OEB instructed that 2015 should be treated as a transition year, and that the natural gas utilities should “roll-forward their 2014 DSM plans, including all programs and parameters (i.e., budget, targets, incentive structure) into 2015”.¹ Meanwhile, the natural gas utilities began developing DSM plans with new and expanded offerings in response to the new DSM Framework for 2016-2020.

Throughout 2017 and 2018, the OEB undertook a mid-term review. On November 28, 2018 the OEB released its Mid-Term Review of the Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2017-0127 & EB-2017-0128) (“Mid-Term Report”).

On November 27, 2019 Enbridge Gas filed a request for the OEB to issue an extension of the current DSM Framework for one year (to December 31, 2021) along with an application to roll-forward the Company’s OEB-approved DSM plans to 2021. The submission was made to reflect the concern that it was no longer reasonable to assume a post-2020 DSM framework followed by a multi-year plan could be completed, reviewed and approved in time for the 2021 DSM program year. On July 16, 2020, the OEB approved the application as filed.²

2.1 2015-2020 DSM PLANS

On April 1, 2015, Enbridge Gas Distribution Inc. (“EGD”) and Union Gas Limited (“Union”) filed respective 2015-2020 DSM Plans (EB-2015-0049 & EB-2015-0029, respectively). On January 20, 2016 the OEB released its Decision and Order on EGD’s and Union’s 2015-2020 DSM Plans (EB-2015-0049/EB-2015-0029) (“Decision”), and published an update to the Decision on February 24, 2016. As part of its Decision, the OEB approved many of the proposed programs, scorecards, metrics, targets, and budgets but also directed certain revisions to be made.

On January 1, 2019 EGD and Union amalgamated to become Enbridge Gas Inc. (“Enbridge Gas”). Enbridge Gas continues to operate and report on the two DSM portfolios independently (within the EGD rate zone and the Union rate zones) to reflect the manner in which programs, scorecards, metrics, targets, and budgets were approved by the OEB. Where customer-facing alignment is possible to provide consistent province-wide program experiences, Enbridge Gas has made all reasonable efforts to do so. Alignment activities are discussed throughout this report.

The OEB designed the DSM Framework to have “the flexibility to allow gas utilities to adapt and change with the market, the stability to ensure programs remain in place so customers can participate, and provides the continuity to manage DSM programs in a changing environment.”³ With these goals in mind, Enbridge Gas may introduce, change or discontinue activities in response to changing market conditions and customer needs, within the constraints of the DSM Framework and DSM Guidelines. Any changes are discussed throughout this report.

¹ Report of the Board, DSM Framework for Natural Gas Distributors (2015-2020), EB-2014-0134, Section 15.1, p.37

² Decision and order, Application for approval of natural gas demand side management plans for 2021, EB-2019-0271

³ Report of the Board, DSM Framework for Natural Gas Distributors (2015-2020), EB-2014-0134, Section 1.2, p.3



The structure of the 2019 DSM portfolios for the EGD rate zone and the Union rate zones are shown in Table 2.0 and Table 2.1 below, respectively. Each scorecard contains one or more programs, and each program provides one or more offerings to customers. Offerings are bundles of energy efficiency measures, initiatives, and/or services.

Table 2.0 2019 DSM Portfolio (EGD Rate Zone)

| DSM SCORECARD | DSM PROGRAM | DSM OFFERING |
|---|---|---|
| Resource Acquisition Scorecard | Resource Acquisition Program | Home Efficiency Rebate Offering |
| | | Residential Adaptive Thermostats Offering |
| | | Commercial & Industrial Prescriptive (Fixed) Incentive Offering |
| | | Commercial & Industrial Direct Install Offering |
| | | Custom Commercial Offering |
| | | Custom Industrial Offering |
| | | Energy Leaders Offering |
| Low-Income Scorecard | Low-Income Program | Home Winterproofing Offering |
| | | Multi-Residential Affordable Housing Offering |
| | | Savings by Design Affordable Housing Offering |
| Market Transformation & Energy Management Scorecard | Market Transformation & Energy Management Program | Savings by Design Residential Offering |
| | | Savings by Design Commercial Offering |
| | | School Energy Competition Offering |
| | | Run it Right Offering* |
| | | Comprehensive Energy Management Offering* |

*Run it Right Offering and Comprehensive Energy Management Offering include savings attributed to the Resource Acquisition Scorecard

Table 2.1 2019 DSM Portfolio (Union Rate Zones)

| DSM SCORECARD | DSM PROGRAM | DSM OFFERING |
|---------------------------------|-------------------------------|---|
| Resource Acquisition Scorecard | Residential Program | Home Efficiency Rebate Offering |
| | | Residential Adaptive Thermostats Offering |
| | Commercial/Industrial Program | Commercial/Industrial Prescriptive Offering |
| | | Commercial/Industrial Custom Offering |
| | | Commercial/Industrial Direct Install Offering |
| Performance-Based Scorecard | Performance-Based Program | RunSmart Offering |
| | | Strategic Energy Management Offering |
| Low-Income Scorecard | Low-Income Program | Home Weatherization Offering |
| | | Multi-Residential Affordable Housing Offering |
| | | Indigenous Offering |
| | | Furnace End-of-Life Upgrade Offering |
| Large Volume Scorecard | Large Volume Program | Large Volume Direct Access Offering |
| Market Transformation Scorecard | Market Transformation Program | Optimum Home Offering |
| | | Commercial Savings by Design Offering |



2.2 SCORECARD TARGET SETTING

For the 2019 program year, scorecard targets have been set based on the methodologies provided by the OEB in its Mid-Term Report. See Appendix B for the 2019 scorecard target setting methodology, and Sections 8.1 and 9.1 for the calculated 2019 scorecard targets and results for the EGD rate zone and the Union rate zones, respectively.

2.3 EVALUATION GOVERNANCE

As outlined in the DSM Framework, the Board indicated it “is of the view that it is in the best position to coordinate the evaluation process throughout the DSM framework period”⁴. On August 21, 2015, the Board released a letter which provided additional details regarding the new evaluation governance structure⁵. This letter included the following information:

- The OEB would be responsible for coordinating and overseeing the evaluation and audit process, including selecting a third-party Evaluation Contractor (“EC”).
- The EC would carry out the evaluation and audit processes and would draft an EM&V Plan for the natural gas utilities’ DSM programs.
- An Evaluation Advisory Committee (“EAC”) would be formed to provide input and advice to the OEB on the development of the plan and on the evaluation and audit of the DSM results.

Furthermore, the letter noted that the EAC would be comprised of:

- Experts representing non-utility stakeholders, with demonstrated experience and expertise in the evaluation of DSM technologies and programs, natural gas energy efficiency technologies, multi-year impact assessments, net-to-gross (“NTG”) studies, free ridership analysis and natural gas energy efficiency persistence analysis;
- Expert(s) retained by the OEB;
- Representatives from the Independent Electricity System Operator (“IESO”);
- Representatives from each natural gas utility; and,
- Representatives from the Ministry of Energy and the Environmental Commissioner of Ontario, who will participate as observers.

In 2019, the OEB-appointed non-utility stakeholder members of the EAC were:

- Chris Neme, Energy Futures Group
- Jay Shepherd, Shepherd Rubenstein Professional Corporation

In 2019, the independent expert members of the EAC were:

- Ted Kesik, Knowledge Mapping Inc.
- Robert Wirtshafter, Wirtshafter Associates Inc.

⁴ DSM Framework, p. 30

⁵ OEB letter, 2015-2020 DSM Evaluation Process of Program Results (EB-2015-0245), August 21, 2015



Non-utility stakeholders and independent experts are expected to provide input and advice based on their experience and technical expertise and not to advocate for the position of parties they have represented before the OEB in various proceedings.

2.4 COST-EFFECTIVENESS SCREENING

Cost-effectiveness screening for the 2015-2020 DSM Framework uses an enhanced Total Resource Cost test, called the “TRC-Plus” test, which includes a 15% adder to account for the non-energy benefits of DSM, such as improvements to the environment, economy and society.

For programs measured by cumulative natural gas savings, excluding low-income programs, the program is considered cost-effective if the ratio of the present value of the TRC-Plus benefits to the TRC costs exceeds 1.0. To recognize that low-income programs may result in additional benefits not captured by the TRC-Plus test, low-income programs are screened using a TRC-Plus threshold of 0.7. Market transformation programs are assessed based on the objectives of the program and are not tested against a TRC-Plus ratio threshold. A secondary reference tool is the Program Administrator Cost (“PAC”) est. For more information on the TRC-Plus test and the PAC test, please refer to Section 9 of the DSM Guidelines.

The cost-effectiveness tests are used to screen for cost-effectiveness at the program and portfolio level. See Section 2.1 for the 2019 DSM portfolio structures, and Sections 8.3 and 9.3 for the 2019 TRC-Plus test and PAC test results for EGD rate zone and Union rate zones, respectively.

2.5 AVOIDED COST ASSUMPTIONS

Avoided cost assumptions reflect “the benefit of not having to provide an extra unit of supply of natural gas, or other resources ... through the delivery of DSM programs”⁶. For more information on avoided cost assumptions, please refer to Section 10 of the DSM Guidelines.

The 2019 avoided cost assumptions for the EGD rate zone and the Union rate zones can be found in Appendix A. As per the direction provided in the OEB’s Mid-Term Report⁷, Enbridge Gas includes the avoided cost of carbon within its avoided cost assumptions (in addition to the avoided costs of natural gas, electricity, and water).

2.6 TECHNICAL RESOURCE MANUAL

The Technical Resource Manual (“TRM”) provides prescribed assumptions (including energy savings and measure lives) for several energy efficient technologies. Enbridge Gas uses the TRM as the basis for prescriptive and quasi-prescriptive measures it offers to customers. For more information on the TRM, please refer to summary provided at the outset of the TRM⁸.

The TRM is reviewed annually by the Evaluation Contractor to make appropriate updates or revisions to existing measures, add new measures, or retire measures which are no longer relevant.

For the purpose of determining 2019 shareholder incentives for prescriptive and quasi-prescriptive measures, TRM Version 3.0 has been used (released on November 30, 2018). This version was updated by the Evaluation Contractor with input from Enbridge Gas and the rest of the EAC, and reflect the following changes:

⁶ DSM Guidelines, p. 34

⁷ Mid-Term Report, p. 28

⁸ <https://www.oeb.ca/industry/policy-initiatives-and-consultations/natural-gas-demand-side-management-dsm>



- Expanding the Commercial Demand Control Ventilation measure to include new market types while also updating the existing Office/Retail measure for consistency in assumptions;
- Revising the Commercial High Volume Low Speed (“HVLS”) Destratification Fan measure;
- Revising the Residential and Multi-Residential Low-Flow Showerhead measures for changes to building code in new construction applications; and,
- An update to the Common Assumptions input variables for heating hours per year and heating days per year (Commercial Air Curtains, Commercial Energy Recovery Ventilators (ERVs), Commercial Heat Recovery Ventilators (HRVs), and Residential Pipe Wrap measures were all revised accordingly).

For the purpose of determining 2019 lost distribution revenue for prescriptive and quasi-prescriptive measures, TRM Version 4.0 has been used (released on January 10, 2020).

All version of the TRM can be accessed on the OEB website: <https://www.oeb.ca/industry/policy-initiatives-and-consultations/natural-gas-demand-side-management-dsm>



3. OEB Data Reporting Requirements (EGD Rate Zone)

Section 3 provides the OEB's reporting requirements for the EGD rate zone, as per Section 14.2 of the DSM Guidelines.

Table 3.0 Annual and Long-Term DSM Budgets (\$ million) (EGD Rate Zone)

| PROGRAM | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | TOTAL (6YEARS) |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Resource Acquisition | \$19.175 | \$34.337 | \$39.489 | \$43.162 | \$42.056 | \$42.909 | \$221.128 |
| Low-Income | \$7.382 | \$11.945 | \$12.527 | \$13.309 | \$13.577 | \$13.850 | \$72.591 |
| Market Transformation & Energy Management | \$6.245 | \$6.579 | \$6.718 | \$6.882 | \$7.030 | \$7.181 | \$40.635 |
| Portfolio Level | \$4.920 | \$3.500 | \$4.200 | \$4.200 | \$3.758 | \$3.818 | \$24.397 |
| Total | \$37.722 | \$56.361 | \$62.934 | \$67.554 | \$66.422 | \$67.757 | \$358.750 |

Table 3.1 Actual Annual Total DSM Costs* (\$ million) (EGD Rate Zone)

| RATE CLASS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Rate 1 | \$11.894 | \$12.546 | \$14.795 | \$12.468 | \$14.215 | \$17.935 | \$13.882 | \$23.507 | \$26.856 | \$42.391 | \$44.206 | \$50.048 | \$54.977 |
| Rate 6 | \$2.848 | \$7.519 | \$7.487 | \$10.713 | \$15.103 | \$17.127 | \$15.173 | \$13.901 | \$15.646 | \$17.001 | \$17.463 | \$17.616 | \$21.564 |
| Rate 9 | - | - | - | - | - | \$0.001 | \$0.001 | \$0.002 | \$0.002 | \$0.002 | \$0.002 | \$0.003 | \$0.003 |
| Rate 100 | \$8.950 | \$3.202 | \$2.667 | \$0.086 | \$0.018 | - | - | - | - | - | - | - | \$0.370 |
| Rate 110 | \$3.658 | \$1.042 | \$1.944 | \$1.471 | \$1.048 | \$0.784 | \$0.937 | \$1.190 | \$1.900 | \$1.251 | \$1.462 | \$0.918 | \$0.937 |
| Rate 115 | \$0.643 | \$1.717 | \$1.314 | \$0.545 | \$0.602 | \$1.329 | \$1.420 | \$0.567 | \$0.658 | \$0.532 | \$0.588 | \$0.274 | \$0.930 |
| Rate 125 | - | - | - | - | - | \$0.053 | \$0.053 | \$0.064 | \$0.069 | \$0.076 | \$0.086 | \$0.110 | \$0.099 |
| Rate 135 | \$0.002 | \$0.080 | \$0.012 | \$0.059 | \$0.122 | \$0.441 | \$0.320 | \$0.124 | \$0.059 | \$0.086 | \$0.384 | \$0.407 | \$0.301 |
| Rate 145 | \$0.855 | \$0.902 | \$0.677 | \$0.730 | \$0.655 | \$0.496 | \$0.369 | \$0.254 | \$0.152 | \$0.084 | \$0.090 | \$0.551 | \$0.084 |
| Rate 170 | \$0.295 | \$1.861 | \$1.844 | \$2.041 | \$2.195 | \$0.536 | \$0.149 | \$0.458 | \$0.403 | \$0.574 | \$0.176 | \$0.176 | \$0.285 |
| Rate 200 | - | - | - | - | - | \$0.019 | \$0.018 | \$0.022 | \$0.024 | \$0.026 | \$0.030 | \$0.038 | \$0.034 |
| Rate 300 | - | - | - | - | - | \$0.004 | \$0.004 | \$0.004 | \$0.005 | \$0.005 | \$0.006 | \$0.007 | \$0.007 |
| Total | \$29.146 | \$28.867 | \$30.739 | \$28.113 | \$33.958 | \$38.726 | \$32.328 | \$40.093 | \$45.773 | \$62.029 | \$64.492 | \$70.148 | \$79.592 |

*Figures include all DSM spend, shareholder incentive, and lost distribution revenue



Table 3.2 **Historic Annual Total DSM Spending (\$ million) (EGD Rate Zone)**

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total DSM Spending | \$21.20 | \$23.03 | \$25.42 | \$24.00 | \$27.24 | \$30.61 | \$27.84 | \$32.51 | \$35.78 | \$55.65 | \$62.91 | \$66.15 | \$72.84 |

Table 3.3 **DSM Spending as a Percent of Distribution Revenue (EGD Rate Zone)**

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ^{1,2} |
|---|---------|---------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------|
| Total DSM Spending (\$ million) | \$21.2 | \$23.0 | \$25.4 | \$24.0 | \$27.2 | \$30.6 | \$27.8 | \$32.5 | \$35.8 | \$55.6 | \$62.9 | \$66.2 | \$138.4 |
| Total Distribution Revenue (\$ million) | \$980.9 | \$995.9 | \$1,012.1 | \$960.4 | \$978.8 | \$972.0 | \$1,055.0 | \$1,044.0 | \$1,055.4 | \$1,115.6 | \$1,128.3 | \$1,231.6 | \$2,366.2 |
| DSM Spending as a % of Distribution Revenue | 2.2% | 2.3% | 2.5% | 2.5% | 2.8% | 3.1% | 2.6% | 3.1% | 3.4% | 5.0% | 5.6% | 5.4% | 5.9% |

¹Total DSM spending of Enbridge Gas Inc. (both EGD rate zone and Union rate zones); to allow for proper comparison to Distribution Revenue, which is now being presented as a combined figure.

²Consistent with EB-2020-0134 (Disposition of Deferral & Variance Accounts and Earnings Sharing), this is now presented as combined figures for Enbridge Gas Inc. The methodology in deriving the values differs from historical practice due to amalgamation and alignment.

Table 3.4 **Historic Annual DSM Shareholder Incentive Amounts Available and Earned (\$ million) (EGD Rate Zone)**

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|-------------------------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| DSM Shareholder Incentive Earned | \$8.25 | \$5.80 | \$5.36 | \$4.16 | \$6.77 | \$8.16 | \$4.54 | \$7.65 | \$10.08 | \$6.37 | \$2.12 | \$3.98 | \$6.72 |
| DSM Shareholder Incentive Available | \$9.00 | \$9.22 | \$9.24 | \$9.40 | \$10.16 | \$10.45 | \$10.66 | \$10.87 | \$11.09 | \$10.45 | \$10.45 | \$10.45 | \$10.45 |

¹2019 Shareholder Incentive subject to OEB approval



Table 3.5 DSM Shareholder Incentive Earned as a Percent of DSM Spending (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| DSM Shareholder Incentive Earned (\$ million) | \$8.25 | \$5.80 | \$5.36 | \$4.16 | \$6.77 | \$8.16 | \$4.54 | \$7.65 | \$10.08 | \$6.37 | \$2.12 | \$3.98 | \$6.72 |
| Total DSM Spending (\$ million) | \$21.20 | \$23.03 | \$25.42 | \$24.00 | \$27.24 | \$30.61 | \$27.84 | \$32.51 | \$35.78 | \$55.65 | \$62.91 | \$66.15 | \$72.84 |
| Shareholder Incentive Earned as a % of DSM Spending | 39% | 25% | 21% | 17% | 25% | 27% | 16% | 24% | 28% | 11% | 3% | 6% | 9% |

¹2019 Shareholder Incentive subject to OEB approval

Table 3.6 Annual and Long-Term Natural Gas Savings Targets (million m³) (EGD Rate Zone)

| SCORECARD | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|----------------------|---------|-------|-------|-------|-------|---|
| Resource Acquisition | 1,011.9 | 631.1 | 806.5 | 805.5 | 734.3 | Targets subject to OEB approval of 2019 performance |
| Low-Income | 92.8 | 96.7 | 167.1 | 126.1 | 123.2 | |

Table 3.7 Total Annual and Cumulative Natural Gas Savings for 2019 (Gross and Net) (million m³) (EGD Rate Zone)

| SCORECARD | ANNUAL NATURAL GAS SAVINGS | | CUMULATIVE NATURAL GAS SAVINGS | |
|----------------------|----------------------------|--------------|--------------------------------|---------------|
| | GROSS | NET | GROSS | NET |
| Resource Acquisition | 70.81 | 46.46 | 1,303.81 | 871.97 |
| Low-Income | 5.80 | 5.80 | 116.58 | 116.58 |
| Total | 76.61 | 52.26 | 1,420.39 | 988.55 |



Table 3.8 Total Historic Annual Natural Gas Savings (Gross and Net) (million m³) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Total <u>Net</u> Annual Natural Gas Savings | 85.07 | 77.25 | 69.86 | 64.58 | 76.40 | 60.14 | 47.74 | 43.54 | 48.97 | 50.52 | 44.02 | 42.23 | 52.26 |
| Total <u>Gross</u> Annual Natural Gas Savings | 85.99 | 121.98 | 117.62 | 98.82 | 114.14 | 92.53 | 66.06 | 60.62 | 67.09 | 90.03 | 71.28 | 61.60 | 76.61 |

¹2019 DSM results subject to OEB approval

Table 3.9 Total Historic Cumulative Natural Gas Savings (Gross and Net) (million m³) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|----------|----------|----------|----------|----------|----------|----------|--------|----------|----------|----------|----------|-------------------|
| Total <u>Net</u> Cumulative Natural Gas Savings | 1,214.10 | 1,118.98 | 1,039.18 | 951.40 | 1,253.82 | 1,068.98 | 826.91 | 719.84 | 826.17 | 837.11 | 781.17 | 807.48 | 988.55 |
| Total <u>Gross</u> Cumulative Natural Gas Savings | 1,233.54 | 1,809.65 | 1,801.77 | 1,455.74 | 1,811.35 | 1,593.05 | 1,148.12 | 993.62 | 1,114.13 | 1,479.09 | 1,215.44 | 1,141.22 | 1,420.39 |

¹2019 DSM results subject to OEB approval



Table 3.10 Total Annual Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| <u>Net</u> Annual Natural Gas Savings (million m ³) | 85.1 | 77.3 | 69.9 | 64.6 | 76.4 | 60.1 | 47.7 | 43.5 | 49.0 | 50.5 | 44.0 | 42.2 | 52.3 |
| <u>Net</u> Annual Natural Gas Savings as a % of Natural Gas Sales | 0.7% | 0.7% | 0.6% | 0.6% | 0.7% | 0.6% | 0.4% | 0.4% | 0.4% | 0.5% | 0.4% | 0.3% | 0.4% |
| <u>Gross</u> Annual Natural Gas Savings (million m ³) | 86.0 | 122.0 | 117.6 | 98.8 | 114.1 | 92.5 | 66.1 | 60.6 | 67.1 | 90.0 | 71.3 | 61.6 | 76.6 |
| <u>Gross</u> Annual Natural Gas Savings as a % of Natural Gas Sales | 0.7% | 1.0% | 1.1% | 0.9% | 1.0% | 0.9% | 0.6% | 0.5% | 0.6% | 0.8% | 0.6% | 0.5% | 0.6% |
| Total Natural Gas Sales (million m ³) ² | 11,862.9 | 11,686.5 | 11,114.9 | 10,742.3 | 11,303.2 | 10,304.4 | 11,338.3 | 12,434.3 | 11,728.3 | 10,736.2 | 11,172.6 | 12,361.6 | 12,370.8 |

¹2019 DSM results subject to OEB approval

²Total Natural Gas Sales only includes rate classes that are eligible for DSM and subject to DSM costs

Table 3.11 Total Cumulative Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| <u>Net</u> Cumulative Natural Gas Savings (million m ³) | 1,214.1 | 1,119.0 | 1,039.2 | 951.4 | 1,253.8 | 1,069.0 | 826.9 | 719.8 | 826.2 | 837.1 | 781.2 | 807.5 | 988.5 |
| <u>Net</u> Cumulative Natural Gas Savings as a % of Natural Gas Sales | 10.2% | 9.6% | 9.3% | 8.9% | 11.1% | 10.4% | 7.3% | 5.8% | 7.0% | 7.8% | 7.0% | 6.5% | 8.0% |
| <u>Gross</u> Cumulative Natural Gas Savings (million m ³) | 1,233.5 | 1,809.7 | 1,801.8 | 1,455.7 | 1,811.3 | 1,593.0 | 1,148.1 | 993.6 | 1,114.1 | 1,479.1 | 1,215.4 | 1,141.2 | 1,420.4 |
| <u>Gross</u> Cumulative Natural Gas Savings as a % of Natural Gas Sales | 10.4% | 15.5% | 16.2% | 13.6% | 16.0% | 15.5% | 10.1% | 8.0% | 9.5% | 13.8% | 10.9% | 9.2% | 11.5% |
| Total Natural Gas Sales (million m ³) ² | 11,862.9 | 11,686.5 | 11,114.9 | 10,742.3 | 11,303.2 | 10,304.4 | 11,338.3 | 12,434.3 | 11,728.3 | 10,736.2 | 11,172.6 | 12,361.6 | 12,370.8 |

¹2019 DSM results subject to OEB approval

²Total Natural Gas Sales only includes rate classes that are eligible for DSM and subject to DSM costs



Table 3.12 Actual Annual Gas Operating Revenue (\$ million) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ^{1,2} |
|--------------------------------------|----------------|----------------|------------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| Gas Sales and Distribution Revenue | \$3,095.0 | \$3,233.8 | \$2,952.3 | \$2,394.1 | \$2,393.6 | \$2,240.9 | \$2,613.4 | \$2,861.3 | \$2,892.1 | \$2,588.7 | \$2,788.1 | \$2,863.5 | \$4,631.5 |
| Less Total Cost of Gas (\$ millions) | \$2,113.0 | \$2,236.1 | \$1,938.6 | \$1,432.3 | \$1,413.3 | \$1,267.6 | \$1,556.8 | \$1,815.5 | \$1,834.8 | \$1,466.7 | \$1,640.8 | \$1,612.7 | \$2,265.3 |
| Total Distribution Revenue | \$982.0 | \$997.7 | \$1,013.7 | \$961.8 | \$980.3 | \$973.3 | \$1,056.6 | \$1,045.8 | \$1,057.3 | \$1,122.0 | \$1,147.3 | \$1,250.8 | \$2,366.2 |

¹As of 2019, Distribution Revenue is the gas sales and distribution revenue (excluding transportation, storage, and other operating revenue) less the cost of gas.

²Consistent with EB-2020-0134 (Disposition of Deferral & Variance Accounts and Earnings Sharing), this is now presented as combined figures for Enbridge Gas Inc. The methodology in deriving the values differs from historical practice due to amalgamation and alignment.

Table 3.13 Total Natural Gas Sales Volumes (million m³) (EGD Rate Zone)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total Natural Gas Sales ¹ | 11,862.90 | 11,686.50 | 11,114.90 | 10,742.30 | 11,303.20 | 10,304.40 | 11,338.30 | 12,434.30 | 11,728.30 | 10,736.20 | 11,172.60 | 12,361.60 | 12,370.82 |

¹Only includes rate classes eligible for DSM and subject to DSM costs.

Table 3.14 Number of Customers by Customer Type (EGD Rate Zone)

| CUSTOMER TYPE | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------|------------------|------------------|------------------|------------------|------------------|
| Residential ¹ | 1,930,657 | 1,959,569 | 1,990,032 | 2,017,128 | 2,040,710 |
| Commercial | 157,758 | 158,812 | 160,721 | 162,157 | 162,682 |
| Industrial | 6,266 | 6,308 | 5,916 | 5,881 | 5,813 |
| Total | 2,094,681 | 2,124,689 | 2,156,669 | 2,185,166 | 2,209,205 |

¹Residential customers include Low-Income



Table 3.15 **Number of Customers by Rate Class (EGD Rate Zone)**

| RATE CLASS | 2015 | 2016 | 2017 | 2018 | 2019 |
|-------------------|------------------|------------------|------------------|------------------|------------------|
| Rate 1 | 1,930,657 | 1,959,569 | 1,990,032 | 2,017,128 | 2,040,710 |
| Rate 6 | 163,634 | 164,698 | 166,224 | 167,626 | 168,093 |
| Rate 9 | 6 | 6 | 3 | 2 | 0 |
| Rate 100 | 2 | 2 | 3 | 3 | 4 |
| Rate 110 | 227 | 270 | 263 | 273 | 280 |
| Rate 115 | 25 | 27 | 27 | 25 | 22 |
| Rate 125 | 5 | 5 | 5 | 4 | 4 |
| Rate 135 | 43 | 45 | 45 | 43 | 41 |
| Rate 145 | 52 | 38 | 37 | 32 | 25 |
| Rate 170 | 26 | 25 | 26 | 27 | 23 |
| Rate 200 | 1 | 1 | 1 | 1 | 1 |
| Rate 300 | 2 | 2 | 2 | 1 | 1 |
| Rate 315 | 1 | 1 | 1 | 1 | 1 |
| Total | 2,094,681 | 2,124,689 | 2,156,669 | 2,185,166 | 2,209,205 |



4. OEB Data Reporting Requirements (Union Rate Zones)

Section 4 provides the OEB's reporting requirements for the Union rate zones, as per Section 14.2 of the DSM Guidelines.

Table 4.0 Annual and Long-Term DSM Budgets (\$ million) (Union Rate Zones)

| PROGRAM | 2015 | 2016 | 2017 | 2018 | 2019 ¹ | 2020 ¹ | TOTAL (6YEARS) |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|
| Residential | \$3.163 | \$8.612 | \$11.369 | \$13.908 | \$13.908 | \$13.908 | \$64.867 |
| Commercial/Industrial | \$10.859 | \$19.316 | \$22.035 | \$22.726 | \$22.403 | \$22.403 | \$119.743 |
| Low-Income | \$6.839 | \$11.407 | \$12.343 | \$13.571 | \$14.145 | \$15.005 | \$73.310 |
| Large Volume | \$4.534 | \$4.000 | \$4.000 | \$4.000 | \$4.000 | \$4.000 | \$24.534 |
| Market Transformation | \$1.379 | \$1.703 | \$2.338 | \$2.338 | \$2.338 | \$2.338 | \$12.434 |
| Performance-Based | - | \$0.548 | \$0.843 | \$1.088 | \$0.833 | \$1.053 | \$4.365 |
| Portfolio Level | \$4.717 | \$11.235 | \$5.642 | \$5.642 | \$5.642 | \$5.642 | \$38.520 |
| Inflation | \$2.497 | | | | | | \$2.497 |
| Total¹ | \$33.988 | \$56.821 | \$58.570 | \$63.272 | \$63.269 | \$64.350 | \$340.270 |

¹The total budget shown for 2019 and 2020 does not include \$1.5 million for the Residential Adaptive Thermostat offering approved through the Mid-Term Review. Expenditures for this offering will be tracked in the DSMVA.

Table 4.1 Actual Annual Total DSM Costs* (\$ million) (Union Rate Zones)

| RATE CLASS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 ¹ | 2017 ² | 2018 ² | 2019 |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-----------------|
| M1 | N/A | \$12.107 | \$12.743 | \$11.348 | \$11.498 | \$13.502 | \$13.657 | \$15.415 | \$16.752 | \$24.595 | \$37.204 | \$41.948 | \$37.849 |
| M2 | \$11.619 | \$2.486 | \$2.023 | \$2.117 | \$4.097 | \$4.968 | \$5.818 | \$6.728 | \$4.958 | \$6.847 | \$8.166 | \$7.851 | \$8.297 |
| M4 | \$1.488 | \$1.353 | \$0.828 | \$1.098 | \$1.817 | \$3.319 | \$3.244 | \$3.296 | \$3.645 | \$4.012 | \$5.892 | \$6.776 | \$5.595 |
| M5 | \$0.294 | \$1.044 | \$1.226 | \$1.086 | \$3.150 | \$2.660 | \$3.484 | \$2.394 | \$1.421 | \$2.580 | \$1.459 | \$0.657 | \$0.563 |
| M7 | \$0.886 | \$0.116 | \$0.256 | \$1.474 | \$1.304 | \$0.538 | \$0.571 | \$2.143 | \$3.370 | \$3.963 | \$1.258 | \$2.714 | \$4.181 |
| T1 | \$3.147 | \$3.988 | \$5.596 | \$3.965 | \$7.749 | \$6.111 | \$2.265 | \$1.078 | \$0.889 | \$1.486 | \$2.578 | \$1.962 | \$0.834 |
| T2 | N/A | N/A | N/A | N/A | N/A | N/A | \$3.365 | \$2.875 | \$2.673 | \$3.980 | \$3.006 | \$3.375 | \$4.005 |
| Rate 01 | \$2.229 | \$2.162 | \$2.093 | \$1.869 | \$3.050 | \$3.532 | \$3.560 | \$4.161 | \$3.555 | \$4.689 | \$6.209 | \$7.403 | \$6.696 |
| Rate 10 | \$1.612 | \$1.371 | \$2.292 | \$0.510 | \$1.109 | \$1.939 | \$1.637 | \$1.613 | \$0.953 | \$1.394 | \$2.144 | \$1.829 | \$1.820 |
| Rate 20 | \$0.323 | \$0.496 | \$0.771 | \$0.881 | \$1.030 | \$1.607 | \$1.573 | \$1.791 | \$1.005 | \$0.851 | \$1.554 | \$0.312 | \$1.194 |
| Rate 100 | \$1.535 | \$4.542 | \$3.950 | \$4.471 | \$1.614 | \$2.305 | \$1.828 | \$1.517 | \$0.799 | \$0.573 | \$0.809 | \$0.820 | \$0.708 |
| Total | \$23.133 | \$29.664 | \$31.778 | \$28.818 | \$36.418 | \$40.481 | \$41.001 | \$43.011 | \$40.019 | \$54.968 | \$70.277 | \$75.648 | \$71.741 |

*Figures include all DSM spend, shareholder incentive, and lost distribution revenue.

¹Aligns to DSMVA approved in EB-2018-0300 (2016 Disposition of DSM Deferral and Variance Accounts). Actual expenditures from 2017 and 2018 related to the DSM tracking system upgrades have been accounted for through the 2016 DSMVA.

²Actual expenditures related to the DSM tracking system upgrades in these years are reflected in 2016.

**Table 4.2 Historic Annual Total DSM Spending (\$ million) (Union Rate Zones)**

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 ¹ | 2017 ² | 2018 ² | 2019 |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|-------------------|-------------------|---------|
| Total DSM Spending | \$16.13 | \$20.26 | \$22.04 | \$21.61 | \$27.97 | \$31.32 | \$32.84 | \$33.71 | \$32.39 | \$50.67 | \$64.58 | \$69.12 | \$65.60 |

¹Aligns to DSMVA approved in EB-2018-0300 (2016 Disposition of DSM Deferral and Variance Accounts). Actual expenditures from 2017 and 2018 related to the DSM tracking system upgrades have been accounted for through the 2016 DSMVA.

²Actual expenditures related to the DSM tracking system upgrades in these years are reflected in 2016.

Table 4.3 DSM Spending as a Percent of Distribution Revenue (Union Rate Zones)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ^{1,2} |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------|
| Total DSM Spending (\$ million) | \$16 | \$20 | \$22 | \$22 | \$28 | \$31 | \$33 | \$34 | \$32 | \$51 | \$65 | \$69 | \$138 |
| Total Distribution Revenue (\$ million) | \$655 | \$675 | \$658 | \$699 | \$713 | \$727 | \$772 | \$778 | \$800 | \$812 | \$834 | \$893 | \$2,366 |
| DSM Spending as a % of Distribution Revenue | 2% | 3% | 3% | 3% | 4% | 4% | 4% | 4% | 4% | 6% | 8% | 8% | 6% |

¹Total DSM spending of Enbridge Gas Inc. (both EGD rate zone and Union rate zones); to allow for proper comparison to Distribution Revenue, which is now being presented as a combined figure.

²Consistent with EB-2020-0134 (Disposition of Deferral & Variance Accounts and Earnings Sharing), this is now presented as combined figures for Enbridge Gas Inc. The methodology in deriving the values differs from historical practice due to amalgamation and alignment.

Table 4.4 Historic Annual DSM Shareholder Incentive Amounts Available and Earned (\$million) (Union Rate Zones)

| ITEMS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|-------------------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| DSM Shareholder Incentive Earned | \$6.23 | \$8.70 | \$8.75 | \$6.58 | \$7.64 | \$8.21 | \$7.78 | \$8.99 | \$7.47 | \$4.12 | \$8.24 | \$6.37 | \$5.95 |
| DSM Shareholder Incentive Available | \$8.50 | \$8.70 | \$8.92 | \$8.94 | \$9.24 | \$10.45 | \$10.68 | \$10.82 | \$11.00 | \$10.45 | \$10.45 | \$10.45 | \$10.45 |

¹2019 Shareholder Incentive subject to OEB approval

**Table 4.5 DSM Shareholder Incentive Earned as a Percent of DSM Spending (Union Rate Zones)**

| \$ MILLIONS | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| DSM Shareholder Incentive Earned (\$ million) | \$6.23 | \$8.70 | \$8.75 | \$6.58 | \$7.64 | \$8.21 | \$7.78 | \$8.99 | \$7.47 | \$4.12 | \$8.24 | \$6.37 | \$5.95 |
| Total DSM Spending (\$ million) | \$16.13 | \$20.26 | \$22.04 | \$21.61 | \$27.97 | \$31.32 | \$32.84 | \$33.71 | \$32.39 | \$50.67 | \$64.58 | \$69.12 | \$65.60 |
| Shareholder Incentive Earned as a % of DSM Spending | 39% | 43% | 40% | 30% | 27% | 26% | 24% | 27% | 23% | 8% | 13% | 9% | 9% |

¹2019 Shareholder Incentive subject to OEB approval**Table 4.6 Annual and Long-Term Natural Gas Savings Targets (million m³) (Union Rate Zones)**

| SCORECARD | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|----------------------|---------|---------|-------|-------|-------|---|
| Resource Acquisition | 816.6 | 1,120.3 | 976.5 | 818.3 | 798.6 | Targets subject to OEB approval of 2019 performance |
| Low-Income | 43.6 | 59.2 | 80.2 | 68.8 | 74.7 | |
| Large Volume | 1,236.1 | 890.9 | 463.1 | 195.7 | 137.7 | |

Table 4.7 Total Annual and Cumulative Natural Gas Savings for 2019 (Gross and Net) (million m³) (Union Rate Zones)

| SCORECARD | ANNUAL NATURALGAS SAVINGS | | CUMULATIVE NATURALGAS SAVINGS | |
|----------------------|---------------------------|--------------|-------------------------------|-----------------|
| | GROSS | NET | GROSS | NET |
| Resource Acquisition | 105.44 | 52.78 | 1,847.99 | 935.59 |
| Low-Income | 3.67 | 3.59 | 80.80 | 79.31 |
| Large Volume | 46.03 | 7.05 | 472.70 | 72.37 |
| Performance-Based | 0.01 | 0.01 | 0.04 | 0.04 |
| Total | 155.14 | 63.43 | 2,401.53 | 1,087.32 |



Table 4.8 Total Historic Annual Natural Gas Savings (Gross and Net) (million m³) (Union Rate Zones)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------|
| Total <u>Net</u> Annual Natural Gas Savings | 55.85 | 61.85 | 92.60 | 121.12 | 139.03 | 137.44 | 179.97 | 131.83 | 125.08 | 55.97 | 69.93 | 66.17 | 63.43 |
| Total <u>Gross</u> Annual Natural Gas Savings | Not reported for 2007-2011 | | | | | 282.18 | 370.47 | 267.47 | 255.17 | 188.74 | 183.24 | 160.87 | 155.14 |

¹2019 DSM results subject to OEB approval

Table 4.9 Total Historic Cumulative Natural Gas Savings (Gross and Net) (million m³) (Union Rate Zones)

| ITEM | 2007-2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|---|----------------------------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| Total <u>Net</u> Cumulative Natural Gas Savings | Not reported for 2007-2011 | 2,336.35 | 2,820.83 | 1,889.46 | 1,750.77 | 959.44 | 1,182.36 | 1,124.48 | 1,087.32 |
| Total <u>Gross</u> Cumulative Natural Gas Savings | Not reported for 2007-2011 | 4,777.83 | 5,752.39 | 3,752.37 | 3,482.50 | 2,758.90 | 2,886.61 | 2,451.15 | 2,401.53 |

¹2019 DSM results subject to OEB approval



Table 4.10 Total Annual Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (Union Rate Zones)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|--|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| Net Annual Natural Gas Savings (million m ³) | 55.9 | 61.9 | 92.6 | 121.1 | 139.0 | 137.4 | 180.0 | 131.8 | 125.1 | 56.0 | 69.9 | 66.2 | 63.4 |
| Net Annual Natural Gas Savings as a % of Natural Gas Sales | 0.42% | 0.47% | 0.75% | 0.95% | 1.02% | 1.03% | 1.29% | 0.93% | 0.93% | 0.43% | 0.56% | 0.50% | 0.47% |
| Gross Annual Natural Gas Savings (million m ³) | Not reported for 2007-2011 | | | | | 282.2 | 370.5 | 267.5 | 255.2 | 188.7 | 183.2 | 160.9 | 155.1 |
| Gross Annual Natural Gas Savings as a % of Natural Gas Sales | | | | | | 2.11% | 2.65% | 1.88% | 1.90% | 1.46% | 1.48% | 1.22% | 1.15% |
| Total Natural Gas Sales (million m ³) ² | 13,158.0 | 13,231.2 | 12,327.8 | 12,778.9 | 13,655.0 | 13,396.1 | 13,992.7 | 14,204.1 | 13,405.0 | 12,935.8 | 12,408.7 | 13,210.0 | 13,508.9 |

¹2019 DSM results subject to OEB approval

²Total Natural Gas Sales only includes rate classes that are eligible for DSM and subject to DSM costs

Table 4.11 Total Cumulative Natural Gas Savings as a Percent of Total Annual Natural Gas Sales (Gross and Net) (Union Rate Zones)

| ITEM | 2017-2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ¹ |
|--|----------------------------|----------|----------|----------|----------|----------|----------|----------|-------------------|
| Net Cumulative Natural Gas Savings (million m ³) | Not reported for 2007-2011 | 2,336.4 | 2,820.8 | 1,889.5 | 1,750.8 | 959.4 | 1,182.4 | 1,124.5 | 1,087.3 |
| Net Cumulative Natural Gas Savings as a % of Natural Gas Sales | | 17.44% | 20.16% | 13.30% | 13.06% | 7.42% | 9.53% | 8.51% | 8.05% |
| Gross Cumulative Natural Gas Savings (million m ³) | Not reported for 2007-2011 | 4,777.8 | 5,752.4 | 3,752.4 | 3,482.5 | 2,758.9 | 2,886.6 | 2,451.1 | 2,401.5 |
| Gross Cumulative Natural Gas Savings as a % of Natural Gas Sales | | 35.67% | 41.11% | 26.42% | 25.98% | 21.33% | 23.26% | 18.56% | 17.78% |
| Total Natural Gas Sales (million m ³) ² | | 13,396.1 | 13,992.7 | 14,204.1 | 13,405.0 | 12,935.8 | 12,408.7 | 13,210.0 | 13,508.9 |

¹2019 DSM results subject to OEB approval

²Total Natural Gas Sales only includes rate classes that are eligible for DSM and subject to DSM costs



Table 4.12 Actual Annual Gas Operating Revenue (\$ million) (Union Rate Zones)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 ^{1,2} |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|
| Gas Sales and Distribution Revenue | \$1,811.0 | \$1,852.0 | \$1,684.0 | \$1,493.0 | \$1,468.0 | \$1,365.0 | \$1,621.0 | \$1,755.0 | \$1,675.0 | \$1,529.0 | \$1,873.0 | \$1,813.0 | \$4,631.5 |
| Less Total Cost of Gas | \$1,156.0 | \$1,177.0 | \$1,026.0 | \$794.0 | \$755.0 | \$638.0 | \$849.0 | \$977.0 | \$875.0 | \$717.0 | \$1,039.0 | \$920.0 | \$2,265.3 |
| Total Distribution Revenue | \$655.0 | \$675.0 | \$658.0 | \$699.0 | \$713.0 | \$727.0 | \$772.0 | \$778.0 | \$800.0 | \$812.0 | \$834.0 | \$893.0 | \$2,366.2 |

¹As of 2019, Distribution Revenue is the gas sales and distribution revenue (excluding transportation, storage, and other operating revenue) less the cost of gas.

²Consistent with EB-2020-0134 (Disposition of Deferral & Variance Accounts and Earnings Sharing), this is now presented as combined figures for Enbridge Gas Inc. The methodology in deriving the values differs from historical practice due to amalgamation and alignment.

Table 4.13 Total Natural Gas Sales Volumes (million m³) (Union Rate Zones)

| ITEM | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total Natural Gas Sales ¹ | 13,158.02 | 13,231.16 | 12,327.85 | 12,778.87 | 13,654.99 | 13,396.12 | 13,992.69 | 14,204.10 | 13,404.98 | 12,935.77 | 12,408.73 | 13,210.01 | 13,508.92 |

¹Only includes rate classes eligible for DSM and subject to DSM costs

Table 4.14 Number of Customers by Customer Type (Union Rate Zones)

| CUSTOMER TYPE | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------|------------------|------------------|------------------|------------------|------------------|
| Residential ¹ | 1,306,495 | 1,325,703 | 1,344,513 | 1,364,322 | 1,381,941 |
| Commercial | 119,899 | 120,613 | 121,234 | 121,971 | 122,909 |
| Industrial | 463 | 460 | 470 | 470 | 493 |
| Wholesale | 5 | 5 | 6 | 7 | 7 |
| Total | 1,426,862 | 1,446,781 | 1,466,223 | 1,486,770 | 1,505,350 |

¹Residential customers include Low Income



Table 4.15 Number of Customers by Rate Class (Union Rate Zones)

| RATE CLASS | 2015 | 2016 | 2017 | 2018 | 2019 |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|
| <u>General Service</u> | | | | | |
| M1 | 1,083,032 | 1,097,032 | 1,111,544 | 1,127,352 | 1,141,280 |
| M2 | 7,437 | 7,730 | 7,553 | 7,469 | 7,783 |
| O1 | 333,773 | 339,335 | 344,458 | 349,354 | 353,643 |
| 10 | 2,152 | 2,219 | 2,192 | 2,118 | 2,144 |
| Total | 1,426,394 | 1,446,316 | 1,465,747 | 1,486,293 | 1,504,850 |
| <u>Contract</u> | | | | | |
| M4 | 156 | 165 | 185 | 208 | 232 |
| M5 | 80 | 72 | 59 | 38 | 42 |
| M7 | 28 | 28 | 30 | 30 | 36 |
| T1 | 37 | 37 | 37 | 37 | 37 |
| T2 | 22 | 22 | 23 | 24 | 25 |
| 20 | 50 | 47 | 46 | 44 | 54 |
| 100 | 10 | 11 | 11 | 11 | 12 |
| Total | 383 | 382 | 391 | 392 | 438 |
| <u>Non-DSM Rate Classes</u> | | | | | |
| M9 | 2 | 2 | 3 | 3 | 4 |
| M10 | 2 | 2 | 2 | 3 | 2 |
| T3 | 1 | 1 | 1 | 1 | 1 |
| 25 | 80 | 78 | 79 | 78 | 55 |
| Total | 1,426,862 | 1,446,781 | 1,466,223 | 1,486,770 | 1,505,350 |



5. Programs and Offerings (EGD Rate Zone)

Enbridge Gas' DSM portfolio for the EGD rate zone consists of the following programs:

- Resource Acquisition Program (Section 5.1)
- Low-Income Program (Section 5.2)
- Market Transformation & Energy Management Program (Section 5.3)

5.1 RESOURCE ACQUISITION PROGRAM

Enbridge Gas' Resource Acquisition Program for the EGD rate zone consists of the following offerings:

- Home Efficiency Rebate Offering (Section 5.1.1)
- Residential Adaptive Thermostat Offering (Section 5.1.2)
- Custom Commercial Offering (Section 5.1.3)
- Custom Industrial Offering (Section 5.1.4)
- Commercial & Industrial Prescriptive (Fixed) Incentive Offering (Section 5.1.5)
- Commercial & Industrial Direct Install Offering (Section 5.1.6)
- Energy Leaders Offering (Section 5.1.7)

5.1.1 Home Efficiency Rebate Offering

Through the Home Efficiency Rebate ("HER") Offering, residential customers gain a better understanding of their home's energy usage, and insights into energy improvement opportunities identified through the completion of a home energy audit. By participating in HER, homeowners can increase the energy efficiency of their home and decrease their energy bills each year, enhance home comfort, avoid unsightly mould and condensation caused by poor insulation, and improve their health through better indoor air quality.

Through the offering, participants work with an approved Service Organization ("SO") to complete a preliminary energy assessment to determine the home's current energy use and profile. A Registered Energy Advisor ("REA") models the home using Natural Resources Canada ("NRCan") energy modelling software (HOT2000) to produce an energy efficiency report for the homeowner that outlines all energy saving opportunities, along with the home's EnerGuide rating and energy saving tips and information. With this information, the homeowner is able to make informed decisions regarding potential energy efficient improvements. Rebates are available for completing the assessments and at least two eligible measures recommended in the energy efficiency report (incentive structure and measure list can be found in Appendix C). After upgrades to the home are complete, participants complete a post-energy assessment with the REA to quantify the energy savings achieved by the retrofits, as determined by HOT2000.

The target customer for this offering are residential customers within the EGD rate zone, including detached, semi-detached, townhouses, row townhouses, and mobile homes. To be eligible for the offering, participants must have a natural gas furnace or boiler as a primary heating system. Additionally, participants must complete both the pre-energy assessment and post-energy assessments using an Enbridge Gas approved SO and install at least two qualifying measures.



The aggregate annual gas savings across all participants in the offering must achieve, on average, at least a 15% reduction in annual natural gas use, when comparing the results of the pre-energy assessment to the results of the post-energy assessment as determined by HOT2000.

Table 5.0 2019 Home Efficiency Rebate Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 220,374,038 |
| Participants (homes) | 16,480 |

Offering Changes in 2019:

Following the amalgamation of Union Gas Limited and Enbridge Gas Distribution, the former home retrofit offerings were harmonized in May of 2019 from the customer/participant perspective. The offering adopted a new name, the Home Efficiency Rebate (“HER”) Offering, to facilitate clarity and a consistent customer-facing experience for all Enbridge Gas customers province-wide. By Q3 2019, consistent marketing initiatives were being deployed across all rate zones in the Enbridge Gas franchise area.

Harmonization also included combining participating SOs. The 12 SOs signed amended program delivery agreements, which allowed their energy advisors to service homes across both former franchise areas. The energy advisor process and documentation requirements were streamlined for consistency so that customers would have a similar experience regardless of their rate zone.

Enbridge Gas’ partnerships with the Government of Ontario and IESO, which began in 2016 and 2017 respectively, concluded during the 2018 program year. No new participants were enrolled in the offering in 2019 using Government of Ontario or IESO funding. With the conclusion of these partnerships, the offering returned to being DSM ratepayer funded only. As such, all non-Enbridge Gas natural gas homes, and homes heated by fuels other than natural gas, were no longer eligible to enroll in the offering in 2019.

Lessons Learned:

With the conclusion of funding from the Government of Ontario and IESO, the Company saw a reduction in participation, specifically as it relates to the furnace rebate, which was reduced from \$1000 to \$750.

Enbridge Gas also identified that many participants were pairing furnaces with air sealing to meet the minimum offering eligibility of two measures. While this results in significant gas savings that meet the offering’s requirements, it became apparent that the measure mix of installations could be diversified to focus more on insulation and building envelope measures, which can generate even greater gas savings. To diversify the measure mix, Enbridge Gas launched two limited time offers (“LTO”). The purpose of the LTOs were to encouraged homeowners to think more about their entire home, beyond the furnace and air sealing, and to increase participation in attic insulation resulting in higher gas savings per home. The LTOs also enabled HVACs and insulators to work together, with homeowners, to support the goals of the offering. LTO incentive details can be found in Appendix C.

By the end of 2019, results began to show a change in participant behaviour with an increase in the installation of attic insulation. The information and analytics gathered from these 2019 projects will allow Enbridge Gas to tweak and update the offering design for 2020 and beyond.



Anticipated Offering Changes for 2020:

As a result of NRCan's Regulations Amending the Energy Efficiency Regulations, 2016 (Amendment 15): SOR/2019-164 ("Amendment 15"), changes to the furnace rebate are likely required, as the new regulation is expected to reduce the savings associated with the furnace measure. With the introduction of the LTOs in 2019 noted above, Enbridge Gas was able to test potential changes to the offering, such as a shift from furnace participation to other measures.

5.1.2 Residential Adaptive Thermostat Offering

Adaptive thermostats, also known as smart thermostats, are one of the easiest ways for residential customers to save on energy costs. Adaptive thermostats use sensors and Wi-Fi technology to give homeowners greater flexibility in controlling heating and cooling needs while at home or away, which supports a reduced demand on energy consumption. The offering provides customers a rebate towards the purchase of an eligible adaptive thermostat. Incentive details are provided in Appendix C.

To be eligible for the offering, a customer must:

- Be a residential customer in the EGD rate zone;
- Reside in a single-family home (detached, semi-detached, and row townhouse homes are eligible);
- Have their adaptive thermostat control their primary heating source of natural gas (i.e. propane, oil and electric heating is not eligible); and,
- Have not applied to and/or received an incentive related to the thermostat through any other conservation program(s) in Ontario.

Table 5.1 2019 Residential Adaptive Thermostat Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 35,203,822 |

Offering Changes in 2019:

For the 2019 program year, the rebate was decreased from \$100 to \$75. This change was made to reflect the decrease in retail prices for the adaptive thermostat technology, and to maximize energy savings within the DSM budget available.

Furthermore, in July 2019 the design of the offering changed from a post-purchase rebate to an instant rebate. This made the incentive available in-store at the time of purchase (at participating Home Depot locations) as well as online. This change was made to modernize and enhance the participation experience, in an effort to increase participation.

Lessons Learned:

Providing an instant rebate for purchases of adaptive thermostats is a new and innovative procedure, and as such required significant time and effort to launch. Several learnings were experienced throughout the process, including how to handle data transfer issues and



how to make process changes to enhance customer experience. As the year progressed, the issues were resolved, and the Company started to see increased participation. The year ended with strong monthly results, illustrating the potential of the program. Enbridge Gas will continue to monitor uptake to ensure the growth of the offering.

Anticipated Offering Changes for 2020:

Enbridge Gas does not anticipate significant changes to the offering in 2020. The focus in 2020 will be to enhance marketing efforts to generate offering awareness, increase participation, and improve customer experience. In addition, efforts will be made to explore opportunities to expand the offering to other online/retail channels and to add more qualifying devices to the program.

5.1.3 Custom Commercial Offering

The Custom Commercial Offering addresses energy savings opportunities related to unique building specifications, design concepts, processes and/or new technologies that are outside the scope of prescriptive measures. The offering provides technical assistance and financial incentives to encourage customers to implement energy efficient technologies. Enbridge Gas provides consultative services to customers and third-party service providers aimed at assessing building energy consumption and making recommendations for gas-saving measures. See Appendix C for the offering details.

The Custom Commercial Offering targets commercial customers, with the exception of low-income qualified multi-family buildings (see Section 5.2.2, the Multi-Residential Affordable Housing Offering).

Table 5.2 2019 Custom Commercial Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Large Volume Customers Net Cumulative Natural Gas Savings (m ³) | 146,097,211 |
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 9,723,006 |

Offering Changes in 2019:

In 2019, Enbridge Gas adjusted the incentive structure from three tiers to two tiers, in an effort to:

- Reduce complexity of the offering;
- Align all offering incentives within the Custom Commercial Offering;
- Provide a larger incentive for projects with higher savings percentages; and,
- Provide more opportunity for smaller customers to participate.

In response to market needs, Enbridge Gas began providing support and financial incentives for custom new construction projects that are not applicable to the Savings by Design Commercial Offering (i.e. for warehouses and other buildings under 50,000 ft²). Pre- and post-built energy simulation models are required, and incentives are available for energy simulation modeling and the implementation of



energy efficient measures. However, no results occurred in 2019 due to the longer timeframe required to influence new construction projects.

Lessons Learned:

Limited time offers continue to drive increased results, by increasing the number of projects influenced during the customers' typical budget planning cycle (i.e. prior to Q4).

Early review of the incentive structure changes showed that it may not have drove additional participation from smaller customers.

Enbridge Gas will continue to explore strategies to better support smaller customers.

Anticipated Offering Changes for 2020:

Enbridge Gas expects to align the custom incentive structures across the EGD rate zone and Union rate zones, to create a consistent province-wide offering. Additional business partner incentives will also be launched in order to better support smaller customers/projects. Enbridge Gas also expects to shift all prescriptive boilers to custom.

5.1.4 Custom Industrial Offering

The Custom Industrial Offering addresses energy savings opportunities related to unique building specifications, design concepts, processes and/or new technologies that are outside the scope of prescriptive measures. The offering provides technical assistance and financial incentives to encourage industrial customers to implement energy efficient technologies. Enbridge Gas provides consultative services to customers and third-party service providers aimed at assessing building energy consumption and making recommendations for gas-saving measures. See Appendix C for the offering details.

Table 5.3 2019 Custom Industrial Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Large Volume Customers Net Cumulative Natural Gas Savings (m ³) | 292,996,747 |
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 1,768,395 |

Offering Changes in 2019:

In 2019, Enbridge Gas introduced a limited time offer for industrial customers with annual consumption greater than 1 million m³. To qualify, customers must apply early in the year and participants must work with Enbridge Gas Energy Solutions Advisors to develop an annual energy efficiency plan. As part of the offer, customers are eligible to apply for energy efficiency training assistance as well as receiving funding support to attend energy awareness education sessions. Upon a timely submission of the annual energy efficiency



plan, the projects within the submitted energy efficiency plan qualify for double the regular incentive, with an increased cap of \$250,000 per customer annually.

Lessons Learned:

Regarding the limited time offer, Enbridge Gas experienced more influence over the project decision through the increased involvement in customer's capital planning cycle early in the year. The increased engagement between Enbridge Gas and customer's team led to a better project approval and implementation.

Anticipated Offering Changes for 2020:

Enbridge Gas will explore aligning the custom offerings across the EGD rate zone and Union rate zones, to create a consistent province-wide offering.

5.1.5 Commercial & Industrial Prescriptive (Fixed) Incentive Offering

Through the Commercial/Industrial Prescriptive (Fixed) Incentive Offering, fixed financial incentives are available for the installation of eligible high-efficiency technologies. Incentives are provided to customers, service providers, and/or distributors/dealers, depending on the technology. Please see Appendix C for the full list of eligible technologies and their incentives. Energy savings are based on the OEB's Technical Resource Manual. See Section 2.6 for more details regarding the TRM.

Table 5.4 2019 Commercial & Industrial Prescriptive (Fixed) Incentive Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Large Volume Customers Net Cumulative Natural Gas Savings (m ³) | 18,898,183 |
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 29,861,941 |

Offering Changes in 2019:

In an effort to improve offering consistency between the EGD rate zone and Union rate zones, incentive structures for the majority of prescriptive measures were aligned province-wide in 2019.

In June 2019, Enbridge Gas launched a new midstream initiative through a third-party delivery agent, branded as the "Distributor Discount Program". This initiative targets distributors or equipment dealers who sell select high-efficient equipment, to promote the purchase of the high-efficiency option at the point of sale. The following measures were transitioned from a downstream customer incentive to the midstream initiative:

- HVAC
 - Condensing Water Heaters (Tankless, Storage Tanks)



- Condensing Unit Heaters
- Foodservice
 - EnergyStar Fryers
 - EnergyStar Steam Cookers
 - High Efficiency Under Fired Broilers

Other notable 2019 offering changes include:

- Discontinuation of the infrared heater incentive, in an attempt to lower free-ridership in the offering (see Lessons Learned below)
- Introduction of ERV/HRV multi-family in-suite measure for the EGD rate zone.
- The launch of limited-time bonus offers for ozone laundry measures, to drive greater participation from commercial customers.

Lessons Learned:

Early results for the new midstream initiative were low due to typical challenges when launching new large-scale initiatives, including challenges to ensure the offering's requirements are met by distributors/dealers (most distributors/dealers take 1-2 months to align their operations to meet reporting and documentation requirements). In addition, distributors/dealers require time and resources to effectively communicate the offering within their organization.

Informed in part by the 2017 C&I Prescriptive Verification Report⁹, Enbridge Gas learned that the infrared heater technology has high free-rider participation within the offering. The decision was made to discontinue the infrared heater incentive, in an attempt to lower free-ridership in the offering.

Anticipated Offering Changes for 2020:

With respect to the new midstream initiative, Enbridge Gas will seek to improve engagement throughout the distributor/dealer's organizations. This includes:

- Enhancing offering materials and marketing efforts;
- Providing hands-on training for branch staff; and,
- Providing contact information for direct support at the counter-staff level.

Enbridge Gas will also explore adding more high-efficiency equipment options to the midstream initiative.

Enbridge Gas anticipates that there will be opportunities increase to customer incentive levels for certain technologies within the offering, to optimize natural gas savings results.

⁹ <https://www.oeb.ca/sites/default/files/2017-DSM-Annual-Verification-Report.pdf>, Appendix S



5.1.6 Commercial & Industrial Direct Install Offering

The Commercial & Industrial Direct Install Offering provides a turnkey solution for customers who are less likely to participating in traditional offerings, by providing the installation of energy efficient technologies. The offering also provides increased incentive levels for select technologies. Offering details are provided in Appendix C.

Table 5.5 2019 Commercial & Industrial Direct Install Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Large Volume Customers Net Cumulative Natural Gas Savings (m ³) | 42,896,376 |
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 72,538,571 |

Offering Changes in 2019:

In 2019, the pedestrian air door measure was removed from the offering due to low uptake and interest from customers. The shipping and receiving air door measure, and demand control kitchen ventilation measure, remained as part of the offering.

Lessons Learned:

Enbridge Gas has found that a barrier in initial participation is lack of clarity in the legitimacy of the offering (due to the high incentive and turnkey installation). To mitigate the issue, vendors require direct touchpoints with customers, including personalized site visits to provide a quote and set up the installation. Furthermore, promoting the offering earlier in the year and using multiple marketing channels can help improve legitimacy of the offering to potential participants.

Enbridge Gas also found that streamlining the offering's administrative processes (such as the documentation requirements for invoicing) to expedite the project submissions and payments to the contractors can increase participation results.

Anticipated Offering Changes for 2020:

The following offering changes are being explored for 2020:

- Addition of the dock door seals measure to the offering
- Launch of a demand control kitchen ventilation collaboration initiative with the IESO



5.1.7 Energy Leaders Offering

The Energy Leaders Offering is intended to appeal to early adopters of new and emerging technologies, by providing early adopters with increased incentives for the implementation of new and innovative technologies. Offering details are provided in Appendix C.

The main target for this offering are commercial, agriculture, and industrial customers who Enbridge Gas identifies as a leader in energy efficiency.

Table 5.6 2019 Energy Leaders Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Large Volume Customers Net Cumulative Natural Gas Savings (m ³) | 0 |
| Small Volume Customers Net Cumulative Natural Gas Savings (m ³) | 0 |

Offering Changes in 2019:

Projects approved through the offering are required to be new technologies (i.e. not widely adopted or widely available) implemented by early adopters. While several technologies and opportunities were explored in 2019, Enbridge Gas did not identify projects for the offering. The technologies and opportunities reviewed in 2019 however will support future projects within the offering.

Lessons Learned:

While the offering focuses on barriers such as the commercial availability of the technologies, market barriers are in fact an issue in some cases. Enbridge Gas will look to support market barriers as well as technical barriers in future years.

Anticipated Offering Changes for 2020:

Enbridge Gas expects that some of the opportunities explored in 2019 may be implemented in the 2020 program year. While this is a smaller offering, Enbridge Gas believes it is important to maintain that status of the offering to support new energy-efficient technologies.

5.2 LOW-INCOME PROGRAM

Enbridge Gas' Low-Income Program for the EGD rate zone consists of the following offerings:

- Home Winterproofing Offering (Section 5.2.1)
- Multi-Residential Affordable Housing Offering (Section 5.2.2)
- Savings by Design Affordable Housing Offering (Section 5.2.3)



5.2.1 Home Winterproofing Offering

The Home Winterproofing Offering, branded as Home Winterproofing or “HWP”, is designed to reduce energy costs and improve indoor home comfort for low-income customers (homeowners and tenants who pay their natural gas bill). Participants receive a home energy assessment and direct installation of weatherization services, with no cost to the participant. As a health and safety value add-on, a carbon monoxide monitor is provided to participants where one is not already present in the home. At the time of the home energy assessment, the home is also prequalified for water conservation measures (showerheads and aerators) and a smart thermostat. The offering is available for both privately owned single-family homes, and the social and assisted housing. Offering details can be found in Appendix C.

Table 5.7 2019 Home Winterproofing Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 27,618,723 |

Offering Changes in 2019:

To enhance the offering delivery, Enbridge Gas increased the number of delivery agents to assist with customer scheduling and to ensure annual targets are achieved.

From an internal systems standpoint, Enbridge Gas proceeded with EnergyX testing and training in Q4 of 2019. This tool serves as a standardized reporting platform for all offering projects and will reduce the administrative burden for delivery agents. During Q4 of 2019, delivery agents started using the tool to upload 2019 projects and future 2020 projects.

In Q4 of 2019, Enbridge Gas also completed the alignment of offering processes and materials for the EGD rate zone and the Union rate zones' low-income single-family offerings. This resulted in all rate zones using the same reporting, application and marketing materials.

Also in 2019, the HWP Mobile Truck was introduced and attended events across the EGD rate zone to promote the Home Winterproofing Offering and the Home Efficiency Rebate Offering. Through the initiative, approximately 1,000 qualified Home Winterproofing Offering applications were signed.

Furthermore, Enbridge Gas and the IESO shared the same delivery agent for their respective low-income single-family offerings within the Toronto area. As such, the two entities were able to coordinate on income qualification for potential participants in the area. This collaboration reduced duplicative income qualification efforts and confusion among customers, and resulted in the ability to advise of potential participants between Enbridge Gas and IESO.

Lessons Learned:

In 2019, it was identified that the time to complete some projects was longer than anticipated for some delivery agents, due to large volumes and competing programs. To mitigate this issue, Enbridge Gas increased the number of delivery agents from three to four, and redefined their service areas to assist with the backlog. This strategy proved to be a success as the offering exceeded target.



In 2019, a robust marketing campaign over a variety of media channels drove a steady supply of leads to the delivery agent, driving increased offering results record results and proving the impact that marketing and awareness has on achieving energy efficiency results.

Anticipated Offering Changes for 2020:

The EnergyX platform will be fully operational in 2020, which will provide more effective management and delivery of the offering.

Enbridge Gas will also launch the collaboration with The Affordability Fund ("AFT") program to identify additional potential low-income participants. Through this program, AFT's delivery agent will promote Enbridge Gas' offer to qualified AFT participants.

Enbridge Gas will continue to explore alignment with the Union rate zones' Home Weatherization Offering to maximize uptake and provide a better experience to low-income customers. This could include:

- Aligning the offering name to limit market confusion; and,
- Sharing more marketing, associations and partnerships costs to maximize cost effectiveness and efficiencies.

5.2.2 Multi-Residential Affordable Housing Offering

The Multi-Residential Affordable Housing Offering provides social and assisted housing and low-income market rate multi-family buildings with technical assistance and incentives for a variety of energy efficiency measures. Participants are eligible for both custom and prescriptive measure incentives, similar to the Commercial & Industrial Prescriptive (Fixed) Incentives Offering and the Custom Commercial Offering, however incentive levels are higher to reflect the needs of the low-income market. Offering details are provided in Appendix C.

Table 5.8 2019 Multi-Residential Affordable Housing Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 88,957,000 |

Offering Changes in 2019:

Enbridge Gas adjusted the incentive structure for certain measures, from a per estimated annual m³ of natural gas savings basis to a per estimated lifetime m³ of natural gas savings. This change was made to influence longer-term savings.

Lessons Learned:

Enbridge Gas clarified the eligibility criteria for condominium buildings in designated low-income areas within the City of Toronto. In order to participate in the offering, condominium buildings in designated low-income areas within Toronto must be built in 1985 or earlier. This aligns with the eligibility cut-off for the City of Toronto's TowerWise program, and avoids situations where high-end condos constructed in low-income areas might inadvertently qualify to participate in the offering.



Enbridge Gas continuously explored opportunities to improve the offering, such as focusing on the marketing efforts to increase market rate participation.

Anticipated Offering Changes for 2020:

Several changes are anticipated for 2020 in an effort to align the EGD rate zone's low-income multi-family offering with the Union rate zones' comparable offering, including using consistently branded names and changes to measure lists.

Further changes to incentive structures and measure lists are anticipated, to align Enbridge Gas' low-income multi-family offerings with the non-low-income commercial offerings, where appropriate. This is being explored to reduce customer confusion.

5.2.3 Savings by Design Affordable Housing Offering

The Savings by Design Affordable Housing Offering helps affordable housing builders improve energy performance in new construction projects, by providing a variety of support activities from the early design phase through to construction. The offering is designed to influence builders to build affordable housing that exceed the 2017 Ontario Building Code by at least 7% for multi-residential projects, and at least 15% for single family homes. Offering details are provided in Appendix C.

Table 5.9 2019 Savings by Design Affordable Housing Offering Results (EGD Rate Zone)

| METRIC | ACHIEVEMENT |
|----------------------|-------------|
| Project Applications | 11 |

Offering Changes in 2019:

In 2019, Enbridge Gas re-branded the Affordable Housing New Construction Offering as the Savings by Design Affordable Housing offering, to better align with Enbridge Gas' residential and commercial new construction Savings by Design ("SBD") offerings. The key milestones within this offering have also been renamed: the Plan Review Summary became the Visioning Session, and the Design Phase Charette ("DCP") became Integrated Design Process ("IDP").

Within the offering, Enbridge Gas also aligned incentives between multi-residential (Part 3) and residential low-rise (Part 9) participants. The Technical Assistance Incentive for multi-residential (Part 3) participants was modified from a tiered structure to a fixed amount of \$7,500, to reduce confusion among participants.

Furthermore in 2019, two additional delivery agents (Canada Green Building Council and Building Knowledge) were added to the roster of consultants that facilitate the IDP workshops and produce energy modelling reports. The additions were made to meet the increasing demand of IDP workshops that were previously delivered solely by Sustainable Buildings Canada.

In response to feedback from 2018 participant experience research, sales staff were encouraged to follow up more frequently with the housing providers throughout the process. This ensures the participant received the necessary energy modelling support and helped them to achieve the offering energy efficiency goals.



Lessons Learned:

In 2019, Enbridge Gas identified inconsistencies in the quality of the reports produced by delivery agents. To improve quality control and consistency of participant experience, Enbridge Gas is developing a common IDP report template across all of the offering's delivery agents.

Enbridge Gas also learned that affordable housing providers would benefit from additional energy modelling to show their level of the energy efficiency achievement relative to the National Energy Code of Canada for Buildings ("NECB"), in addition to the Ontario Building Code. This is because several federal programs that provide funding for new affordable housing require funding recipients to disclose the energy efficiency of their building design relative to the NECB. Without receiving funding from federal programs, many affordable housing projects would be unable to proceed; thus, providing NECB equivalency assists housing providers to execute construction in the manner that the offering has helped them to design.

Anticipated Offering Changes for 2020:

In 2020, Enbridge Gas will require all delivery agents to use a common template for IDP reports, which will include a non-technical executive summary for decision-makers.

Enbridge Gas will also explore offering certain participants free re-modelling of their housing project relative to NECB, up to a maximum value of \$7,500.

5.3 MARKET TRANSFORMATION & ENERGY MANAGEMENT PROGRAM

Enbridge Gas' Market Transformation & Energy Management Program for the EGD rate zone consists of the following offerings:

- Savings by Design Residential Offering (Section 5.3.1)
- Savings by Design Commercial Offering (Section 5.3.2)
- School Energy Competition Offering (Section 5.3.3)
- Run it Right Offering (Section 5.3.4)
- Comprehensive Energy Management Offering (Section 5.3.5)

5.3.1 Savings by Design Residential Offering

The Savings by Design Residential Offering helps residential builders improve energy performance in new construction projects, by providing a variety of support activities from the early design phase through to construction. The offering is designed to transform builders, over a multi-year period, to build more homes that exceed the 2017 Ontario Building Code ("OBC 2017") by at least 15%. Offering details are provided in Appendix C.

**Table 5.10 2019 Savings by Design Residential Offering Results (EGD Rate Zone)**

| METRICS | ACHIEVEMENT |
|-------------|-------------|
| Builders | 39 |
| Homes Built | 2,989 |

Offering Changes in 2019:

In 2019, Enbridge Gas allowed builders to receive design support on more than one project (development) during a single full-day IDP workshop. The change was made to attract more projects into the offering, and to make it easier for builders to assemble their design teams and trades people to receive support on multiple projects. Stipulations were outlined, to ensure that each project (development) has a separate address and its own individual application, design and modelling report.

Lessons Learned:

Despite general increased awareness of energy efficiency among homebuyers, a significant effort is still required to convince homebuyers that buying a home built above OBC 2017 is a good investment. In addition, it can be difficult to convince builders to focus on the long-term benefits of energy efficiency due to the evolving state of the housing market.

Enbridge Gas has found that municipalities are making changes to their sustainability checklists for new homes, and builders are looking to Enbridge Gas to assist them in fulfilling the requirements within sustainability checklist. Enbridge Gas will continue to support builders with improving the energy performance of their developments.

Anticipated Offering Changes for 2020:

In 2020, Enbridge Gas will require all delivery agents to use a common template for IDP reports, which will include a non-technical executive summary for decision-makers.

5.3.2 Savings by Design Commercial Offering

The Savings by Design Commercial Offering encourages commercial developers and builders to design and build new developments to a level above the current Ontario Building Code ("OBC"). The offering provides participants an integrated design process ("IDP") and financial incentives. Through detailed analysis and modelling of various building elements, the goal is for participants to build at least 15% or above the 2017 OBC Part 3 requirements. Offering details are provided in Appendix C.

Table 5.11 2019 Savings by Design Commercial Offering Results (EGD Rate Zone)

| METRICS | ACHIEVEMENT |
|------------------|-------------|
| New Developments | 35 |



Offering Changes in 2019:

In 2019, Enbridge Gas enhanced its marketing efforts to increase awareness and participation in offering, by developing case studies that showcase past participation successes. Also, Enbridge Gas increased its municipal outreach efforts at various conferences, to influence changes at the municipal government level.

Lessons Learned:

Enbridge Gas has had success in not only improving building practices of participating builders and developers, but also in increasing the expertise and involvement of the subject matter experts in delivering the IDP workshops. This has led the workshops to become a platform to set modelling guidelines and protocols within the commercial new construction sector in Ontario.

Enbridge Gas will continue to focus on enhancing the key relationships with the architect community.

Anticipated Offering Changes for 2020:

Enbridge Gas does not anticipate major changes to the offering in 2020. Enbridge Gas will continue to expand the reach of offering by identifying new commercial and multi-residential projects, by working more closely with the municipalities and using internal data.

5.3.3 School Energy Competition Offering

The School Energy Competition Offering educates and empowers students to take action on energy use within their schools, homes and communities. Marketed as the Energy School Challenge (the “Challenge”), the offering engages schools in a friendly competition and has five main elements: education, behavioural change, implementation of activities, monitoring, and performance. Through the competition, each school is awarded points and is scored on the completion of activities. The three elementary and high schools that have scored the most points are awarded a financial prize. See Appendix C for offering details.

Table 5.12 2019 School Energy Competition Offering Results (EGD Rate Zone)

| METRICS | ACHIEVEMENT |
|---------|-------------|
| Schools | 32 |

Offering Changes in 2019:

In 2019, Enbridge Gas launched the following strategies to increase offering awareness and improve the participants experience:

- Implementation of an online platform to improve the activity submission process. This platform also creates a more fluid interactive experience for the participating schools;
- Increased focus on marketing initiatives, digital marketing tools to increase offering awareness and participation, and video case studies that profile schools; and,



- The launch of limited time offers to increase actions, by providing school/library supplies and computing assets. This was initiated based on prior feedback from teachers.

Lessons Learned:

Enbridge Gas has identified some barriers that limits participation in the offering, such as:

- Competing priorities for teachers;
- Multiple programs being delivered to schools by other entities;
- Job uncertainties for the teachers; and,
- Lengthy approval process from school boards, so that schools can participate.

Regarding school board approval processes, Enbridge Gas Energy Solutions Advisors play an important role in overcoming the barriers, by directly engaging with the school boards. Furthermore, the permission application for school boards was extended to be applicable the end of 2020, rather than requiring annual updates.

Furthermore, the program team continuously revises the activity descriptions to provide clear deliverables and adds flexibility to the activity criterion to accommodate various teaching methods.

Anticipated Offering Changes for 2020:

Enbridge Gas will explore partnership opportunities with the Ontario Science Centre to deliver fieldtrip activities for schools in 2020.

5.3.4 Run it Right Offering

The Run it Right Offering is designed to motivate commercial customers to optimize the operation of their buildings. Through analysis of detailed energy data, building operators and managers are empowered to make strategic data-driven decisions regarding energy use in their facility.

Technical support is provided to participants in order to identify opportunities to more efficiently use heating equipment and systems in place. Customers complete recommended actions, then monitor and maintain these actions over a 12-month time period. Offering details including financial incentives available to participants are provided in Appendix C.

Table 5.13 2019 Run it Right Offering Results (EGD Rate Zone)

| METRICS | ACHIEVEMENT |
|--|-------------|
| Participants | 84 |
| Large Volume Net Cumulative Gas Savings (m ³) (RA) | 1,611,139 |

Offering Changes in 2019:

In 2019, the incentive towards implementation costs was harmonized to \$8,000 regardless of customer consumption level. This change was made to reflect the fact that the cost of implementing operational improvement measures is not necessarily correlated to their gas



consumption level, but rather complexity of the building and/or gas usage. As with previous years, the implementation incentive coverage cannot exceed the total implementation cost.

Lessons Learned:

Enbridge Gas continues to experience some challenges in gaining access to daily energy consumption data in a timely manner for smaller participants.

Anticipated Offering Changes for 2020:

Enbridge Gas will continue to monitor the success of the Run it Right Offering. Enbridge Gas will review the offering design for approaches that better target participants, by using data analysis to identifying potential participants with the greatest savings opportunities.

5.3.5 Comprehensive Energy Management Offering

Through the Comprehensive Energy Management (“CEM”) Offering, Enbridge Gas influences industrial and large commercial customers to adopt and nurture a culture of conservation and continuous energy improvement. Enbridge Gas works with participants in the offer by examining their unique energy usage, creating an energy model, and guiding customers to undertake recommended actions suitable to their operation.

Incentives are structured to support initial start-up costs in baseline and energy plan development and then provide incentives for energy efficiency improvements. Appendix C outlines the offering details.

Table 5.14 2019 Comprehensive Energy Management Offering Results (EGD Rate Zone)

| METRICS | ACHIEVEMENT |
|--------------|-------------|
| Participants | 7 |

Offering Changes in 2019:

In 2019, the Energy Management Information System (“EMIS”) incentive limit was increased from \$40,000 to \$50,000, with a cap of 80% of the total EMIS cost. In addition, participant can apply for up to \$2,500 financial assistance for their energy team to cover the costs of energy management related training (such as CEM certification).

Lessons Learned:

Enbridge Gas has found that significant effort is required to strengthen the educational element of the offering among potential participants, which is critical to the success of the offering. In 2019, Enbridge Gas expanded its multi-media campaign by leveraging



various marketing tools including radio, digital media, and targeted print magazines to better reach the mid-to-low tier consumption customers. Furthermore, to better promote the offering and enhance Enbridge Gas' technical expertise in energy management, Enbridge Gas continued to engage in various events and speaking engagement.

Anticipated Offering Changes for 2020:

Enbridge Gas will continue to monitor the efficacy of the CEM Offering in order to identify improvement opportunities for 2020.



6. Programs and Offerings (Union Rate Zones)

Enbridge Gas' DSM portfolio for the Union rate zones consists of the following programs:

- Residential Program (Section 6.1)
- Commercial/Industrial Program (Section 6.2)
- Low-Income Program (Section 6.3)
- Large Volume Program (Section 6.4)
- Market Transformation Program (Section 6.5)
- Performance-Based Program (Section 6.6)

6.1 RESIDENTIAL PROGRAM

Enbridge Gas' Residential Program for the Union rate zones consists of the following offerings:

- Home Efficiency Rebate Offering (Section 6.1.1)
- Residential Adaptive Thermostat Offering (Section 6.1.2)

6.1.1 Home Efficiency Rebate Offering

Through the Home Efficiency Rebate ("HER") Offering, residential customers gain a better understanding of their home's energy usage, and insights into energy improvement opportunities identified through the completion of a home energy audit. By participating in HER, homeowners can increase the energy efficiency of their home and decrease their energy bills each year, enhance home comfort, avoid unsightly mould and condensation caused by poor insulation, and improve their health through better indoor air quality.

Through the offering, participants work with an approved Service Organization ("SO") to complete a preliminary energy assessment to determine the home's current energy use and profile. A Registered Energy Advisor ("REA") models the home using Natural Resources Canada ("NRCan") energy modelling software (HOT2000) to produce an energy efficiency report for the homeowner that outlines all energy saving opportunities, along with the home's EnerGuide rating and energy saving tips and information. With this information, the homeowner is able to make informed decisions regarding potential energy efficient improvements. Rebates are available for completing the assessments and at least two eligible measures recommended in the energy efficiency report (incentive structure and measure list can be found in Appendix D). After upgrades to the home are complete, participants complete a post-energy assessment with the REA to quantify the energy savings achieved by the retrofits, as determined by HOT2000.

The target customer for this offering are residential customers within Union rate zones, including detached, semi-detached, townhouses, row townhouses, and mobile homes. To be eligible for the offering, participants must have a natural gas furnace or boiler as a primary heating system. Additionally, participants must complete both the pre-energy and post-energy assessments using an Enbridge Gas approved SO and install at least two qualifying measures.

The aggregate annual gas savings across all participants in the offering must achieve, on average, at least a 15% reduction in annual natural gas use, when comparing the results of the pre-energy assessment to the results of the post-energy assessment as determined by HOT2000.

**Table 6.0 2019 Home Efficiency Rebate Offering Results (Union Rate Zones)**

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 154,742,128 |
| Participants (homes) | 10,958 |

Offering Changes in 2019:

Following the amalgamation of Union Gas Limited and Enbridge Gas Distribution, the former home retrofit offerings were harmonized in May of 2019 from the customer/participant perspective. The offering adopted a new name, the Home Efficiency Rebate (“HER”) offering, to facilitate clarity and a consistent customer-facing experience for all Enbridge Gas customers province-wide. By Q3 2019, consistent marketing initiatives were being deployed across all rate zones in the Enbridge Gas franchise area.

Harmonization also included combining participating SOs. The 12 SOs signed amended program delivery agreements, which allowed their energy advisors to service homes across both former franchise areas. The energy advisor process and documentation requirements were streamlined for consistency so that customers would have a similar experience regardless of their rate zone.

Enbridge Gas’s partnerships with the Government of Ontario and IESO, which began in 2016 and 2017 respectively, concluded during the 2018 program year. No new participants were enrolled in the offering in 2019 using Government of Ontario or IESO funding. With the conclusion of these partnerships, the offering returned to being DSM ratepayer funded only. As such, all non-Enbridge Gas natural gas homes, and homes heated by fuels other than natural gas, were no longer eligible to enroll in the offering in 2019.

Lessons Learned:

With the conclusion of funding from the Government of Ontario and IESO, the Company saw a reduction in participation, specifically as it relates to the furnace rebate, which was reduced from \$1000 to \$750.

Enbridge Gas also identified that many participants were pairing furnaces with air sealing to meet the minimum offering eligibility of two measures. While this results in significant gas savings that meet the offering's requirements, it became apparent that the measure mix of installations could be diversified to focus more on insulation and building envelope measures, which can generate even greater gas savings. To diversify the measure mix, Enbridge Gas launched two limited time offers (“LTO”). The purpose of the LTOs were to encouraged homeowners to think more about their entire home, beyond the furnace and air sealing, and to increase participation in attic insulation resulting in higher gas savings per home. The LTOs also enables HVACs and insulators to work together, with homeowners, to support the goals of the offering. LTO incentive details can be found in Appendix D.

By the end of 2019, results began to show a change in participant behaviour with an increase in the installation of attic insulation. The information and analytics gathered from these 2019 projects will allow Enbridge Gas to tweak and update the offering design for 2020 and beyond.



Anticipated Offering Changes for 2020:

As a result of Amendment 15, changes to the furnace rebate are likely required, as the new regulation is expected to reduce the savings associated with the furnace measure. With the introduction of the LTOs in 2019 noted above, Enbridge Gas was able to test potential changes to the offering, such as a shift from furnace participation to other measures.

6.1.2 Residential Adaptive Thermostat Offering

Adaptive thermostats, also known as smart thermostats, are one of the easiest ways for residential customers to save on energy costs. Adaptive thermostats use sensors and Wi-Fi technology to give homeowners greater flexibility in controlling heating and cooling needs while at home or away, which supports a reduced demand on energy consumption.

Within its Decision and Order on the 2015-2020 DSM Plans, the OEB directed the Company to consider the adaptive thermostat technology as part of its residential programming for the Union rate zones at the mid-term review (the EGD rate zone has provided an incentive for the technology to residential customers since 2016). In its January 15, 2018 mid-term review submission for Union rate zones, the Company proposed the development of a new adaptive thermostat offering within its Residential Program and began delivering the offering in 2019. The offering provides customers a rebate towards the purchase of an eligible adaptive thermostat. Incentive details are provided in Appendix D.

To be eligible for the offering, a customer must:

- Be a residential customer in a Union rate zone;
- Reside in a single-family home (detached, semi-detached, and row townhouse homes are eligible).
- Have their adaptive thermostat control their primary heating source of natural gas (i.e. propane, oil and electric heating is not eligible)
- Have not applied to and/or received an incentive related to the thermostat through any other conservation program(s) in Ontario.

Table 6.1 2019 Residential Adaptive Thermostat Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 8,416,434 |

Offering Changes in 2019:

As noted above, the offering is new for residential customers in Union rate zones in 2019. The offering, which mirrors the EGD rate zone offering, ensures equal access and a consistent offer to all Enbridge Gas residential customers province-wide.

Previously, the EGD rate zone offering consisted of a \$100 rebate for the purchase of the technology. For 2019 the rebate was lowered to \$75 across Union rate zones and the EGD rate zone. This change was made to reflect the decrease in retail prices for the adaptive thermostat technology, and to maximize energy savings within the DSM budget available.



Furthermore, the EGD rate zone offering consisted of a post-purchase customer rebate. In July 2019 the design of the offering changed to an instant rebate, across Union rate zones and the EGD rate zone. This made the incentive available in-store at the time of purchase (at participating Home Depot locations) as well as online. This change was made to modernize and enhance the participation experience, in an effort to increase participation.

Lessons Learned:

Providing an instant rebate for purchases of adaptive thermostats is a new and innovative procedure, and as such required significant time and effort to launch. Several learnings were experienced throughout the process, including how to handle data transfer issues and how to make process changes to enhance customer experience. As the year progressed, the issues were resolved, and the Company started to see increased participation. The year ended with strong monthly results, illustrating the potential of the program. Enbridge Gas will continue to monitor uptake to ensure the growth of the offering.

Anticipated Offering Changes for 2020:

Enbridge Gas does not anticipate significant changes to the offering in 2020. The focus in 2020 will be to enhance marketing efforts to generate offering awareness, increase participation, and improve customer experience. In addition, efforts will be made to explore opportunities to expand the offering to other online/retail channels and to add more qualifying devices to the program.

6.2 COMMERCIAL/INDUSTRIAL PROGRAM

Enbridge Gas' Commercial/Industrial Program for the Union rate zones consists of the following offerings:

- Commercial/Industrial Prescriptive Offering (Section 6.2.1)
- Commercial/Industrial Direct Install Offering (Section 6.2.2)
- Commercial/Industrial Custom Offering (Section 6.2.3)

6.2.1 Commercial/Industrial Prescriptive Offering

Through the Commercial/Industrial Prescriptive ("C/I Prescriptive") Offering, fixed financial incentives are available for the installation of eligible high-efficiency technologies. Incentives are provided to customers, service providers, and/or distributors/dealers, depending on the technology. Please see Appendix D for the full list of eligible technologies and their incentives. Energy savings are based on the OEB's Technical Resource Manual. See Section 2.6 for more details regarding the TRM.

Table 6.2 2019 Commercial/Industrial Prescriptive Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 152,270,800 |



Offering Changes in 2019:

In an effort to improve offering consistency between the EGD rate zone and Union rate zones, incentive structures for the majority of prescriptive measures were aligned province-wide in 2019.

In June 2019, Enbridge Gas launched a new midstream initiative through a third-party delivery agent, branded as the “Distributor Discount Program”. This initiative targets distributors or equipment dealers who sell select high-efficient equipment, to promote the purchase of the high-efficiency option at the point of sale. The following measures were transitioned from a downstream customer incentive to the midstream initiative:

- HVAC
 - Condensing Water Heaters (Tankless, Storage Tanks)
 - Condensing Unit Heaters
- Foodservice
 - EnergyStar Fryers
 - EnergyStar Steam Cookers
 - High Efficiency Under Fired Broilers

Other notable 2019 offering changes include:

- Discontinuation of the infrared heater incentive, in an attempt to lower free-ridership in the offering (see Lessons Learned below)
- The launch of limited-time bonus offers for ozone laundry measures, to drive greater participation from commercial customers.

Lessons Learned:

Early results for the new midstream initiative were low due to typical challenges when launching new large-scale initiatives, including challenges to ensure the offering’s requirements are met by distributors/dealers (most distributors/dealers take 1-2 months to align their operations to meet reporting and documentation requirements). In addition, distributors/dealers require time and resources to effectively communicate the offering within their organization.

Informed in part by the 2017 C&I Prescriptive Verification Report¹⁰, Enbridge Gas learned that the infrared heater technology has high free-rider participation within the offering. The decision was made to discontinue the infrared heater incentive, in an attempt to lower free-ridership in the offering.

Anticipated Offering Changes for 2020:

With respect to the new midstream initiative, Enbridge Gas will seek to improve engagement throughout the distributor/dealer’s organizations. This includes:

- Enhancing offering materials and marketing efforts;
- Providing hands-on training for branch staff; and,
- Providing contact information for direct support at the counter-staff level.

¹⁰ <https://www.oeb.ca/sites/default/files/2017-DSM-Annual-Verification-Report.pdf>, Appendix S



Enbridge Gas will also explore adding more high-efficiency equipment options to the midstream initiative.

Enbridge Gas anticipates that there will be opportunities increase to customer incentive levels for certain technologies within the offering, to optimize natural gas savings results.

6.2.2 Commercial/Industrial Direct Install Offering

The Commercial/Industrial Direct Install Offering provides a turnkey solution for customers who are less likely to participating in traditional offerings, by providing the installation of energy efficient technologies. The offering also provides increased incentive levels for select technologies. Offering details are provided in Appendix D.

Table 6.3 2019 Commercial/Industrial Direct Install Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 72,789,855 |

Offering Changes in 2019:

In 2019, the areas served were expanded in the London to Windsor area and in Eastern Ontario. The offering's base incentive structure was carried over from 2018, enabling vendors to continue their consistency and momentum into 2019. While the base incentive received by the participant did not change, a 30-day bonus offer (\$750) was introduced to encourage customers to pursue projects.

Lessons Learned:

Enbridge Gas has found that a barrier in initial participation is lack of clarity in the legitimacy of the offering (due to the high incentive and turnkey installation). To mitigate the issue, vendors require direct touchpoints with customers, including personalized site visits to provide a quote and set up the installation. Furthermore, promoting the offering earlier in the year and using multiple marketing channels can help improve legitimacy of the offering to potential participants.

Enbridge Gas also found that streamlining the offering's administrative processes (such as the documentation requirements for invoicing) to expedite the project submissions and payments to the contractors can increase participation results.

Enbridge Gas also found that having experienced vendor staff played an important role in meeting the logistical demands of the offering's expansion to new geographic areas.

Anticipated Offering Changes for 2020:

The following offering changes are being explored for 2020:

- Expanding the offering's installation areas for shipping and receiving air doors within the Union rate zones to include regions north of the Greater Toronto Area
- Addition of the dock door seals measure to the offering



- Addition of the demand control kitchen ventilation measure to the offering, including the launch of a collaboration initiative with the IESO

6.2.3 Commercial/Industrial Custom Offering

The Commercial/Industrial Custom (“C/I Custom”) Offering addresses energy savings opportunities related to unique building specifications, design concepts, processes and/or new technologies that are outside the scope of prescriptive measures. The offering provides technical assistance and financial incentives to encourage customers to implement energy efficient technologies. Enbridge Gas provides consultative services to customers and third-party service providers aimed at assessing building energy consumption and making recommendations for gas-saving measures. See Appendix D for the offering details.

The C/I Custom Offering targets commercial, agricultural, and industrial customers, with the exception of large volume customers (see Section 6.4.1, the Large Volume Direct Access Offering) and low-income qualified multi-family buildings (see Section 6.3.4, the Multi-Residential Affordable Housing Offering).

Table 6.4 2019 Commercial/Industrial Custom Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 542,374,593 |

Offering Changes in 2019:

The financial incentive for meter installation was increased from \$3,500 to \$5,000, with a limit of 5 meters per site, to reflect the increasing cost of meters.

Lessons Learned:

Providing customers with access to technical experts continues to be critical to the success of the offering. They provide full account management support, from initial assessment of energy efficiency opportunities, to completing the custom project application including confirming the appropriate base case, high efficiency option and measure life for the project.

Two initiatives, the study top-up and limited time offers, which continued from previous years, have continued to draw positive responses from customers. Both campaigns continue to contribute to the offering’s results, and are expected to continue driving participation going forward.

Anticipated Offering Changes for 2020:

For 2020, Enbridge Gas is exploring the reintroduction of steam trap replacement studies and steam trap replacement incentives to capture scenarios where customers are not conducting replacements on their own. Enbridge Gas also expects to transition common



dock door seal projects from the C/I Custom Offering to the C/I Prescriptive Offering and C/I Direct Install Offering, as an outcome of a new prescriptive measures being added to TRM Version 4.0 (see Section 2.6 for more information on the TRM).

6.3 LOW-INCOME PROGRAM

Enbridge Gas' Low-Income Program for the Union rate zones consists of the following offerings:

- Home Weatherization Offering (Section 6.3.1)
- Furnace End-of-Life Upgrade Offering (Section 6.3.2)
- Indigenous Offering (Section 6.3.3)
- Multi-Residential Affordable Housing Offering (Section 6.3.4)

6.3.1 Home Weatherization Offering

The Home Weatherization Offering is designed to reduce energy costs and improve indoor home comfort for low-income customers (homeowners and tenants who pay their natural gas bill). Participants receive a home energy assessment and direct installation of weatherization services, with no cost to the participant. As a health and safety value add-on, a carbon monoxide monitor is provided to participants where one is not already present in the home. At the time of the home energy assessment, the home is also prequalified for water conservation measures (showerheads and aerators) and a smart thermostat. The offering is available for both privately owned single-family homes, and the social and assisted housing. Offering details can be found in Appendix D.

Table 6.5 2019 Home Weatherization Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 51,145,673 |

Offering Changes in 2019:

In 2019, Union offered smart thermostats to past participants. Outreach was conducted as a standalone initiative to reach the large number of past participants.

Enbridge Gas and the IESO shared the same delivery agent for their respective low-income single-family offerings. As such, the two entities were able to coordinate on income qualification for potential participants. This collaboration reduced duplicative income qualification efforts and confusion among customers, and resulted in the ability to share potential low-income participants between Enbridge Gas and IESO.



Lessons Learned:

In 2019, a robust marketing campaign over a variety of media channels drove a steady supply of leads to the delivery agent, driving increased offering results and proving the impact that marketing and awareness has on achieving energy efficiency results.

Anticipated Offering Changes for 2020:

Enbridge Gas will continue to explore alignment with the EGD rate zone's Home Winterproofing Offering to maximize offering uptake and provide a better experience to low-income customers. This could include:

- Aligning the offering name to limit market confusion;
- Sharing more marketing, associations and partnerships costs to maximize cost effectiveness and efficiencies;
- Implementation of EnergyX;
- Implementation of HWP Mobile Truck; and,
- Adding exterior cladding as an optional measure.

6.3.2 Furnace End-of-Life Upgrade Offering

The Furnace End-of-Life Upgrade Offering provides an incentive to low-income customers to upgrade to a high-efficiency furnace upon failure of their existing furnace. Offering details are provided in Appendix D.

Table 6.6 2019 Furnace End-of-Life Upgrade Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 106,596 |

Offering Changes in 2019:

Uptake in this offering has been low in recent years, and while the Union rate zones' Low-Income Program remains above the OEB's low-income TRC-Plus threshold, this offering specifically is not cost-effective. Cost-effectiveness of the offering is further impacted by Amendment 15, which increases the baseline of residential furnaces from 90% Annual Fuel Utilization Efficiency ("AFUE") to 95% AFUE. As such, Enbridge Gas shifted focus to other offerings within the Low-Income Program.

Lessons Learned:

Uptake in this offering has been low in recent years and has a low TRC-Plus result. See "Offering Changes in 2019" above for more details.



Anticipated Offering Changes for 2020:

Enbridge Gas does not anticipate increased participation in this offering in 2020. See “Offering Changes in 2019” above for more details.

6.3.3 Indigenous Offering

The Indigenous Offering combines the Home Weatherization Offering and the Furnace End-of-Life Upgrade Offering, and is delivered directly to Indigenous communities within the Union rate zones. Participants receive a home energy assessment and direct installation of weatherization services, installed by an Indigenous delivery agent with no cost to the participant, along with a financial incentive if upgrading an end-of-life furnace to a higher-efficiency furnace. As a health and safety value add-on, a carbon monoxide monitor is provided to participants where one is not already present in the home. At the time of the home energy assessment, the home is also prequalified for water conservation measures (showerheads and aerators) and a smart thermostat. Offering details are provided in Appendix D. The offering also has an economic development component in an effort to provide local employment opportunities for members of participating communities.

In 2019, the offering included 5 communities. The number of communities targeted each year is dependent on the Band Council's endorsement to operate in their communities and capacity of the delivery agent.

Table 6.7 2019 Indigenous Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 479,971 |

Offering Changes in 2019:

There were no changes to the offering in 2019.

Lessons Learned:

Enbridge Gas has found that the offering has helped to foster stronger energy conservation relationships with the Indigenous communities.

Anticipated Offering Changes for 2020:

Enbridge Gas anticipates undertaking a pilot project will to determine other measures that are needed by Indigenous communities. The results will provide information for the planning of future DSM programs.



6.3.4 Multi-Residential Affordable Housing Offering

The Multi-Residential Affordable Housing Offering provides social and assisted housing and low-income market rate multi-family buildings with technical assistance and incentives for a variety of energy efficiency measures. Participants are eligible for both custom and prescriptive measure incentives, similar to the Commercial/Industrial Prescriptive Offering and Commercial/Industrial Custom Offering, however incentive levels are higher to reflect the needs of the low-income market. Offering details are provided in Appendix D.

Table 6.8 2019 Multi-Residential Affordable Housing Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|---|-------------|
| Social and Assisted Multi-Family Net Cumulative Natural Gas Savings (m ³) | 22,803,825 |
| Market Rate Multi-Family Net Cumulative Natural Gas Savings (m ³) | 4,774,193 |

Offering Changes in 2019:

There were no major offering changes in 2019.

Lessons Learned:

Recognizing that the offering's past participation was mainly from large social housing providers, significant analysis and preparation work was completed to improve the program delivery strategies. Lessons learned from this work will help Enbridge Gas serve more mid-size and smaller social housing providers, as well as private market rate buildings.

Anticipated Offering Changes for 2020:

Several changes are anticipated for 2020 in an effort to align the Union rate zones' offering with the EGD rate zone's comparable low-income multi-family offering, including using consistently branded names and changes to measure lists.

Further changes to incentive structures and measure lists are anticipated, to align Enbridge Gas' low-income multi-family offerings with the non-low-income commercial offerings, where appropriate. This is being explored to reduce customer confusion.

6.4 LARGE VOLUME PROGRAM

Enbridge Gas' Large Volume Program for the Union rate zones consists of the following offering:

- Large Volume Direct Access Offering (Section 6.4.1)



6.4.1 Large Volume Direct Access Offering

The Large Volume Direct Access Offering is exclusive to large volume contract customers within Rate T2 or Rate 100. All customers in these rate classes are eligible to participate in the offer. Customers in these rate classes have very high natural gas consumption and include large volume industrial operations, power generators, chemical plants, and petroleum refineries.

The offering uses a self-directed funding model, whereby each customer has direct access to the incentive budget they pay in rates. Under this model, customers know exactly how much funding they have available each program year and they can appropriately plan their expenditures to reduce energy usage in their facility. With the support of Enbridge Gas Energy Solutions Advisors, customers are required to submit an Energy Efficiency Plan ("EEP"), which serves as a roadmap, allowing customers and Enbridge Gas to actively work together, driving energy efficiency projects. If a customer elects not to participate, the funds are dispersed via an aggregated pool approach. The aggregated pool is then used to fund additional energy efficiency projects for all Rate T2 and Rate 100 customers, on a first-come first-serve basis. Offering details are provided in Appendix D.

Table 6.9 2019 Large Volume Direct Access Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Net Cumulative Natural Gas Savings (m ³) | 72,370,192 |

Offering Changes in 2019:

In 2019, a pilot initiative was developed that included detailed steam audit and steam/energy training. Incentives were provided to cover up to 100% of the project cost, which is more lucrative than the offering's standard incentive structure.

Lessons Learned:

Due to customer capital budget cycles, it took longer to deploy the pilot initiative than expected, with most of the projects planned for 2019 rescheduled for 2020. As a result, the natural gas savings in 2019 were lower than expected.

Anticipated Offering Changes for 2020:

With strong customer interest in the pilot initiative, the pilot initiative will continue in 2020.

6.5 MARKET TRANSFORMATION PROGRAM

Enbridge Gas' Market Transformation Program for the Union rate zones consists of the following offerings:

- Optimum Home Offering (Section 6.5.1)
- Commercial Savings by Design Offering (Section 6.5.2)



6.5.1 Optimum Home Offering

The Optimum Home Offering helps residential builders improve energy performance in new construction projects, by providing a variety of support activities from the early design phase through to construction. The offering is designed to transform builders, over a multi-year period, to build more homes that exceed the 2017 Ontario Building Code (“OBC 2017”) by at least 15%. Offering details are provided in Appendix D.

Table 6.10 2019 Optimum Home Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|--|-------------|
| Participating Builders (Regional Top 10) | 4 |
| Prototype Homes Built | 95% |
| Percentage of Homes Built (>15% above OBC 2017) by Participating Builder | 28.6% |

Offering Changes in 2019:

In an effort to increase homebuyer demand for homes built above OBC 2017, Enbridge Gas launched a digital marketing campaign in 2019 to drive traffic to the homebuyer website, which was updated in 2018 to include homebuyer testimonial videos.

Enbridge Gas also launched a digital marketing campaign in 2019 to drive traffic to the builder website, which assist the builder with development of a business case for homes built above OBC 2017.

In 2019, Enbridge Gas launched a pilot initiative to address the needs of small to mid-size builders (6-30 builds annually). Ten small to mid-size builder participants were recruited in 2019, and Enbridge Gas will measure the success of the pilot based on the same metrics as the large builder offering. The findings from the pilot will help inform future DSM programming.

Lessons Learned:

Despite general increased awareness of energy efficiency among homebuyers, a significant effort is still required to convince homebuyers that buying a home built above OBC 2017 is a good investment. In addition, it can be difficult to convince builders to focus on the long-term benefits of energy efficiency due to the evolving state of the housing market.

Enbridge Gas also found that there is a lack of qualified Energy Star evaluators in some regions within the Union rate zones, impacting Enbridge Gas’ ability to influence those markets.

Anticipated Offering Changes for 2020:

Further digital market campaigns are being planned for 2020 to drive traffic to Enbridge Gas’ homebuyer and builder websites. In addition, the pilot, designed for small to mid-sized builders, will continue through 2020.



6.5.2 Commercial Savings by Design Offering

The Commercial Savings by Design (“CSBD”) Offering encourages commercial developers and builders to design and build new developments to a level above the current Ontario Building Code (“OBC”). The offering provides participants an integrated design process (“IDP”) and financial incentives. Through detailed analysis and modelling of various building elements, the goal is for participants to build at least 15% or above the 2017 OBC Part 3 requirements. Offering details are provided in Appendix D.

Table 6.11 2019 Commercial Savings by Design Offering Results (Union Rate Zones)

| METRIC | ACHIEVEMENT |
|---|-------------|
| New Developments Enrolled by Participating Builders | 22 |

Offering Changes in 2019:

In 2019, bonus offers were provided to increase participation and to encourage participants to progress through the offering, including:

- A \$3,000 bonus incentive for participants that completed the IDP workshop prior to November 30, 2019
- A \$1,000 bonus incentive for architects who identified eligible projects within the Union rate zones that are in the design phase and could benefit from the IDP session

Enbridge Gas also enhanced its marketing efforts to increase awareness and participation in offering, by developing case studies that showcase past participation successes.

Lessons Learned:

Enbridge Gas has had success in not only improving building practices of participating builders and developers, but also in increasing the expertise and involvement of the subject matter experts in delivering the IDP workshops. This has led the workshops to become a platform to set modelling guidelines and protocols within the commercial new construction sector in Ontario.

Enbridge Gas will continue to focus on enhancing the key relationships with the architect community.

Anticipated Offering Changes for 2020:

Enbridge Gas does not anticipate major changes to the offering in 2020. Enbridge Gas will continue to expand the reach of the offering by identifying new commercial and multi-residential projects, by working more closely with the municipalities and using internal data.

6.6 PERFORMANCE-BASED PROGRAM

Enbridge Gas’ Performance-Based Program for the Union rate zones consists of the following offerings:

- RunSmart Offering (Section 6.6.1)



- Strategic Energy Management Offering (Section 6.6.2)

6.6.1 RunSmart Offering

The RunSmart Offering is designed to motivate commercial customers to optimize the operation of their buildings. Through analysis of detailed energy data, building operators and managers are empowered to make strategic data-driven decisions regarding energy use in their facility.

Technical support is provided to participants in order to identify opportunities to more efficiently use heating equipment and systems in place. Customers complete recommended actions, then monitor and maintain these actions over a 12-month time period. Offering details including financial incentives available to participants are provided in Appendix D.

Table 6.12 2019 RunSmart Offering Results (Union Rate Zones)

| METRICS | ACHIEVEMENT |
|--------------|-------------|
| Participants | 58 |
| Savings (%) | 0.4% |

Offering Changes in 2019:

There were no changes to the offering in 2019.

Lessons Learned:

Enbridge Gas has found that ensuring the decision maker and maintenance personnel are present for the initial site visit has proven to be beneficial to the success of the offering. Although it is ultimately the customer's decision who will engage with Enbridge Gas through the offering process, Enbridge Gas has focused efforts towards ensuring the appropriate contact is available, in order to improve results.

Anticipated Offering Changes for 2020:

Enbridge Gas is reviewing the design of the RunSmart Offering in an effort to improve cost-effectiveness results. Enbridge Gas will explore a more targeted approach, using data analysis to identify potential participants who have greater savings potential and would benefit most from the offering.



6.6.2 Strategic Energy Management Offering

Through the Strategic Energy Management (“SEM”) Offering, Enbridge Gas influences industrial customers to adopt and nurture a culture of conservation and continuous energy improvement. Enbridge Gas works with participants in the offer by examining their unique energy usage, creating an energy model, and guiding customers to undertake recommended actions suitable to their operation.

Incentives are structured to support initial start-up costs in baseline and energy plan development and then provide incentives for measured energy efficiency improvements over a 5-year participation period. Appendix D outlines the offering details.

Table 6.13 2019 Strategic Energy Management Offering Results (Union Rate Zones)

| METRICS | ACHIEVEMENT |
|-------------|-------------|
| Savings (%) | 0% |

Offering Changes in 2019:

No offering changes were made in 2019. Consistent with the 2015-2020 DSM Plan, 2018 was the last year new participants are enrolled in the offering.

Lessons Learned:

None of the 3 customers that were eligible for incentives in 2019 received incentives, due internal priorities on the customer's side. Enbridge Gas will continue to work with the participants in 2020 to achieve natural gas savings.

Enbridge Gas continues to try different approaches to influence customers to implement the suggested improvements provided by the offering. Even with enhanced business cases to justify expenditures, customers face other barriers that prevent implementation, such as a focus on the customer's long-term viability.

Anticipated Offering Changes for 2020:

Consistent with the 2015-2020 DSM Plan, 2018 was the last year new participants are enrolled in the offering. As such Enbridge Gas will continue to work with the participants already enrolled in the offering.



7. Evaluation

As per the DSM Guidelines, “There are two broad categories of evaluation activity: impact evaluation and process evaluation. Impact evaluation focuses on the specific impacts of the program – for example, savings and costs. Process evaluation focuses on the effectiveness of the program design – for example, the delivery channel.”

As discussed in Section 2.3, impact evaluation is coordinated and executed by the OEB. Since program design and implementation are program administrator activities, process evaluation is coordinated and executed by Enbridge Gas.

7.1 IMPACT EVALUATION AND AUDIT

As discussed in Section 2.3, the OEB coordinates the impact evaluation and annual audit process, including selecting a third-party Evaluation Contractor (“EC”). The intention of the audit is for the EC provide an opinion on whether the claimed DSM shareholder incentive amount, amount to be added to the Lost Revenue Adjustment Mechanism Variance Account, and Demand Side Management Variance Account have been correctly calculated using reasonable assumptions. The EAC, as described in Section 2.3, provides input and advice to the EC to support the achievement of the audit objectives.

The audit for the 2019 program year was initiated by the OEB and the EC in March 2020 and completed in December 2020. Details on the impact evaluation activities and other audit activities are outlined in the EC’s 2019 audit report available on the OEB’s DSM EM&V webpage.¹¹

7.2 PROCESS EVALUATION

Enbridge Gas continuously evaluates its programs and offerings to assess the effectiveness of its program design. Most of the time, these assessments consist of many smaller, topic-focused, informal process evaluations conducted by Enbridge Gas’ program design staff. The most common examples of these process evaluations include assessing incentive levels, customer communication tactics, and implementation logistics and systems.

In some instances, broad-based, formal process evaluations can be undertaken with support from external consultants, focusing on entire offerings or initiatives, rather than an individual topic.

Throughout 2018 and 2019, Enbridge Gas conducted a broad process evaluation on the Union rate zones’ Home Efficiency Rebate (“HER”) Offering, formerly named the Home Reno Rebate (“HRR”) Offering. The report was finalized by Econoler on October 10, 2019 and can be found in Appendix F. The main objectives of the process evaluation included:

- Identifying opportunities to improve the efficacy of program offerings and implementation efforts; and,
- Determining whether the data entry and quality assurance processes are sufficiently robust, efficiencies can be gained, or enhancements need to be made.

Some recommendations from the process evaluation, and the steps Enbridge Gas has undertaken or anticipates undertaking, include:

- Recommendation: Define additional performance indicators to correspond with the adjusted logic model and track all performance indicators linked to program objectives.

¹¹ <https://www.oeb.ca/industry/policy-initiatives-and-consultations/natural-gas-demand-side-management-dsm-evaluation>



- Enbridge Gas has added more offering performance indicators. One example, in an attempt to influence external energy advisors to recommend more measures to potential participants, Enbridge Gas has begun tracking and assessing Service Organizations based on average number of measures installed.
- Recommendation: Consider ways to increase uptake in insulation upgrades, such as increasing the rebate amount or better communicating the benefits of installing insulation.
 - Anticipated for the 2020 program year, Enbridge Gas will add additional participation requirements that any job with a furnace requires two additional measures. Furthermore, in Q3 2019 Enbridge Gas launched the limited time offer packages to encourage homeowners to implement attic insulation.



8. Results and Spend (EGD Rate Zone)

8.1 SCORECARD RESULTS AND SHAREHOLDER INCENTIVE

Enbridge Gas is eligible to earn a shareholder incentive of up to \$10.45M for the EGD rate zone, for DSM results measured against the EGD rate zone's Resource Acquisition, Low-Income and Market Transformation & Energy Management scorecards. The DSM shareholder incentive is established by the OEB to "effectively motivate the gas utilities to both actively and efficiently pursue DSM savings and to recognize exemplary performance."¹² The maximum incentive available is allocated to each scorecard based on the allocation of budget to each scorecard. For more information on the DSM shareholder incentive, refer to Section 5.0 of the DSM Framework and Section 5.0 of the DSM Guidelines.

In 2019, Enbridge Gas earned \$6.7M in DSM incentive for the EGD rate zone, as outlined in Table 8.0 below.

Table 8.0 2019 Maximum Shareholder Incentive & Achievement by Scorecard (EGD Rate Zone)

| SCORECARD | MAXIMUM DSM INCENTIVE | DSM SHAREHOLDER INCENTIVE ACHIEVED |
|---|-----------------------|------------------------------------|
| Resource Acquisition | \$7,013,471 | \$4,827,040 |
| Low-Income | \$2,264,127 | \$1,159,746 |
| Market Transformation & Energy Management | \$1,172,401 | \$730,586 |
| Total | \$10,450,000 | \$6,717,372 |

Detailed scorecard results for the EGD rate zone are provided in Table 8.1 to Table 8.3 below.

Table 8.1 2019 Resource Acquisition Scorecard Results (EGD Rate Zone)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|---|----------------------|-------------|-------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Large Volume Customers – Cumulative Natural Gas Savings (m ³) | 326,798,345 | 435,731,127 | 653,596,690 | 40% | 502,499,656 | 46% |
| Small Volume Customers – Cumulative Natural Gas Savings (m ³) | 223,954,472 | 298,605,963 | 447,908,944 | 40% | 369,469,772 | 49% |
| Deep Residential Savings Participants | 8,705 | 11,606 | 17,409 | 20% | 16,480 | 28% |
| Total Scorecard Target Achieved | | | | | | 124% |
| Scorecard Company Incentive Achieved | | | | | | \$4,827,040 |

¹² Report of the Board: DSM Framework for Natural Gas Distributors (2015-2020), EB-2014-0134, p. 20.

**Table 8.2 2019 Low-Income Scorecard Results (EGD Rate Zone)**

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|---|----------------------|-------------|-------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Single Family (Part 9) – Cumulative Natural Gas Savings (m ³) | 15,454,405 | 20,605,874 | 30,908,811 | 45% | 27,618,723 | 60% |
| Multi-Residential (Part 3) – Cumulative Natural Gas Savings (m ³) | 76,908,576 | 102,544,768 | 153,817,153 | 45% | 88,957,000 | 39% |
| New Construction Participants | 8 | 11 | 17 | 10% | 11 | 10% |
| Total Scorecard Target Achieved | | | | | | 109% |
| Scorecard Company Incentive Achieved | | | | | | \$1,159,746 |

Table 8.3 2019 Market Transformation & Energy Management Scorecard Results (EGD Rate Zone)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|---|----------------------|--------|------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Residential Savings by Design – Builders | 23 | 30 | 45 | 10% | 39 | 13% |
| Residential Savings by Design – Homes Built | 1,902 | 2,536 | 3,804 | 15% | 2,989 | 18% |
| Commercial Savings by Design – New Developments | 23 | 30 | 45 | 25% | 35 | 29% |
| School Energy Competition – Schools | 24 | 32 | 48 | 10% | 32 | 10% |
| Run it Right – Participants | 27 | 36 | 54 | 20% | 84 | 40% |
| Comprehensive Energy Management – Participants | 12 | 16 | 24 | 20% | 7 | 9% |
| Total Scorecard Target Achieved | | | | | | 119% |
| Scorecard Company Incentive Achieved | | | | | | \$730,586 |

8.2 LOST REVENUE ADJUSTMENT MECHANISM

The Lost Revenue Adjustment Mechanism (“LRAM”) allows the Enbridge Gas to recover the lost distribution revenue associated with DSM activity in the EGD rate zones. For more information on the LRAM, refer to Section 11.3 of the DSM Guidelines.

In 2019, lost distribution revenues associated with DSM activity for the EGD rate zone was \$0.031M, as outlined in Table 8.4 below.



Table 8.4 2019 LRAM Statement (EGD Rate Zone)

| RATE CLASS | LRAM VOLUMES (M ³) | DISTRIBUTION MARGIN (\$/M ³) | REVENUE IMPACT |
|--------------|--------------------------------|--|-----------------|
| | (A) | (B) | (A) X (B) |
| Rate 110 | 1,841,371 | \$0.5944 | \$10,945 |
| Rate 115 | 4,303,547 | \$0.2071 | \$8,912 |
| Rate 135 | 618,172 | \$1.7467 | \$10,798 |
| Rate 145 | - | \$1.2285 | - |
| Rate 170 | 206,362 | \$0.1524 | \$315 |
| TOTAL | 6,969,451 | | \$30,969 |

8.3 COST-EFFECTIVENESS RESULTS

As described in Section 2.4, cost-effectiveness screening for the 2015-2020 DSM Framework uses the “TRC-Plus” test. A secondary reference tool is the Program Administrator Cost (“PAC”) test. The cost-effectiveness tests are performed at the program and portfolio level.

Table 8.5 and Table 8.6 provide the program and portfolio TRC-Plus and PAC results, respectively, for the EGD rate zone.

Table 8.5 2019 TRC-Plus Summary (EGD Rate Zone)

| PROGRAM | NPV TRC-PLUS BENEFITS | TRC-PLUS PROGRAM COSTS | INCREMENTAL COSTS | TOTAL TRC COSTS | NET TRC-PLUS | TRC-PLUS RATIO |
|------------------------------|-----------------------|------------------------|---------------------|---------------------|----------------------|----------------|
| Resource Acquisition Program | \$234,570,105 | \$8,532,950 | \$69,327,183 | \$77,860,133 | \$156,709,973 | 3.01 |
| Low-Income Program | \$30,571,280 | \$4,844,732 | \$9,034,779 | \$13,879,510 | \$16,691,769 | 2.20 |
| Total DSM Portfolio | \$265,141,385 | \$13,377,682 | \$78,361,961 | \$91,739,643 | \$173,401,742 | 2.89 |

Table 8.6 2019 PAC Summary (EGD Rate Zone)

| PROGRAM | NPV PAC BENEFITS | TOTAL PAC COSTS | NET PAC | PAC RATIO |
|------------------------------|----------------------|---------------------|----------------------|-------------|
| Resource Acquisition Program | \$188,940,978 | \$48,906,152 | \$140,034,826 | 3.86 |
| Low-Income Program | \$25,713,015 | \$11,968,215 | \$13,744,800 | 2.15 |
| Total DSM Portfolio | \$214,653,993 | \$60,874,367 | \$153,779,626 | 3.53 |



8.4 BUDGETS AND SPENDING

Total 2019 DSM spend for the EGD rate zone was \$72.8M, compared to an OEB-approved budget of \$66.4M. See Table 8.7 for more details. As per the OEB's Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020), Enbridge Gas was eligible to overspend by up to 15% of the total OEB-approved budget. The ability to overspend "is meant to allow the natural gas utilities to aggressively pursue programs which prove to be very successful".¹³ For more details refer to Section 11.2 of the DSM Guidelines.

DSM spending for the EGD rate zone is categorized as:

- Incentive costs, promotion costs, evaluation costs, and overhead costs, related to the design and delivery of DSM programming;
- Collaboration and Innovation (Section 8.4.1); and,
- DSM IT System (Section 8.4.2).

Furthermore, 2019 spending also included the 2019 Conservation Achievable Potential Study¹⁴.

Table 8.7 2019 Budget/Spend/Variance (EGD Rate Zone)

| ITEM | OEB-APPROVED BUDGET | ACTUAL SPEND | VARIANCE |
|--|---------------------|---------------------|--------------------|
| Resource Acquisition Program Costs | | | |
| Home Efficiency Rebate Offering - Incentives | \$18,360,000 | \$27,755,661 | \$11,060,859 |
| Home Efficiency Rebate Offering - Promotion | | \$1,665,198 | |
| Residential Adaptive Thermostat Offering - Incentives | \$2,218,500 | \$1,079,000 | (\$860,891) |
| Residential Adaptive Thermostat Offering - Promotion | | \$278,609 | |
| Commercial & Industrial Prescriptive (Fixed) Incentive Offering - Incentives | \$2,277,564 | \$1,060,280 | (\$895,959) |
| Commercial & Industrial Prescriptive (Fixed) Incentive Offering - Promotion | | \$321,325 | |
| Commercial & Industrial Direct Install Offering - Incentives | \$4,853,510 | \$3,866,652 | (\$966,314) |
| Commercial & Industrial Direct Install Offering - Promotion | | \$20,543 | |
| Custom Commercial Offering - Incentives | \$7,508,793 | \$3,662,092 | (\$190,580) |
| Custom Commercial Offering - Promotion | | \$708,246 | |
| Custom Industrial Offering - Incentives | | \$2,732,226 | |
| Custom Industrial Offering - Promotion | | \$215,648 | |
| Energy Leaders Offering - Incentives | \$0 | \$0 | \$4,600 |
| Energy Leaders Offering - Promotion | | \$4,600 | |
| Run It Right Offering (RA) - Incentives | \$1,618,946 | \$17,000 | (\$1,401,221) |
| Run It Right Offering (RA) - Promotion | | \$200,725 | |
| Comprehensive Energy Management Offering (RA) - Incentives | \$96,900 | \$0 | (\$96,900) |
| Comprehensive Energy Management Offering (RA) - Promotion | | \$0 | |
| Resource Acquisition Program - Overheads | \$5,122,057 | \$4,794,602 | (\$327,455) |
| Resource Acquisition Program Total | \$42,056,270 | \$48,382,409 | \$6,326,139 |

¹³ DSM Guidelines, pp. 38

¹⁴ The 2019 Conservation Achievable Potential Study was fully designed and executed by the OEB and the IESO (<http://www.ieso.ca/2019-conservation-achievable-potential-study>). The costs of the natural gas components of the study were passed on to the EGD rate zone and Union rate zones.



| ITEM | OEB-APPROVED BUDGET | ACTUAL SPEND | VARIANCE |
|--|---------------------|---------------------|--------------------|
| Low-Income Program Costs | | | |
| Home Winterproofing Offering - Incentives | \$6,605,744 | \$4,222,337 | \$536,152 |
| Home Winterproofing Offering - Promotion | | \$2,919,559 | |
| Multi-Residential Affordable Housing Offering - Incentives | \$3,889,562 | \$2,901,146 | (\$611,063) |
| Multi-Residential Affordable Housing Offering - Promotion | | \$377,353 | |
| Savings by Design Affordable Housing Offering - Incentives | \$1,428,000 | \$1,119,497 | \$294,304 |
| Savings by Design Affordable Housing Offering - Promotion | | \$602,806 | |
| <i>Low-Income Program - Overheads</i> | \$1,653,531 | \$1,547,820 | (\$105,711) |
| Low-Income Program Total | \$13,576,837 | \$13,690,519 | \$113,682 |
| Market Transformation & Energy Management Program Costs | | | |
| Savings by Design Residential Offering - Incentives | \$3,320,443 | \$3,535,740 | \$857,961 |
| Savings by Design Residential Offering - Promotion | | \$642,664 | |
| Savings by Design Commercial Offering - Incentives | \$1,098,300 | \$1,016,966 | \$394,092 |
| Savings by Design Commercial Offering - Promotion | | \$475,426 | |
| School Energy Competition Offering - Incentives | \$510,000 | \$16,500 | (\$254,587) |
| School Energy Competition Offering - Promotion | | \$238,913 | |
| Run It Right Offering (MT) - Incentives | \$322,236 | \$200,289 | \$206,107 |
| Run It Right Offering (MT) - Promotion | | \$328,054 | |
| Comprehensive Energy Management Offering (MT) - Incentives | \$923,100 | \$5,356 | (\$699,282) |
| Comprehensive Energy Management Offering (MT) - Promotion | | \$218,462 | |
| <i>Market Transformation & Energy Management Program - Overheads</i> | \$856,225 | \$801,486 | (\$54,739) |
| Market Transformation & Energy Management Program Total | \$7,030,304 | \$7,479,856 | \$449,552 |
| TOTAL Program Costs | \$62,663,411 | \$69,552,784 | \$6,889,373 |
| Portfolio Costs | | | |
| Evaluation | \$1,736,746 | \$1,524,765 | (\$211,981) |
| Portfolio Total | \$1,736,746 | \$1,524,765 | (\$211,981) |
| TOTAL Program and Portfolio Costs | \$64,400,157 | \$71,077,548 | \$6,677,391 |
| Other Costs | | | |
| DSM IT | \$1,000,000 | \$342,245 | (\$657,755) |
| Collaboration and Innovation | \$1,021,616 | \$1,145,846 | \$124,230 |
| Achievable Potential Study | \$0 | \$277,800 | \$277,800 |
| Other Costs Total | \$2,021,616 | \$1,765,892 | (\$255,724) |
| TOTAL DSM Costs | \$66,421,773 | \$72,843,440 | \$6,421,667 |

Included in the spend amounts above are customer incentives deferred to future years, for offerings where incentives are paid when future milestones/activities are reached. The deferred amounts will be used when the customer incentive commitment is due. For more information on customer incentive deferrals, please refer to Section 5.3.2 of the OEB's Mid-Term Report.

Specifically, the amounts are:

- Savings by Design Affordable Housing Offering: \$811,300
- Savings by Design Residential Offering: \$2,223,000
- Savings by Design Commercial Offering: \$150,000



8.4.1 Collaboration and Innovation

The collaboration and innovation budget is used to explore and implement collaborative and innovative partnerships, technologies, and market approaches. The budget provides the flexibility needed to commit to pilot funding opportunities from electric LDCs and other innovative initiatives and research.

Given the importance and potential reach of these partnerships, there is a need for collaborative programs to be thoroughly tested and strengthened before being adopted for province-wide rollout. These efforts are expected to yield results and build strong collaborative relationships over time.

Actual collaboration and innovation spend was approximately \$1.1M in 2019, and included the following major items:

- **AeroBarrier**
 - Enbridge Gas and AeroBarrier are partnering to demonstrate, measure, and analyze the energy savings that can be driven by the AeroBarrier air sealing technology in the Ontario new home residential market. The goal will be to test feasibility and measure reduction in air leakage through the application of AeroBarrier across a proposed 150-200 homes of varied size & type (stacked, detached, towns). In conjunction with Building Knowledge Inc. and through blower door testing and the use of energy modelling software, Enbridge Gas will generate a data set that measures the energy savings that the technology can drive in the new home building industry.
- **Affordability Fund Trust Pilot**
 - This pilot is designed to offer home insulation and air sealing to 20 moderate income customers in the Peterborough area. The pilot would target gas-heated homes participating in the Affordability Fund Trust's ("AFT") existing electricity conservation program, which AFT is delivering to customers without access to modern energy services, in collaboration with the local electricity utilities. Learnings from the pilot would be applied to a potential future collaborative gas/electric program targeting moderate-income customers who do not qualify to participate in Enbridge Gas' Low-Income Home Winterproofing Offering and the IESO's Home Assistance Program, but are unlikely to participate in mass market residential home retrofit programs due to lack of funds available to pay for retrofits out-of-pocket.
- **Centre for Energy Advancement through Technological Innovation ("CEATI") Cannabis Research**
 - To conduct a study to assess baseline consumption of electricity and natural gas for cannabis warehouse and greenhouse operations, and document best practices, available technologies, and implementation costs for saving energy in both warehouse and greenhouse facilities.
- **Gas Technology Institute ("GTI") Utilization Technology Development ("UTD") Membership**
 - UTD and its 20+ members serve over 47 million natural gas customers in across the Americas and Europe. These companies work together on technology developments that meet their end-use customer energy efficiency and environmental needs.
- **Independent Electricity System Operator ("IESO") Training**
 - To provide training incentives towards successful completion of the Building Operators Certification ("BOC") Program, Dollars to \$ense and Selling Energy Efficiency ("SEE") training programs in its service area. Through a co-funding arrangement, Enbridge Gas and the IESO view this initiative as helping to meet capacity building, trade allies education,



and training DSM and CDM objectives. With Enbridge Gas' participation, holistic energy management approach is promoted with information on IESO's saveONenergy and Enbridge Gas' energy efficiency programs and services.

- **iFLOW Combination Heating System Assessment Project**

- The iFLOW Combination Heating System is an innovative, high-efficiency smart air handler/heat exchanger with intelligent boiler demand control and pump modulation control. The project would see a in-field demonstration and performance assessment of five iFLOW units in model homes and new construction developments. Results would be compared with base case natural gas consumption of the model homes to quantify gas savings achieved by the iFlow Combination Heating System in new construction residential homes. The second phase of this project is to test 5 iFlow Combination Heating Systems in residential retrofit homes to quantify gas savings of the iFlow system in retrofit houses. Results could be used to support a new DSM programming.

- **Power House Hybrid ("PHH") Net Zero Energy Emissions ("NZEE")**

- Alectra Utilities, City of Markham and Enbridge Gas have formed a partnership to validate how comprehensive, deep energy efficiency retrofits can be optimized with HVAC solutions that incorporate electrical and natural gas solutions for hybrid (dual fuel) heating. The project will also validate how micro-CHP solutions are integrated with solar photovoltaic and battery storage.

- **Sustainable Buildings Canada ("SBC") Combined Heat and Power ("CHP") Study**

- The purpose of this project was to model a combined-heat and power system for a Part 3 Multi-Unit Residential Building (MURB) that was designed to meet the energy efficiency requirements of Supplementary Standard SB-10.

- **Stone Mountain Technologies ("SMTI") Rinnai Gas Heat Pump Water Heaters ("GHPWH")**

- The purpose of the project is to join a multi-million dollar North American field demonstration project to support Rinnai in their business decision to start manufacturing GHPWH at commercial production levels and to address a diverse set of policy, technology, market and efficiency program considerations driving stakeholders focus on gas heat pumps.

8.4.2 DSM IT System

Enbridge Gas completed the work on implementation of the EGD rate zone IT system in Q1 of 2019 and rolled out the solution to users. The Company had completed the bulk of the design and execution activities in 2018, with the completion of these occurring during Q1 of 2019.

The main elements for the Delivery Phase included completion of User Testing, User Training and Change Management. More specifically, the Delivery Phase included:

- System Configuration and Customization;
- Systems Integration Testing and Acceptance;
- Data mapping;
- Data migration and integration;
- User Acceptance Testing;
- User Training; and,



- Change Management and Rollout.

As per the OEB Decision, Enbridge Gas was budgeted an annual \$1 million chargeback for the DSM IT system. In practice, Enbridge Gas spent \$0.1M in 2016, \$3.1M in 2017, and \$2.5M in 2018. In 2019, the Company will incur an additional cost of \$0.3M. As spending for a project of this nature is not linear, it is understood that some years will have a significant underspend and some years will have a significant overspend. These imbalances will flow through the DSMVA as a credit or debit to ratepayers.

During 2019, Enbridge Gas determined that the costs related to the IT system were not capital in nature. Therefore, all costs incurred have been recorded as O&M costs in the respective year they have been incurred.

Within the OEB's decision on EGI's 2017/2018 DSM Deferral and Variance Account Disposition Application (EB-2020-0067), the OEB found that EGI should bear 50% of the cost of the overrun of \$1.087 M (i.e. \$0.544M) associated with the EGD rate zone's DSM Tracking and Reporting System. As per the decision, this amount was removed entirely from the 2017 DSMVA.



9. Results and Spend (Union Rate Zones)

9.1 SCORECARD RESULTS AND SHAREHOLDER INCENTIVE

Enbridge Gas is eligible to earn a shareholder incentive of up to \$10.45M for the Union rate zones, for DSM results measured against the Union rate zones' Resource Acquisition, Low-Income, Performance-Based, Large Volume, and Market Transformation Scorecards. The DSM shareholder incentive is established by the OEB to "effectively motivate the gas utilities to both actively and efficiently pursue DSM savings and to recognize exemplary performance."¹⁵ The maximum incentive available is allocated to each scorecard based on the allocation of budget to each scorecard. For more information on the DSM shareholder incentive, refer to Section 5.0 of the DSM Framework and Section 5.0 of the DSM Guidelines.

In 2019, Enbridge Gas earned \$6.0M in DSM incentive for the Union rate zones, as outlined in Table 9.0 below.

Table 9.0 2019 Maximum Shareholder Incentive & Achievement by Scorecard (Union Rate Zones)

| SCORECARD | MAXIMUM DSM INCENTIVE | DSM SHAREHOLDER INCENTIVE ACHIEVED |
|-----------------------|-----------------------|------------------------------------|
| Resource Acquisition | \$6,682,671 | \$4,344,389 |
| Low-Income | \$2,499,922 | \$1,253,615 |
| Large Volume | \$706,956 | \$0 |
| Market Transformation | \$413,228 | \$352,359 |
| Performance-Based | \$147,223 | \$0 |
| Total | \$10,450,000 | \$5,950,363 |

Detailed scorecard results for the Union rate zones are provided in Table 9.1 to Table 9.5 below.

Table 9.1 2019 Resource Acquisition Scorecard Results (Union Rate Zones)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|--|----------------------|-------------|---------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Cumulative Natural Gas Savings (m ³) | 598,939,485 | 798,585,979 | 1,197,878,969 | 75% | 935,593,809 | 88% |
| Home Reno Rebate Participants (Homes) | 6,231 | 8,308 | 12,462 | 25% | 10,958 | 33% |
| Total Scorecard Target Achieved | | | | | | 121% |
| Scorecard Company Incentive Achieved | | | | | | \$4,344,389 |

¹⁵ Report of the Board: DSM Framework for Natural Gas Distributors (2015-2020), EB-2014-0134, p. 20.



Table 9.2 2019 Low-Income Scorecard Results (Union Rate Zones)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|---|----------------------|------------|------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Single Family Cumulative Natural Gas Savings (m ³) | 32,841,561 | 43,788,748 | 65,683,123 | 60% | 51,732,240 | 71% |
| Social and Assisted Multi-Family Cumulative Natural Gas Savings (m ³) | 17,349,279 | 23,132,372 | 34,698,558 | 35% | 22,803,825 | 35% |
| Market Rate Multi-Family Cumulative Natural Gas Savings (m ³) | 5,835,560 | 7,780,746 | 11,671,119 | 5% | 4,774,193 | 3% |
| Total Scorecard Target Achieved | | | | | | 108% |
| Scorecard Company Incentive Achieved | | | | | | \$1,253,615 |

Table 9.3 2019 Large Volume Scorecard Results (Union Rate Zones)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|--|----------------------|-------------|-------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Cumulative Natural Gas Savings (m ³) | 103,250,094 | 137,666,792 | 206,500,188 | 100% | 72,370,192 | 53% |
| Total Scorecard Target Achieved | | | | | | 53% |
| Scorecard Company Incentive Achieved | | | | | | \$0 |

Table 9.4 2019 Market Transformation Scorecard Results (Union Rate Zones)

| METRICS | METRIC TARGET LEVELS | | | WEIGHT | ACHIEVEMENT | WEIGHTED % OF SCORECARD ACHIEVED |
|---|----------------------|--------|------------|--------|-------------|----------------------------------|
| | LOWER BAND | TARGET | UPPER BAND | | | |
| Optimum Home: Participating Builders (Regional Top 10) | 3 | 4 | 6 | 10% | 4 | 10% |
| Optimum Home: Prototype Homes Built | 68% | 90% | 100% | 10% | 95% | 13% |
| Optimum Home: Percentage of Homes Built (>15% above OBC 2017) by Participating Builders | 3.25% | 4.34% | 6.50% | 30% | 28.6% | 60% |
| Commercial Savings by Design: New Developments Enrolled by Participating Builders | 15 | 20 | 30 | 50% | 22 | 55% |
| Total Scorecard Target Achieved | | | | | | 138% |
| Scorecard Company Incentive Achieved | | | | | | \$352,359 |

**Table 9.5 2019 Performance-Based Scorecard Results (Union Rate Zones)**

| METRICS | METRIC TARGET LEVELS | | | WEIGHTED % OF SCORECARD ACHIEVED | | |
|---|----------------------|--------|------------|----------------------------------|-------------|------------|
| | LOWER BAND | TARGET | UPPER BAND | WEIGHT | ACHIEVEMENT | |
| RunSmart Participants | 42 | 56 | 84 | 10% | 58 | 10% |
| RunSmart Savings (%) | 0.53% | 0.70% | 1.05% | 40% | 0.35% | 20% |
| Strategic Energy Management (SEM) Savings (%) | 4% | 5% | 7% | 50% | 0% | 0% |
| Total Scorecard Target Achieved | | | | | | 30% |
| Scorecard Company Incentive Achieved | | | | | | \$0 |

9.2 LOST REVENUE ADJUSTMENT MECHANISM

The Lost Revenue Adjustment Mechanism (“LRAM”) allows the Enbridge Gas to recover the lost distribution revenue associated with DSM activity in the Union rate zones. For more information on the LRAM, refer to Section 11.3 of the DSM Guidelines.

In 2019, lost distribution revenues associated with DSM activity for the Union rate zones was \$0.186M, as outlined in Table 9.6 below.

Table 9.6 2019 LRAM Statement (Union Rate Zones)

| | LRAM VOLUMES (10 ³ M ³) | DELIVERY RATES (\$/10 ³ M ³) | REVENUE IMPACT |
|------------------------|--|---|---------------------|
| | (A) | (B) | (A) X (B) |
| South - M4 Industrial | 9,759 | \$14.69 | \$143,378.56 |
| South - M5 Industrial | 294 | \$26.10 | \$7,665.61 |
| South - M7 Industrial | 7,240 | \$2.99 | \$21,646.15 |
| South - T1 Industrial | 497 | \$1.03 | \$512.25 |
| South - T2 Industrial | 3,057 | \$0.20 | \$620.58 |
| South Total | 20,847 | | \$173,823.15 |
| North - 20 Industrial | 1,653 | \$6.62 | \$10,938.60 |
| North - 100 Industrial | 677 | \$2.55 | \$1,723.71 |
| North Total | 2,330 | | \$12,662.31 |
| TOTAL | 23,177 | | \$186,485.46 |

9.3 COST-EFFECTIVENESS RESULTS

As described in Section 2.4, cost-effectiveness screening for the 2015-2020 DSM Framework uses the “TRC-Plus” test. A secondary reference tool is the Program Administrator Cost (“PAC”) test. The cost-effectiveness tests are performed at the program and portfolio level.

Table 9.7 and Table 9.8 provide the program and portfolio TRC-Plus and PAC results, respectively, for the Union rate zones.



In 2019, as was the case in 2018, the Performance-Based Program screened below the 1.0 TRC-Plus threshold. This is due to natural gas savings results for RunSmart Offering participants being significantly lower than forecasted. Enbridge Gas has, and will continue to, review the design of the offering, and is considering changes in 2020 to improve cost-effectiveness. This includes improving data analysis approaches, to identify customers who have greater potential savings opportunities and would benefit more from active participation in this offering. This is expected to improve cost-effectiveness for this offering.

Similarly, natural gas savings from the Strategic Energy Management Offering were lower than initially forecast, as some participants limited their efficiency improvements due to competing financial priorities. Given the nature of multi-year participation in the offering, Enbridge Gas is not enrolling new participants. Enbridge Gas is focused on continuing to support participants already enrolled and in the process of implementing energy management plans, with the aim of identifying efficiency opportunities that realize greater savings. This is expected to improve cost-effectiveness for this offering.

Table 9.7 2019 TRC-Plus Summary (Union Rate Zones)

| PROGRAM | NPV TRC-PLUS BENEFITS | TRC-PLUS PROGRAM COSTS | INCREMENTAL COSTS | TOTAL TRC COSTS | NET TRC-PLUS | TRC-PLUS RATIO |
|-------------------------------|-----------------------|------------------------|---------------------|----------------------|----------------------|----------------|
| Residential Program | \$45,330,575 | \$4,200,885 | \$28,005,436 | \$32,206,321 | \$13,124,254 | 1.41 |
| Commercial/Industrial Program | \$164,527,447 | \$4,493,318 | \$50,479,154 | \$54,972,472 | \$109,554,975 | 2.99 |
| Low-Income Program | \$19,870,911 | \$4,455,707 | \$8,003,183 | \$12,458,890 | \$7,412,020 | 1.59 |
| Large Volume Program | \$13,766,441 | \$404,127 | \$5,535,828 | \$5,939,955 | \$7,826,486 | 2.32 |
| Performance-Based Program | \$11,186 | \$540,798 | \$0 | \$540,798 | -\$529,611 | 0.02 |
| Total DSM Portfolio | \$243,506,560 | \$14,094,835 | \$92,023,601 | \$106,118,436 | \$137,388,124 | 2.29 |

Table 9.8 2019 PAC Summary (Union Rate Zones)

| PROGRAM | NPV PAC BENEFITS | PAC PROGRAM COSTS | NET PAC | PAC RATIO |
|-------------------------------|----------------------|---------------------|----------------------|-------------|
| Residential Program | \$32,423,671 | \$22,612,143 | \$9,811,528 | 1.43 |
| Commercial/Industrial Program | \$148,225,519 | \$17,969,715 | \$130,255,804 | 8.25 |
| Low-Income Program | \$16,060,986 | \$13,367,910 | \$2,693,076 | 1.20 |
| Large Volume Program | \$12,487,498 | \$3,088,606 | \$9,398,892 | 4.04 |
| Performance-Based Program | \$10,091 | \$579,846 | -\$569,755 | 0.02 |
| Total DSM Portfolio | \$209,207,765 | \$57,618,219 | \$151,589,546 | 3.63 |



9.4 BUDGETS AND SPENDING

Total 2019 DSM spend for the Union rate zones was \$65.6M, compared to an OEB-approved budget of \$63.3M. See Table 9.9 for more details. As per the OEB's Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020), Enbridge Gas was eligible to overspend by up to 15% of the total OEB-approved budget. The ability to overspend "is meant to allow the natural gas utilities to aggressively pursue programs which prove to be very successful".¹⁶ For more details refer to Section 11.2 of the DSM Guidelines.

DSM spending for the Union rate zones is categorized as:

- Incentive costs, promotion costs, evaluation costs, administration costs, related to the design and delivery of DSM programming (see Section 6 for details on Union rate zones DSM offerings)
- Research (See Section 9.4.1 for more details); and,
- Pilots (See Section 9.4.2 for more details);

Furthermore, spending also included the 2019 Conservation Achievable Potential Study¹⁷, the open bill project, and the future infrastructure planning study.

As noted in the 2016 DSM Deferrals proceeding (EB-2018-0300), Enbridge Gas successfully implemented its upgraded DSM tracking and reporting system for the Union rate zones in January 2018. As such, Enbridge Gas did not incur any further system development costs for the Union rate zones in 2019.

Table 9.9 2019 Budget/Spend/Variance (Union Rate Zones)

| ITEM | OEB-APPROVED BUDGET ¹⁸ | ACTUAL SPEND | VARIANCE |
|--|-----------------------------------|---------------------|--------------------|
| Residential Program Costs | | | |
| Home Efficiency Rebate Offering - Incentives | \$12,226,000 | \$18,059,348 | \$7,589,812 |
| Home Efficiency Rebate Offering - Promotion | | \$1,756,464 | |
| Residential Adaptive Thermostat Offering - Incentives | \$0 | \$351,910 | \$550,816 |
| Residential Adaptive Thermostat Offering - Promotion | | \$198,906 | |
| <i>Residential Program - Evaluation</i> | \$859,000 | \$1,690,315 | \$831,315 |
| <i>Residential Program - Administration</i> | \$822,697 | \$555,200 | (\$267,497) |
| Residential Program Total | \$13,907,697 | \$22,612,143 | \$8,704,446 |
| Commercial/Industrial Program Costs | | | |
| Commercial/Industrial Prescriptive Offering - Incentives | \$7,149,000 | \$2,696,862 | (\$3,906,246) |
| Commercial/Industrial Prescriptive Offering - Promotion | | \$545,892 | |
| Commercial/Industrial Direct Install Offering - Incentives | \$2,500,000 | \$1,993,075 | (\$488,089) |
| Commercial/Industrial Direct Install Offering - Promotion | | \$18,836 | |
| Commercial/Industrial Custom Offering - Incentives | \$7,808,000 | \$8,786,459 | \$1,057,926 |
| Commercial/Industrial Custom Offering - Promotion | | \$79,467 | |
| <i>Commercial/Industrial Program - Evaluation</i> | \$189,000 | \$0 | (\$189,000) |

¹⁶ DSM Guidelines, pp. 38

¹⁷ The 2019 Conservation Achievable Potential Study was fully designed and executed by the OEB and the IESO (<http://www.ieso.ca/2019-conservation-achievable-potential-study>). The costs of the natural gas components of the study were passed on to the Union rate zones and the EGD rate zone.

¹⁸ The total budget shown for 2019-2020 does not include amounts related to the Residential Adaptive Thermostat offering approved through the Mid-Term Review. Expenditures for this offering will be tracked in the DSMVA.



| ITEM | OEB-APPROVED BUDGET ¹⁸ | ACTUAL SPEND | VARIANCE |
|--|-----------------------------------|---------------------|----------------------|
| <i>Commercial/Industrial Program - Administration</i> | \$4,757,286 | \$3,849,124 | (\$908,162) |
| Commercial/Industrial Program Total | \$22,403,286 | \$17,969,715 | (\$4,433,571) |
| Low-Income Program Costs | | | |
| Home Weatherization Offering - Incentives | \$8,063,000 | \$6,194,597 | \$1,191,777 |
| Home Weatherization Offering - Promotion | | \$3,060,180 | |
| Multi-Residential Affordable Housing Offering - Incentives | \$3,031,000 | \$2,432,842 | (\$432,285) |
| Multi-Residential Affordable Housing Offering - Promotion | | \$165,873 | |
| Indigenous Offering - Incentives | \$456,000 | \$254,238 | (\$128,101) |
| Indigenous Offering - Promotion | | \$73,660 | |
| Furnace End-of-Life Upgrade Offering - Incentives | \$919,000 | \$30,525 | (\$882,925) |
| Furnace End-of-Life Upgrade Offering - Promotion | | \$5,550 | |
| <i>Low-Income Program - Evaluation</i> | \$244,983 | \$321,600 | \$76,617 |
| <i>Low-Income Program - Administration</i> | \$1,430,737 | \$828,843 | (\$601,894) |
| Low-Income Program Total | \$14,144,720 | \$13,367,910 | (\$776,810) |
| Large Volume Program Costs | | | |
| Large Volume Direct Access Offering - Incentives | \$3,150,000 | \$2,684,479 | (\$465,390) |
| Large Volume Direct Access Offering - Promotion | | \$131 | |
| <i>Large Volume Program - Evaluation</i> | \$63,000 | \$0 | (\$63,000) |
| <i>Large Volume Program - Administration</i> | \$787,000 | \$403,996 | (\$383,004) |
| Large Volume Program Total | \$4,000,000 | \$3,088,606 | (\$911,394) |
| Performance-Based Program Costs | | | |
| RunSmart Offering - Incentives | \$582,000 | \$27,548 | (\$119,361) |
| RunSmart Offering - Promotion | | \$126,084 | |
| Strategic Energy Management Offering - Incentives | | \$11,500 | |
| Strategic Energy Management Offering - Promotion | | \$297,507 | |
| <i>Performance-Based Program - Evaluation</i> | \$35,000 | \$0 | (\$35,000) |
| <i>Performance-Based Program - Administration</i> | \$216,000 | \$117,207 | (\$98,793) |
| Performance-Based Program Total | \$833,000 | \$579,846 | (\$253,154) |
| Market Transformation Program Costs | | | |
| Optimum Home Offering - Incentives | \$841,000 | \$558,400 | (\$23,807) |
| Optimum Home Offering - Promotion | | \$258,793 | |
| Commercial Savings by Design Offering - Incentives | \$1,000,000 | \$737,827 | (\$75,853) |
| Commercial Savings by Design Offering - Promotion | | \$186,319 | |
| <i>Market Transformation Program - Evaluation</i> | \$36,820 | \$0 | (\$36,820) |
| <i>Market Transformation Program - Administration</i> | \$460,250 | \$500,654 | \$40,404 |
| Market Transformation Program Total | \$2,338,070 | \$2,241,994 | (\$96,076) |
| TOTAL Program Costs | \$57,626,773 | \$59,860,214 | \$2,233,441 |
| Portfolio Costs | | | |
| Research | \$1,000,000 | \$770,142 | (\$229,858) |
| Evaluation | \$1,300,000 | \$919,748 | (\$380,252) |
| Administration | \$2,842,000 | \$3,541,362 | \$699,362 |
| Portfolio Total | \$5,142,000 | \$5,231,252 | \$89,252 |
| TOTAL Program and Portfolio Costs | \$62,768,773 | \$65,091,465 | \$2,322,692 |
| Other Costs | | | |
| Pilots | \$500,000 | \$311,748 | (\$188,252) |
| Open Bill Project | \$0 | \$4,968 | \$4,968 |
| Achievable Potential Study | \$0 | \$185,200 | \$185,200 |



| ITEM | OEB-APPROVED BUDGET ¹⁸ | ACTUAL SPEND | VARIANCE |
|--------------------------------------|-----------------------------------|---------------------|--------------------|
| Future Infrastructure Planning Study | \$0 | \$10,924 | \$10,924 |
| Other Costs Total | \$500,000 | \$512,840 | \$12,840 |
| TOTAL DSM Costs | \$63,268,773 | \$65,604,306 | \$2,335,533 |

Included in the spend amounts above are customer incentives deferred to future years, for offerings where incentives are paid when future milestones/activities are reached. The deferred amounts will be used when the customer incentive commitment is due. For more information on customer incentive deferrals, please refer to Section 5.3.2 of the OEB's Mid-Term Report.

Specifically, the amounts are:

- Commercial Savings by Design Offering: \$137,280

9.4.1 Research Fund

The research budget is used to investigate emerging energy efficiency technologies to provide an increased understanding of new opportunities. As an outcome of this budget, the Company is able to offer customers a modern, more comprehensive suite of measures in an ever-evolving industry.

Research projects investigate critical input assumptions for new technologies, including natural gas savings, electricity savings, water savings, equipment costs, and equipment useful life, across a variety of market segments. Market information, such as market barriers, product market share, and how supply chains operate, is also examined to assist in designing programs that are well informed. Research projects can also enable the Company to convert common custom DSM technologies into prescriptive measures.

Actual research spend was approximately \$0.8M in 2019, and included the following major items:

- **Aquanta Domestic Hot Water Tank ("DHWT") Control**
 - To evaluate the Aquanta smart water heater controller for energy, water, and GHG savings in three residential homes.
- **Cold Climate Air Source Heat Pump ("ccASHP")**
 - Support NRCan's project for 7 pilot homes in Ontario, assessing the performance of the various cold climate heat pump products.
- **Consortium for Energy Efficiency ("CEE") Emerging Technologies Collaborative Fees**
 - The goals of the Emerging Technologies Collaborative is to provide greater support to CEE member program administrators and the energy efficiency program industry in identifying and assessing new opportunities. Pursuit of these objectives will not only assist sponsors in their immediate emerging technologies work but also achieve the shared broader objectives of accelerating adoption of emerging technologies across the efficiency program industry at CEE.
- **Consortium for Energy Efficiency ("CEE") Membership Dues**
 - CEE is the US and Canadian consortium of gas and electric efficiency program administrators. The goal of the consortium is to work together to accelerate the development of energy efficient products and services for lasting public benefit.
- **Commercial Kitchen Combi-oven & Rack Oven Research**
 - Technology research to explore possibility of inclusion as a new measure.



- **Demand Control Ventilation (“DCV”) with Variable Frequency Drive (“VFD”) Rooftop Unit (“RTU”) Research**
 - Technology research to explore possibility of inclusion as a new measure.
- **Home Efficiency Rebate Participant Survey**
 - Ongoing survey to measure participant feedback with the Home Efficiency Rebate Offering. Results are used to monitor the customer experience including interactions with the service organizations.
- **BKR Energy Hybrid System with Smart Fuel Switching Controller (“SFSC”)**
 - Project for 4 pilot homes across Ontario to investigate the effectiveness of smart fuel switching control for hybrid electric heat pumps and furnace. Goal is to substantiate the energy, cost savings and GHG reductions.
- **Hybrid System with Smart Fuel Switching Controller (“SFSC”)**
 - Support NRCan’s project for 2 pilot homes in Ottawa to investigate the effectiveness of smart fuel switching control for hybrid electric heat pumps and furnace. Goal is to substantiate the energy, cost savings and GHG reductions.
- **iFLOW Phase 1, Hybrid System Hydronic Installation & Monitoring**
 - To evaluate the iFLOW hydronic system’s performance as part of a hybrid heating system, in terms of energy, cost savings and GHG reductions in two residential retrofit homes. The study will also evaluate energy saving from the smart zoning control technology of the iFlow air handling unit.
- **Indigenous Home Weatherization New Measures Test**
 - To conduct a two-phased approach to look at alternatives for next generation DSM planning for on-reserve housing stock. The first phase will encompass a thorough study of housing stock on-reserve to determine what the true needs are with respect to energy-savings and to conduct energy modelling on a whole-home basis to determine where opportunities lie.
- **McMaster Integrated Community Energy (“ICE”) Meter Install Research**
 - ICE-Harvest system integrates electricity and heating generation and storage into intensive urban infrastructure. The system can harvest the waste heat from electricity generation, chiller units and the community with excess thermal energy (grocery stores, restaurants, etc.) and utilizing it to provide heating and cooling at a higher efficiency than traditional district energy systems. The objective of the project is to assess and demonstrate the energy savings, cost savings, and GHG reductions.
- **On Demand Controls for Domestic Hot Water (“DHW”) Recirculation Systems**
 - Research to assess the energy savings associated with on demand control of DHW recirculation operations, develop engineering tools to estimate savings, compile sub-docs, and explore development of DSM offerings for the technology.
- **Stone Mountain Technologies (“SMTI”) Gas Heat Pump Furnace Research**
 - Field monitoring, demonstration, and laboratory testing of the Trane combi thermal gas heat pump.
- **Yanmar Three-Pipe System Research**
 - Demonstrate the possibility to offer a Gas Engine Driven Heat Pump system that provides natural gas heating and cooling and water heating in Ontario buildings (commercial buildings) with increased resiliency and energy efficiency.



9.4.2 Pilot Fund

The pilot budget aims to explore innovative DSM programs and market approaches. In addition to providing offers to customers, the pilots can help to better understand new program designs and delivery concepts, ultimately leading to greater natural gas savings and market penetration of programs.

Pilots involve the testing of energy efficient technologies, alternative financing mechanisms, and/or detailed customer-specific natural gas usage information that may serve as a model for future DSM program development.

Actual pilot spend was approximately \$0.3M in 2019, and included the following items:

- **Optimum Home Lite**
 - This pilot involves 3 components. The first component is the outreach. Enbridge Gas will utilize workshops to attract small to mid-size builders to learn about future building code changes, and then position building to an Energy Star level as the best way to future proof their business. The second component is the offer. As demonstrated through success in the Optimum Home Offering, Enbridge Gas will utilize building science consultants to provide 1-to-1 consultation to participating builders on how to build to Energy Star levels most efficiently for their business. The consultation will comprise of 3 consulting days, the first to assess current building practices, the second to allow the consultant to identify and draft recommendations, and the third to present recommendations. The third component is tracking results. This is through demonstrating builder learnings and commitments, by building an Energy Star certified discovery home and tracking future progress towards building to that standard.
- **Residential Air Sealing Pilot**
 - Pilot to test professional air sealing as a stand-alone offering. The idea of a stand-alone air sealing pilot is driven by recognition that professional air sealing is currently an underserved market, and recognition that a stand-alone air sealing offering for homeowners has significant market potential within the residential existing homes sector. Enbridge Gas believes that there is opportunity to drive higher and more comprehensive savings from professional well-executed air sealing efforts, compared to the more typical do-it-yourself. Additionally, there is the potential to reach a greater number of participants with air sealing as a stand-alone measure, compared the current model which bundles it with other (more costly) retrofit measures. It is expected that the stand-alone air sealing pilot will target ~200 customers for participation.
- **Waterloo Community Energy Investment Strategy**
 - Enbridge Gas is partnering with the Region of Waterloo to support their implementation of a Community Energy Investment Strategy ("CEIS"). Waterloo's CEIS is a community-based action plan to achieve significant GHG reductions, and stakeholders have the opportunity to influence it. A significant portion of the plan ties back to energy efficiency opportunities for homes, businesses and new construction. With the local electric LDCs, Enbridge Gas is partially funding an energy manager to support the implementation of the CEIS.



Appendix A: 2019 Avoided Costs

A1. EGD RATE ZONE 2019 AVOIDED COSTS

The inflation factor used is 1.27%. The discount rate is 5.32%. Avoided costs are presented in nominal dollars.

| | GAS AVOIDED COSTS | | | | | | | |
|----|---|-------|---|-------|---|-------|----------------------|-------|
| | RESIDENTIAL/COMMERCIAL WATER HEATING | | RESIDENTIAL/COMMERCIAL SPACE HEATING | | RESIDENTIAL/COMMERCIAL COMBINED SPACE & WATER HEATING | | INDUSTRIAL | |
| | (\$/M ³) | | (\$/M ³) | | (\$/M ³) | | (\$/M ³) | |
| | RATE | NPV | RATE | NPV | RATE | NPV | RATE | NPV |
| 1 | 0.193 | 0.196 | 0.211 | 0.223 | 0.214 | 0.225 | 0.192 | 0.195 |
| 2 | 0.185 | 0.372 | 0.204 | 0.417 | 0.203 | 0.418 | 0.186 | 0.372 |
| 3 | 0.191 | 0.543 | 0.210 | 0.606 | 0.210 | 0.607 | 0.191 | 0.544 |
| 4 | 0.196 | 0.711 | 0.217 | 0.791 | 0.216 | 0.792 | 0.197 | 0.713 |
| 5 | 0.202 | 0.876 | 0.223 | 0.973 | 0.222 | 0.973 | 0.203 | 0.877 |
| 6 | 0.208 | 1.036 | 0.230 | 1.150 | 0.229 | 1.150 | 0.209 | 1.039 |
| 7 | 0.214 | 1.193 | 0.237 | 1.323 | 0.236 | 1.322 | 0.215 | 1.196 |
| 8 | 0.221 | 1.347 | 0.244 | 1.493 | 0.243 | 1.491 | 0.222 | 1.350 |
| 9 | 0.228 | 1.497 | 0.251 | 1.659 | 0.250 | 1.657 | 0.228 | 1.501 |
| 10 | 0.234 | 1.644 | 0.259 | 1.821 | 0.258 | 1.818 | 0.235 | 1.649 |
| 11 | 0.241 | 1.788 | 0.266 | 1.980 | 0.265 | 1.976 | 0.242 | 1.793 |
| 12 | 0.249 | 1.929 | 0.274 | 2.135 | 0.273 | 2.131 | 0.249 | 1.934 |
| 13 | 0.256 | 2.066 | 0.283 | 2.286 | 0.282 | 2.282 | 0.257 | 2.072 |
| 14 | 0.264 | 2.201 | 0.291 | 2.435 | 0.290 | 2.430 | 0.265 | 2.207 |
| 15 | 0.272 | 2.332 | 0.300 | 2.580 | 0.299 | 2.575 | 0.273 | 2.339 |
| 16 | 0.280 | 2.461 | 0.309 | 2.722 | 0.308 | 2.716 | 0.281 | 2.468 |
| 17 | 0.288 | 2.587 | 0.318 | 2.860 | 0.317 | 2.855 | 0.289 | 2.594 |
| 18 | 0.297 | 2.710 | 0.328 | 2.996 | 0.327 | 2.990 | 0.298 | 2.717 |
| 19 | 0.306 | 2.830 | 0.337 | 3.129 | 0.336 | 3.122 | 0.307 | 2.838 |
| 20 | 0.315 | 2.948 | 0.347 | 3.259 | 0.346 | 3.252 | 0.316 | 2.956 |
| 21 | 0.324 | 3.063 | 0.358 | 3.386 | 0.357 | 3.378 | 0.325 | 3.071 |
| 22 | 0.334 | 3.175 | 0.369 | 3.510 | 0.367 | 3.502 | 0.335 | 3.184 |
| 23 | 0.344 | 3.285 | 0.380 | 3.631 | 0.379 | 3.623 | 0.345 | 3.295 |
| 24 | 0.354 | 3.393 | 0.391 | 3.750 | 0.390 | 3.741 | 0.356 | 3.403 |
| 25 | 0.365 | 3.498 | 0.403 | 3.866 | 0.402 | 3.857 | 0.366 | 3.508 |
| 26 | 0.376 | 3.601 | 0.415 | 3.979 | 0.414 | 3.970 | 0.377 | 3.612 |
| 27 | 0.387 | 3.702 | 0.427 | 4.091 | 0.426 | 4.081 | 0.389 | 3.713 |
| 28 | 0.399 | 3.800 | 0.440 | 4.199 | 0.439 | 4.189 | 0.400 | 3.811 |
| 29 | 0.411 | 3.896 | 0.453 | 4.305 | 0.452 | 4.295 | 0.412 | 3.908 |
| 30 | 0.423 | 3.990 | 0.467 | 4.409 | 0.466 | 4.398 | 0.425 | 4.002 |



| WATER AND ELECTRICITY AVOIDED COSTS | | | | |
|-------------------------------------|-----------------------|--------|---------------------|-------|
| RESIDENTIAL/COMMERCIAL/INDUSTRIAL | | | | |
| | WATER (\$/1000 LITRE) | | ELECTRICITY (¢/KWH) | |
| | RATE | NPV | RATE | NPV |
| 1 | 0.898 | 0.898 | 0.133 | 0.133 |
| 2 | 0.909 | 1.761 | 0.134 | 0.261 |
| 3 | 0.921 | 2.591 | 0.136 | 0.383 |
| 4 | 0.932 | 3.389 | 0.138 | 0.501 |
| 5 | 0.944 | 4.156 | 0.140 | 0.615 |
| 6 | 0.956 | 4.894 | 0.141 | 0.724 |
| 7 | 0.968 | 5.603 | 0.143 | 0.829 |
| 8 | 0.981 | 6.285 | 0.145 | 0.930 |
| 9 | 0.993 | 6.941 | 0.147 | 1.027 |
| 10 | 1.006 | 7.572 | 0.149 | 1.120 |
| 11 | 1.018 | 8.178 | 0.151 | 1.210 |
| 12 | 1.031 | 8.761 | 0.153 | 1.296 |
| 13 | 1.044 | 9.322 | 0.155 | 1.379 |
| 14 | 1.058 | 9.861 | 0.156 | 1.459 |
| 15 | 1.071 | 10.380 | 0.158 | 1.536 |
| 16 | 1.085 | 10.878 | 0.160 | 1.609 |
| 17 | 1.098 | 11.357 | 0.163 | 1.680 |
| 18 | 1.112 | 11.818 | 0.165 | 1.749 |
| 19 | 1.127 | 12.261 | 0.167 | 1.814 |
| 20 | 1.141 | 12.688 | 0.169 | 1.877 |
| 21 | 1.155 | 13.097 | 0.171 | 1.938 |
| 22 | 1.170 | 13.491 | 0.173 | 1.996 |
| 23 | 1.185 | 13.870 | 0.175 | 2.052 |
| 24 | 1.200 | 14.234 | 0.178 | 2.106 |
| 25 | 1.215 | 14.585 | 0.180 | 2.158 |
| 26 | 1.231 | 14.921 | 0.182 | 2.208 |
| 27 | 1.246 | 15.245 | 0.184 | 2.256 |
| 28 | 1.262 | 15.557 | 0.187 | 2.302 |
| 29 | 1.278 | 15.856 | 0.189 | 2.346 |
| 30 | 1.294 | 16.144 | 0.191 | 2.389 |

| AVOIDED CARBON COSTS | | |
|-----------------------------------|---------|-------|
| RESIDENTIAL/COMMERCIAL/INDUSTRIAL | | |
| | (\$/M³) | |
| | RATE | NPV |
| 1 | 0.039 | 0.039 |
| 2 | 0.059 | 0.095 |
| 3 | 0.078 | 0.165 |
| 4 | 0.098 | 0.249 |
| 5 | 0.099 | 0.330 |
| 6 | 0.100 | 0.407 |
| 7 | 0.102 | 0.482 |
| 8 | 0.103 | 0.553 |
| 9 | 0.104 | 0.622 |
| 10 | 0.106 | 0.689 |
| 11 | 0.107 | 0.752 |
| 12 | 0.108 | 0.813 |
| 13 | 0.110 | 0.872 |
| 14 | 0.111 | 0.929 |
| 15 | 0.112 | 0.983 |
| 16 | 0.114 | 1.036 |
| 17 | 0.115 | 1.086 |
| 18 | 0.117 | 1.134 |
| 19 | 0.118 | 1.181 |
| 20 | 0.120 | 1.226 |
| 21 | 0.121 | 1.269 |
| 22 | 0.123 | 1.310 |
| 23 | 0.124 | 1.350 |
| 24 | 0.126 | 1.388 |
| 25 | 0.128 | 1.425 |
| 26 | 0.129 | 1.460 |
| 27 | 0.131 | 1.494 |
| 28 | 0.133 | 1.527 |
| 29 | 0.134 | 1.558 |
| 30 | 0.136 | 1.589 |



A2. UNION RATE ZONES 2019 AVOIDED COSTS

The inflation factor used is 1.27%. The discount rate is 5.32%. Avoided costs are presented in nominal dollars.

| | GAS AVOIDED COSTS | | | | | |
|----|------------------------------------|-------|---|-------|----------------------|-------|
| | RESIDENTIAL/COMMERCIAL BASELOAD | | RESIDENTIAL/COMMERCIAL WEATHER SENSITIVE | | INDUSTRIAL | |
| | (\$/M ³) | | (\$/M ³) | | (\$/M ³) | |
| | RATE | NPV | RATE | NPV | RATE | NPV |
| 1 | 0.132 | 0.132 | 0.179 | 0.179 | 0.133 | 0.133 |
| 2 | 0.131 | 0.257 | 0.177 | 0.347 | 0.134 | 0.260 |
| 3 | 0.131 | 0.375 | 0.179 | 0.509 | 0.133 | 0.380 |
| 4 | 0.152 | 0.505 | 0.201 | 0.681 | 0.154 | 0.511 |
| 5 | 0.176 | 0.648 | 0.226 | 0.864 | 0.178 | 0.656 |
| 6 | 0.181 | 0.788 | 0.231 | 1.042 | 0.182 | 0.796 |
| 7 | 0.177 | 0.918 | 0.229 | 1.210 | 0.179 | 0.927 |
| 8 | 0.176 | 1.040 | 0.228 | 1.369 | 0.177 | 1.051 |
| 9 | 0.180 | 1.159 | 0.233 | 1.523 | 0.182 | 1.171 |
| 10 | 0.191 | 1.278 | 0.245 | 1.676 | 0.192 | 1.291 |
| 11 | 0.199 | 1.397 | 0.255 | 1.828 | 0.201 | 1.411 |
| 12 | 0.202 | 1.511 | 0.259 | 1.974 | 0.204 | 1.526 |
| 13 | 0.205 | 1.622 | 0.263 | 2.115 | 0.207 | 1.637 |
| 14 | 0.211 | 1.729 | 0.269 | 2.252 | 0.213 | 1.746 |
| 15 | 0.213 | 1.832 | 0.273 | 2.384 | 0.215 | 1.850 |
| 16 | 0.221 | 1.934 | 0.282 | 2.514 | 0.223 | 1.953 |
| 17 | 0.222 | 2.031 | 0.284 | 2.638 | 0.224 | 2.050 |
| 18 | 0.219 | 2.122 | 0.281 | 2.754 | 0.220 | 2.142 |
| 19 | 0.234 | 2.214 | 0.298 | 2.871 | 0.236 | 2.234 |
| 20 | 0.247 | 2.306 | 0.312 | 2.988 | 0.249 | 2.327 |
| 21 | 0.247 | 2.394 | 0.313 | 3.099 | 0.249 | 2.416 |
| 22 | 0.250 | 2.478 | 0.317 | 3.206 | 0.252 | 2.500 |
| 23 | 0.256 | 2.559 | 0.325 | 3.310 | 0.258 | 2.583 |
| 24 | 0.262 | 2.639 | 0.332 | 3.410 | 0.264 | 2.663 |
| 25 | 0.268 | 2.716 | 0.339 | 3.508 | 0.270 | 2.741 |
| 26 | 0.274 | 2.791 | 0.347 | 3.603 | 0.276 | 2.816 |
| 27 | 0.281 | 2.864 | 0.355 | 3.695 | 0.283 | 2.890 |
| 28 | 0.288 | 2.935 | 0.363 | 3.785 | 0.290 | 2.961 |
| 29 | 0.294 | 3.004 | 0.371 | 3.872 | 0.297 | 3.031 |
| 30 | 0.301 | 3.071 | 0.380 | 3.956 | 0.304 | 3.098 |



| WATER AND ELECTRICITY AVOIDED COSTS | | | | |
|-------------------------------------|-----------------------------------|--------|----------------------|-------|
| | RESIDENTIAL/COMMERCIAL/INDUSTRIAL | | | |
| | WATER (\$/1000 LITRE) | | ELECTRICITY (\$/KWH) | |
| | RATE | NPV | RATE | NPV |
| 1 | 0.777 | 0.777 | 0.133 | 0.133 |
| 2 | 0.787 | 1.524 | 0.134 | 0.261 |
| 3 | 0.797 | 2.243 | 0.136 | 0.383 |
| 4 | 0.807 | 2.934 | 0.138 | 0.501 |
| 5 | 0.817 | 3.598 | 0.140 | 0.615 |
| 6 | 0.828 | 4.237 | 0.141 | 0.724 |
| 7 | 0.838 | 4.851 | 0.143 | 0.829 |
| 8 | 0.849 | 5.442 | 0.145 | 0.930 |
| 9 | 0.860 | 6.010 | 0.147 | 1.027 |
| 10 | 0.871 | 6.556 | 0.149 | 1.120 |
| 11 | 0.882 | 7.081 | 0.151 | 1.210 |
| 12 | 0.893 | 7.586 | 0.153 | 1.296 |
| 13 | 0.904 | 8.071 | 0.155 | 1.379 |
| 14 | 0.916 | 8.538 | 0.156 | 1.459 |
| 15 | 0.927 | 8.986 | 0.158 | 1.536 |
| 16 | 0.939 | 9.418 | 0.160 | 1.609 |
| 17 | 0.951 | 9.833 | 0.163 | 1.680 |
| 18 | 0.963 | 10.232 | 0.165 | 1.748 |
| 19 | 0.975 | 10.616 | 0.167 | 1.814 |
| 20 | 0.988 | 10.984 | 0.169 | 1.877 |
| 21 | 1.000 | 11.339 | 0.171 | 1.938 |
| 22 | 1.013 | 11.680 | 0.173 | 1.996 |
| 23 | 1.026 | 12.008 | 0.175 | 2.052 |
| 24 | 1.039 | 12.323 | 0.178 | 2.106 |
| 25 | 1.052 | 12.627 | 0.180 | 2.158 |
| 26 | 1.065 | 12.918 | 0.182 | 2.208 |
| 27 | 1.079 | 13.198 | 0.184 | 2.255 |
| 28 | 1.093 | 13.468 | 0.187 | 2.301 |
| 29 | 1.107 | 13.727 | 0.189 | 2.346 |
| 30 | 1.121 | 13.976 | 0.191 | 2.388 |

| AVOIDED CARBON COSTS | | |
|----------------------|-----------------------------------|-------|
| | RESIDENTIAL/COMMERCIAL/INDUSTRIAL | |
| | (\$/M³) | |
| | RATE | NPV |
| 1 | 0.039 | 0.039 |
| 2 | 0.059 | 0.095 |
| 3 | 0.078 | 0.165 |
| 4 | 0.098 | 0.249 |
| 5 | 0.099 | 0.330 |
| 6 | 0.100 | 0.407 |
| 7 | 0.102 | 0.482 |
| 8 | 0.103 | 0.553 |
| 9 | 0.104 | 0.622 |
| 10 | 0.106 | 0.689 |
| 11 | 0.107 | 0.752 |
| 12 | 0.108 | 0.813 |
| 13 | 0.110 | 0.872 |
| 14 | 0.111 | 0.929 |
| 15 | 0.112 | 0.983 |
| 16 | 0.114 | 1.036 |
| 17 | 0.115 | 1.086 |
| 18 | 0.117 | 1.134 |
| 19 | 0.118 | 1.181 |
| 20 | 0.120 | 1.226 |
| 21 | 0.121 | 1.269 |
| 22 | 0.123 | 1.310 |
| 23 | 0.124 | 1.350 |
| 24 | 0.126 | 1.388 |
| 25 | 0.128 | 1.425 |
| 26 | 0.129 | 1.460 |
| 27 | 0.131 | 1.494 |
| 28 | 0.133 | 1.527 |
| 29 | 0.134 | 1.558 |
| 30 | 0.136 | 1.589 |



Appendix B: Target Setting Methodology

B1. EGD RATE ZONE

| Enbridge Gas Distribution Inc. - 2019 Resource Acquisition Scorecard | | Metric Target | | | Weight |
|---|--|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | |
| Home Energy Conservation Residential Adaptive Thermostats Commercial & Industrial Custom Commercial & Industrial Prescriptive Commercial & Industrial Direct Install Run-it-Right Comprehensive Energy Management (CEM) | Large Volume Customers Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 Large Volume Customers Resource Acquisition actual spend without overheads x 2019 Large Volume Customers Resource Acquisition budget without overheads x 1.02 | 150% of Target | 40% |
| | Small Volume Customers Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 Small Volume Customers Resource Acquisition actual spend without overheads x 2019 Small Volume Customers Resource Acquisition budget without overheads x 1.02 | 150% of Target | 40% |
| Home Energy Conservation | Residential Deep Savings Participants (Homes) | 75% of Target | 2018 metric achievement / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 20% |

Note: Metric achievement is calculated using verified program savings used for LRAMVA purposes

| Enbridge Gas Distribution Inc. - 2019 Low Income Scorecard | | Metric Target | | | Weight |
|--|-------------------------------------|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | |
| Home Winterproofing | Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 45% |
| Low-Income Multi-Residential | Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 45% |
| Low-Income New Construction | Number of Project Applications | 75% of Target | 2018 metric achievement / 2018 accrued program cost without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 10% |

Note: Metric achievement is calculated using verified program savings used for LRAMVA purposes

| Enbridge Gas Distribution Inc. - 2019 Market Transformation Scorecard | | Metric Target | | | Weight |
|---|------------------|---------------|--|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | |
| School Energy Competition | Schools | 75% of Target | 2018 metric achievement / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 10% |
| Run-it-Right | Participants | 75% of Target | 2018 metric achievement / 2018 accrued program costs without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 20% |
| Comprehensive Energy Management (CEM) | Participants | 75% of Target | 2018 metric achievement / 2018 accrued program costs without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 20% |
| Residential Savings by Design | Builders | 75% of Target | 2018 metric achievement / 2018 accrued program costs without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 10% |
| | Homes Built | 75% of Target | 2018 metric achievement / 2018 accrued program costs without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 15% |
| Commercial Savings by Design | New Developments | 75% of Target | 2018 metric achievement / 2018 accrued program costs without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 25% |



B2. UNION RATE ZONES

| Union Gas Limited - 2019 Resource Acquisition Scorecard | | Metric Targets | | | |
|---|---------------------------------------|----------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | Weight |
| Home Reno Rebate Residential Adaptive Thermostat Commercial & Industrial Custom Commercial & Industrial Prescriptive Commercial & Industrial Direct Install | Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 Resource Acquisition actual spend without overheads x 2019 Resource Acquisition budget without overheads (and not including Residential Adaptive Thermostat program) x 1.02 + 34,645,500 m3 | 150% of Target | 75% |
| Home Reno Rebate | Home Reno Rebate Participants (Homes) | 75% of Target | 2018 metric achievement / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 25% |

Note: Metric achievement is calculated using verified program savings used for LRAMVA purposes

| Union Gas Limited - 2019 Low Income Scorecard | | Metric Target | | | |
|--|---|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | Weight |
| Home Weatherization Furnace End-of-Life Aboriginal | Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 60% |
| Multi-family | Social and Assisted Multi-Family Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 35% |
| | Market Rate Multi-Family Cumulative Natural Gas Savings (m3) | 75% of Target | 2018 metric achievement (LRAM natural gas savings) / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.02 | 150% of Target | 5% |

| Union Gas Limited - 2019 Market Transformation Scorecard | | Metric Target | | | |
|--|--|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | Weight |
| Optimum Home | Participating Builders (Regional Top 10) | 3 | 4 | 6 | 10% |
| | Prototype Homes Built | 68% | 90% | 100% | 10% |
| | Homes Built (>15% above OBC 2017) by Participating Builders | 75% of Target | 2018 metric achievement / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 30% |
| Commercial New Construction | New Developments Enrolled by Participating Builders | 75% of Target | 2018 metric achievement / 2018 actual program spend without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 50% |

| Union Gas Limited - 2019 Large Volume Scorecard | | Metric Target | | | |
|---|--|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | Weight |
| Large Volume Program for T2/R100 Customers | Cumulative Natural Gas Savings (m3) | 75% of Target | Three-year rolling average (2016-2018) Rate T2/Rate 100 cost effectiveness x 2019 budget without overheads x 1.02 | 150% of Target | 100% |

*Cost effectiveness = Final verified metric achievement used for LRAMVA purposes divided by final actual program spend for that year

| Union Gas Limited - 2019 Performance-Based Scorecard | | Metric Target | | | |
|--|--------------|---------------|---|----------------|--------|
| Programs | Metrics | Lower Band | Target | Upper Band | Weight |
| RunSmart | Participants | 75% of Target | 2018 metric achievement / 2018 accrued program cost without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 10% |
| | Savings (%) | 75% of Target | 2018 metric achievement / 2018 accrued program cost without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 40% |
| Strategic Energy Management (SEM) | Savings (%) | 75% of Target | 2018 metric achievement / 2018 accrued program cost without overheads x 2019 program budget without overheads x 1.1 | 150% of Target | 50% |



Appendix C: Offering Details (EGD Rate Zone)

C1. HOME EFFICIENCY REBATE OFFERING

The maximum rebate payment for the Home Efficiency Rebate (“HER”) Offering was \$5,000 per home, which includes rebates for the home energy assessments, measure upgrades, and bonuses.

Measure Rebates

| MEASURE | CRITERIA | REBATE |
|--|---|---------|
| Attic Insulation | Increase insulation from R12 or less to at least R50 | \$500 |
| | Increase insulation from R13 to R25 to at least R50 | \$250 |
| | Increase cathedral/flat roof insulation by at least R14 | \$500 |
| Air Sealing | Achieve 10% or more above base target | \$150 |
| | Achieving base target | \$100 |
| Basement Insulation Must upgrade a minimum of 20 per cent of the total wall area | Add at least R23 insulation to 100% of basement | \$1,000 |
| | Add at least R12 insulation to 100% of basement | \$500 |
| | Add at least R23 insulation to 100% of crawl space wall | \$800 |
| | Add at least R10 insulation to 100% of crawl space wall | \$400 |
| | Add at least R24 insulation to 100% of floor above crawl space | \$450 |
| Exterior Wall Insulation Must upgrade a minimum of 20 per cent of the total wall area | Add at least R20 to 100% of building | \$2,000 |
| | Add at least R9 insulation to 100% of building to achieve a minimum of R12 | \$1,500 |
| | Add at least R3.8 to 100% of building to achieve a minimum of R12 | \$1,000 |
| Furnace/Boiler | Replace a 94% or less AFUE with a 95% or higher AFUE natural gas, propane, or oil furnace; OR, Replace an 89% or less AFUE with a 90% or higher AFUE natural gas, propane, or oil boiler. | \$750 |
| Water Heater | <ul style="list-style-type: none"> Replace existing natural gas water heater with 0.80 EF or higher tanked ENERGY STAR® qualified natural gas water heater. | \$200 |
| | <ul style="list-style-type: none"> or Replace existing natural gas water heater with 0.90 EF or higher tankless ENERGY STAR® qualified natural gas water heater. | |
| Window/Door/Skylight | For each window, door or skylight replaced with an ENERGY STAR®-qualified model. | \$40 |

Assessment Rebate

Since pre-energy and post-energy assessments are participation requirements, eligible customers receive a rebate of \$550 for completing the assessments. The amount is intended to cover almost the full cost of the assessments, excluding HST.

Bonus Rebate

A bonus rebate of \$250 was available for each measure installed beyond the first two. This rebate was intended to encourage homeowners to pursue all energy savings opportunities available to them.

Limited Time Offers

In Q4 2019, Enbridge Gas introduced limited time offers, whereby homeowners were encouraged to participate in one of two customized packages that provided greater savings and aimed at driving greater participation in insulation and building envelope measures. The LTO packages were available to qualifying participants who completed their initial assessment on/after September 1, 2019 and their final assessment on/before December 31, 2019.



- Package 1: Receive \$1,750 Rebate + \$550 rebate for audit cost (Total \$2,300) when the homeowner completes the following measures:
 - Replace furnace/boiler
 - Attic Insulation
 - Achieve Air Sealing target or target + 10%
- Package 2: Receive \$750 Rebate + \$550 rebate for audit cost (Total \$1,300) when the homeowner completes the following measures:
 - Attic Insulation
 - Achieve Air Sealing target or target + 10%

C2. RESIDENTIAL ADAPTIVE THERMOSTAT OFFERING

A \$75 instant rebate offer is provided to customers towards their purchase of a qualifying adaptive thermostat device through specific retailers.

The rebate could be obtained in one of two ways:

- An instant point-of-purchase \$75 rebate towards their online purchase of an eligible device
- OR
- An instant point-of-purchase \$75 rebate towards their in-store purchase of an eligible device from participating Home Depot stores province-wide

C3. CUSTOM COMMERCIAL OFFERING

In addition to technical expertise, participants are eligible to receive financial incentives based on the incentive structure below:

| % OF ANNUAL CONSUMPTION (M ³) SAVED | \$/M ³ INCENTIVE |
|---|-----------------------------|
| 0-20% | \$0.15/m ³ |
| above 20% | \$0.30/m ³ |

Participants can also receive an incentive for audit costs based on the table below:

| OFFER | INCENTIVE AMOUNT |
|------------|--|
| HVAC | The Lesser of: (i) \$0.01 per m ³ of estimated natural gas savings based on consumption in the most recently completed calendar year, or (ii) 50% of the Eligible Audit Costs** up to a maximum of \$5,000 per Facility |
| Steam Trap | The Lesser of: (i) \$10 per trap audited, or (ii) 50% of the Eligible Audit Costs** up to a maximum Incentive of \$5,000 |

**** The Eligible Audit Costs consist of are the costs invoiced by the Applicant's Contractor and, exclusive of applicable taxes, incurred solely for the purpose of conducting the Audit and preparing the Audit Report, that are paid by the Applicant.**



Limited Time Offer

Enbridge Gas provided double incentive amount on the custom retrofit projects, covering up to 50% of the project cost to a maximum of \$100,000/project. This offer available for the first 150 qualified commercial custom projects booked with an Enbridge Gas Energy Solutions Advisor by June 30, 2019.

C4. CUSTOM INDUSTRIAL OFFERING

In addition to technical expertise, customers are eligible for energy assessment rebates of up to 50% of the cost up to a maximum of:

| ANNUAL NATURAL GAS CONSUMPTION | MAXIMUM INCENTIVE |
|--|-------------------|
| 2,500,000 m ³ or greater | \$10,000 |
| 1,000,000 m ³ to 2,499,999 m ³ | \$6,000 |
| 340,000 m ³ to 999,999 m ³ | \$2,000 |
| Up to 339,999 m ³ | \$1,000 |

Participants are also eligible to receive up to 50% of their project costs, to a maximum of \$100,000 per project based on the following incentive structure:

- \$0.20/m³ for first 50,000 m³ gas saved
- \$0.05/m³ for gas savings above 50,000 m³

C5. COMMERCIAL & INDUSTRIAL PRESCRIPTIVE (FIXED) INCENTIVE OFFERING

| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE | DISTRIBUTOR/DEALER INCENTIVE |
|---|--------------------|----------------------------|------------------------------|
| Space Heating | | | |
| Air Doors (pedestrian, no vestibule, 7'x3') | \$300/door | \$100 | \$50 |
| Air Doors (pedestrian, no vestibule, 7'x6') | \$400/door | \$100 | \$50 |
| Air Doors (pedestrian, no vestibule, 8'x6') | \$500/door | \$100 | \$50 |
| Air Doors (pedestrian, with vestibule, 7'x3') | \$200/door | \$100 | \$50 |
| Air Doors (pedestrian, with vestibule, 7'x6') | \$300/door | \$100 | \$50 |
| Air Doors (pedestrian, with vestibule, 8'x6') | \$400/door | \$100 | \$50 |
| Air Doors (shipping/receiving, 8'x8') | \$1,200/door | \$100 | \$50 |
| Air Doors (shipping/receiving, 8'x10') | \$1,200/door | \$100 | \$50 |
| Air Doors (shipping/receiving, 10'x10') | \$1,800/door | \$100 | \$50 |
| Condensing Boilers (up to 299 MBH, AFUE of 90% or Greater) | \$1,000 | \$100 | \$50 |
| Condensing Furnaces (up to 225 kBtu/hr) | \$200 | \$100 | \$50 |
| Condensing Make-Up Air Units (single speed, up to 14,000 CFM) | \$0.30/CFM | \$100 | \$50 |
| Condensing Make-Up Air Units (two speed, up to 14,000 CFM) | \$0.60/CFM | \$100 | \$50 |
| Demand Control Ventilation (single zone, per sensor) | \$500 | \$100 | \$50 |



| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE | DISTRIBUTOR/DEALER INCENTIVE |
|--|---|---|---|
| Destratification Fans (>20ft diameter) | \$1,000 | \$100 | \$50 |
| Energy Recovery Ventilators (no existing ERV and not required by code, 55% to 64% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 | \$50 |
| Energy Recovery Ventilators (no existing ERV and not required by code, 65% to 74% sensible heat recovery effectiveness) | \$1.25/CFM | \$100 | \$50 |
| Energy Recovery Ventilators (no existing ERV and not required by code, 75% to 84% sensible heat recovery effectiveness) | \$1.50/CFM | \$100 | \$50 |
| Energy Recovery Ventilators (no existing ERV and not required by code, 85% or greater sensible heat recovery effectiveness) | \$1.75/CFM | \$100 | \$50 |
| Energy Recovery Ventilators, Improved Effectiveness (replacement of existing ERV, 65% to 74% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |
| Energy Recovery Ventilators, Improved Effectiveness (replacement of existing ERV, 75% to 84% sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| Energy Recovery Ventilators, Improved Effectiveness (replacement of existing ERV, 85% or greater sensible heat recovery effectiveness) | \$1.15/CFM | \$100 | \$50 |
| Heat Recovery Ventilators (no existing HRV and not required by code, 55% to 64% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |
| Heat Recovery Ventilators (no existing HRV and not required by code, 65% to 74% sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| Heat Recovery Ventilators (no existing HRV and not required by code, 75% to 84% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 | \$50 |
| Heat Recovery Ventilators (no existing HRV and not required by code, 85% or greater sensible heat recovery effectiveness) | \$1.25/CFM | \$100 | \$50 |
| Heat Recovery Ventilators, Improved Effectiveness (replacement of existing HRV, 65% to 74% sensible heat recovery effectiveness) | \$0.25/CFM | \$100 | \$50 |
| Heat Recovery Ventilators, Improved Effectiveness (replacement of existing HRV, 75% to 84% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |
| Heat Recovery Ventilators, Improved Effectiveness (replacement of existing HRV, 85% or greater sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| High Efficiency Boilers (up to 299 MBH, AFUE of 85% or greater) | \$600 | \$100 | \$50 |
| High Efficiency Boilers (300 to 599 MBH, AFUE of 85% or greater) | \$600 | \$100 | \$50 |
| High Efficiency Boilers (600 to 999 MBH, AFUE of 85% or greater) | \$1,100 | \$100 | \$50 |
| High Efficiency Boilers (1,000 to 1,499 MBH, AFUE of 85% or greater) | \$2,000 | \$100 | \$50 |
| High Efficiency Boilers (1,500 to 2,000 MBH, AFUE of 85% or greater) | \$3,200 | \$100 | \$50 |
| High Efficiency Boilers for School Boards (elementary schools) | \$2,100 | \$100 | \$50 |
| High Efficiency Boilers for School Boards (elementary schools) | \$8,500 | \$100 | \$50 |
| Condensing Unit Heaters (30 to 300 kBtu/hr) | \$750 (transitioned to Distributor Discount Program during 2019 program year) | \$100 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |
| Infrared Heaters (single stage and high intensity up to 300,000 BTUs) | \$300 (discontinued during 2019 program year) | \$100 (discontinued during 2019 program year) | \$50 (discontinued during 2019 program year) |



| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE | DISTRIBUTOR/DEALER INCENTIVE |
|---|--|--|---|
| Infrared Heaters (two stage up to 300,000 BTUs) | \$400 (discontinued during 2019 program year) | \$100 (discontinued during 2019 program year) | \$50 (discontinued during 2019 program year) |
| Water Heating | | | |
| Ozone Laundry System (commercial) | \$0.02 per total annual lbs. of laundry processed, max \$8,000 per system | \$100 | \$50 |
| Condensing Storage Water Heaters (greater than 75kBtu/hr) | \$450 (transitioned to Distributor Discount Program during 2019 program year) | \$100 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |
| Condensing Tankless Water Heaters (greater than 75 kBtu/hr) | \$450 (transitioned to Distributor Discount Program during 2019 program year) | \$100 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |
| Food Service | | | |
| Demand Control Kitchen Ventilation System (up to 5,000 CFM) | \$1,200 | \$100 | \$50 |
| Demand Control Kitchen Ventilation System (5,001 to 10,000 CFM) | \$3,000 | \$100 | \$50 |
| Demand Control Kitchen Ventilation System (10,001 to 15,000 CFM) | \$4,400 | \$100 | \$50 |
| ENERGY STAR Qualified Dishwashers (undercounter) | \$100 | \$50 | \$50 |
| ENERGY STAR Qualified Dishwashers (stationary rack) | \$200 | \$50 | \$50 |
| ENERGY STAR Qualified Dishwashers (rack conveyor) | \$450 | \$50 | \$50 |
| ENERGY STAR Fryers (qualified natural gas fryers) | \$600 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |
| ENERGY STAR Steam Cookers (qualified natural gas steam cookers) | \$1,000 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |
| High-Efficiency Broilers (maximum idle energy rate:65,000 BTU/hr, minimum efficiency 34%, indicate 3,4,5 or 6 foot) | \$400 (transitioned to Distributor Discount Program during 2019 program year) | \$100 (transitioned to Distributor Discount Program during 2019 program year) | \$50 (transitioned to Distributor Discount Program during 2019 program year) |

Distributor Discount Program Incentives (midstream initiative)

| TECHNOLOGY | DISTRIBUTOR/DEALER INCENTIVE |
|-----------------------------------|------------------------------|
| HVAC | |
| Condensing Unit Heaters | \$750 |
| Condensing Storage Water Heaters | \$450 |
| Condensing Tankless Water Heaters | \$450 |
| Food Service | |
| ENERGY STAR Fryers | \$600/vat |
| ENERGY STAR Steam Cookers | \$1,000 |
| High-Efficiency Broilers | \$400 |



C6. COMMERCIAL & INDUSTRIAL DIRECT INSTALL OFFERING

Eligible customers are provided with:

- Installation of demand control kitchen ventilation, with up to 80% of the total project cost covered
- Installation of shipping and receiving air doors, with up to 90% of the total project cost covered
- Installation of pedestrian air doors, with up to 100% of the total project cost covered (removed during 2019 program year)

C7. ENERGY LEADERS OFFERING

Technical assistance and financial incentives determined on a case-by-case basis

C8. HOME WINTERPROOFING OFFERING

There is no financial cost to the participant for this offering. In addition to home energy assessments, the offering included the following measures:

- Insulation (attic, wall, basement)
- Draftproofing
- Smart thermostats
- Showerheads
- Kitchen and bathroom aerators
- CO detectors

To be eligible for the offering, the participant must meet the following criteria:

- Occupant of single/semi-detached, town/row house or low-rise multi-family housing (three stories or less, as defined by Part 9 of the Ontario Building Code); and,
- Income is at or below 135% of Statistics Canada's Low-Income Cut-Off ("LICO") or participate in government assistance programs (private homeowner or tenant must heat their home with natural gas and pay their own gas bills); or,
- Tenant resides in social and assisted housing, regardless of gas bill payment responsibility.

C9. MULTI-RESIDENTIAL AFFORDABLE HOUSING OFFERING

| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE |
|-----------------------|--------------------|----------------------------|
| <u>Direct-Install</u> | | |
| Low-Flow Showerheads | free | N/A |



| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE |
|---|---|----------------------------|
| Heat Reflector Panels | free | N/A |
| <u>Energy Audits</u> | Up to \$5,000 per building, an annual maximum limit of \$40,000 per housing providers | N/A |
| <u>Custom Incentives</u> | | |
| Capital improvements | \$0.04 per lifetime m ³ of gas saved, up to a maximum of \$200,000 or 50% of the retrofit cost (whichever is less) | N/A |
| <u>Fixed Incentives</u> | | |
| Condensing Boilers (up to 299MBH, AFUE of 90% or greater) | \$2,000 | \$100 |
| High-Efficiency Seasonal Boilers (up to 299MBH, AFUE of 90% or greater) | \$1,200 | \$100 |
| High-Efficiency Seasonal Boilers (300 to 599MBH, AFUE of 90% or greater) | \$1,500 | \$100 |
| High-Efficiency Seasonal Boilers (600 to 999MBH, AFUE of 90% or greater) | \$2,200 | \$100 |
| High-Efficiency Seasonal Boilers (1,000 to 1,499MBH, AFUE of 90% or greater) | \$4,000 | \$100 |
| High-Efficiency Seasonal Boilers (1,500 to 1,999MBH, AFUE of 90% or greater) | \$6,400 | \$100 |
| High-Efficiency Seasonal Boilers (2,000MBH, AFUE of 90% or greater) | \$9,000 | \$100 |
| High-Efficiency Non-Seasonal Boilers (up to 299MBH, AFUE of 90% or greater) | \$1,200 | \$100 |
| High-Efficiency Non-Seasonal Boilers (300 to 599MBH, AFUE of 90% or greater) | \$1,500 | \$100 |
| High-Efficiency Non-Seasonal Boilers (600 to 999MBH, AFUE of 90% or greater) | \$2,200 | \$100 |
| High-Efficiency Non-Seasonal Boilers (1,000 to 1,499MBH, AFUE of 90% or greater) | \$4,000 | \$100 |
| High-Efficiency Non-Seasonal Boilers (1,500MBH, AFUE of 90% or greater) | \$6,400 | \$100 |
| Condensing Furnaces (up to 225kBtu/hr, AFUE of 95% or greater) | \$400 | \$100 |
| Condensing Storage Water Heaters (multi-residential 75 to 249kBtu/hr) | \$900 | \$100 |
| Condensing Storage Water Heaters (multi-residential 250kBtu/hr or greater) | \$1,250 | \$100 |
| Condensing Tankless Water Heaters (multi-residential 75 to 249kBtu/hr) | \$900 | \$100 |
| Condensing Tankless Water Heaters (multi-residential 250kBtu/hr or greater) | \$1,250 | \$100 |
| Condensing Make-Up Air Units (up to 14,000CFM) | \$1.20/CFM | \$100 |
| Energy Recovery Ventilators (no existing ERV or not required by Code, 55% to 64% sensible heat recovery effectiveness) | \$2.00/CFM | \$100 |
| Energy Recovery Ventilators (no existing ERV or not required by Code, 65% to 74% sensible heat recovery effectiveness) | \$2.25/CFM | \$100 |
| Energy Recovery Ventilators (no existing ERV or not required by Code, 75% to 84% sensible heat recovery effectiveness) | \$2.50/CFM | \$100 |
| Energy Recovery Ventilators (no existing ERV or not required by Code, 85% or greater sensible heat recovery effectiveness) | \$3.00/CFM | \$100 |
| Energy Recovery Ventilators Improved Effectiveness (replacement of existing ERV, 65% to 74% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 |



| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE |
|---|--------------------|----------------------------|
| Energy Recovery Ventilators Improved Effectiveness (replacement of existing ERV, 75% to 84% sensible heat recovery effectiveness) | \$1.50/CFM | \$100 |
| Energy Recovery Ventilators Improved Effectiveness (replacement of existing ERV, 85% or greater sensible heat recovery effectiveness) | \$2.30/CFM | \$100 |
| Heat Recovery Ventilators (no existing HRV or not required by Code, 55% to 64% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 |
| Heat Recovery Ventilators (no existing HRV or not required by Code, 65% to 74% sensible heat recovery effectiveness) | \$1.25/CFM | \$100 |
| Heat Recovery Ventilators (no existing HRV or not required by Code, 75% to 84% sensible heat recovery effectiveness) | \$1.50/CFM | \$100 |
| Heat Recovery Ventilators (no existing HRV or not required by Code, 85% or greater sensible heat recovery effectiveness) | \$2.00/CFM | \$100 |
| Heat Recovery Ventilators Improved Effectiveness (replacement of existing HRV, 65% to 74% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 |
| Heat Recovery Ventilators Improved Effectiveness (replacement of existing HRV, 75% to 84% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 |
| Heat Recovery Ventilators Improved Effectiveness (replacement of existing HRV, 85% or greater sensible heat recovery effectiveness) | \$1.50/CFM | \$100 |
| Low-Flow Showerheads (multi-family residential buildings only. Replacement of an old showerhead 2.5GPM or more with a new one at a flow rate of 1.5GPM or less) | \$12.50/showerhead | N/A |

To be eligible, Part 3 buildings must be:

- Social and assisted housing, or non-profit housing; or,
- Low-income market rate multi-family (based on census data, and municipal data where available)

C10. SAVINGS BY DESIGN AFFORDABLE HOUSING OFFERING

Offering incentives are as follows:

- Enbridge Gas covers the cost of the IDP workshop. In addition, Enbridge Gas provides a Technical Assistance Incentive of \$7,500 to offset the cost of professional consulting fees incurred by the housing provider in order to bring their design team to the workshop.
- For Part 3 developments:
 - Participants are eligible for a tiered incentive, up to a maximum of \$120,000, depending on the number of units in the development and achieved energy performance of the multi-residential building once constructed, as follows:

| AMOUNT EXCEEDING 2017 ONTARIO BUILDING CODE | INCENTIVE PER UNIT |
|---|--------------------|
| $7\% \leq x \leq 12\%$ | \$750 |
| $12\% \leq x \leq 17\%$ | \$850 |
| $x > 17\%$ | \$1,000 |

- For Part 9 developments:
 - Following the housing project's construction to at least 15% above the 2017 Ontario Building Code efficiency requirements, participants receive a one-time incentive payment of \$5,000.



- Participants are also eligible to receive \$1,500 for each residential housing unit designed at least 15% more energy efficient than the 2017 Ontario Building Code, up to a maximum of \$120,000 per project.

Eligibility criteria consists of the following:

- New construction project must be located within the EGD rate zone; and,
- The project proponent must have been recognized as a builder or provider of affordable housing by a municipal, provincial, and/or federal body, by virtue of receiving financial assistance, in the present or at any time in the past, from a government program aimed at affordable housing.

C11. SAVINGS BY DESIGN RESIDENTIAL OFFERING

Builders are provided in-kind services up to \$25,000 for design and modelling. Performance incentives are as follows:

- Builders that complete the IDP portion of the offer for the first time are eligible to receive \$2,000 per home completed to the SBD standard (up to 50 homes);
- Builders that complete the IDP portion of the offer for the second time are eligible to receive \$1,000 per home completed to the SBD standard (up to 100 homes);
- Builders that complete the IDP portion of the offer for the third time are eligible to receive \$500 per home completed to the SBD standard (up to 200 homes).

Residential builders are eligible if they intend to construct at least 50 homes through the duration of the commitment, within three years of completing the IDP.

C12. SAVINGS BY DESIGN COMMERCIAL OFFERING

| PROJECT PHASE | INCENTIVE | DETAILS |
|------------------|---------------------------------|--|
| Planning/Design | Services (up to \$30,000 value) | Includes IDP session and final IDP report |
| Pre-Construction | \$15,000 financial incentive | Provided upon completion of a pre-construction energy model that meets the energy performance target |
| Commissioning | \$15,000 financial incentive | Provided upon completion of a final (as-constructed) energy model that demonstrates the building meets the energy performance target |

- Construction projects must have a minimum threshold of 50,000 square feet per project (including aggregate multi-location projects)
- Building(s) must be in the design phase or earlier
- Building construction must be completed within 5 years of completion of the IDP, and building must be commissioned within 1 year of construction completion
- Builders are eligible to participate in the offering multiple times for different projects



C13. SCHOOL ENERGY COMPETITION OFFERING

In addition to prizes awarded throughout the year (such as school/library supplies and computing assets), six financial prizes awarded:

- The top elementary and secondary school with the most points will receive \$3,000 each;
- The second place elementary and secondary schools will receive \$2,000; and,
- The third place elementary and secondary schools will receive \$2,000 each.

Schools must register, implement activities, and have access to an Energy Management Information System ("EMIS") to track natural gas consumption. Participating schools must be part of a public school board within the EGD rate zone.

C14. RUN IT RIGHT OFFERING

In addition to technical support provided by Enbridge Gas, participants are provided the following incentives:

- Enbridge Gas will fund \$1,000 towards a facility investigation.
- Enbridge Gas provides up to \$8,000 towards implementation costs.
- Enbridge Gas will fund the cost of using the Enbridge Gas Energy Management Information System ("EMIS") for a period of 12 months or customers may opt to purchase and install a third party EMIS and receive a \$1,000 incentive to cover the cost.

In addition, a \$250 incentive is available for energy efficiency partners, for each participant that completes the offering.

Participants must be able to provide Enbridge Gas with daily gas consumption data, and have a building that has been occupied for more than 12 months. In addition, participants must confirm that there are no major capital upgrades in the previous 12 months, and are not planned for the monitoring term.

C15. COMPREHENSIVE ENERGY MANAGEMENT OFFERING

CEM offers financial incentives as follows:

- Up to 80% of the cost of installation or updates to EMIS, to a maximum of \$50,000 per participant
- Up to \$10,000 in funding to promote energy awareness and encourage energy efficiency training within the organization
- Participant can apply for up to \$2,500 financial assistance for their energy team members to cover the costs of energy management related training (such as CEM certification).

Participants are then eligible to receive financial incentives for their projects, as per the Custom Industrial Offering.



Appendix D: Offering Details (Union Rate Zones)

D1. HOME EFFICIENCY REBATE OFFERING

The maximum rebate payment for the Home Efficiency Rebate (“HER”) Offering was \$5,000 per home, which includes rebates for the home energy assessments, measure upgrades, and bonuses.

Measure Rebates

| MEASURE | CRITERIA | REBATE |
|--|--|---------|
| Attic Insulation | Increase insulation from R12 or less to at least R50 | \$500 |
| | Increase insulation from R13 to R25 to at least R50 | \$250 |
| | Increase cathedral/flat roof insulation by at least R14 | \$500 |
| Air Sealing | Achieve 10% or more above base target | \$150 |
| | Achieving base target | \$100 |
| Basement Insulation Must upgrade a minimum of 20 per cent of the total wall area | Add at least R23 insulation to 100% of basement | \$1,000 |
| | Add at least R12 insulation to 100% of basement | \$500 |
| | Add at least R23 insulation to 100% of crawl space wall | \$800 |
| | Add at least R10 insulation to 100% of crawl space wall | \$400 |
| | Add at least R24 insulation to 100% of floor above crawl space | \$450 |
| Exterior Wall Insulation Must upgrade a minimum of 20 per cent of the total wall area | Add at least R20 to 100% of building | \$2,000 |
| | Add at least R9 insulation to 100% of building to achieve a minimum of R12 | \$1,500 |
| | Add at least R3.8 to 100% of building to achieve a minimum of R12 | \$1,000 |
| Furnace/Boiler | Replace a 94% or less AFUE with a 95% or higher AFUE natural gas, propane, or oil furnace; OR, Replace an 89% or less AFUE with a 90% or higher AFUE natural gas, propane, or oil boiler. | \$750 |
| Water Heater | <ul style="list-style-type: none"> Replace existing natural gas water heater with 0.80 EF or higher tanked ENERGY STAR® qualified natural gas water heater. or Replace existing natural gas water heater with 0.90 EF or higher tankless ENERGY STAR® qualified natural gas water heater. | \$200 |
| Window/Door/Skylight | For each window, door or skylight replaced with an ENERGY STAR®-qualified model. | \$40 |

Assessment Rebate

Since pre-energy and post-energy assessments are participation requirements, eligible customers receive a rebate of \$550 for completing the assessments. The amount is intended to cover almost the full cost of the assessments, excluding HST.

Bonus Rebate

A bonus rebate of \$250 was available for each measure installed beyond the first two. This rebate was intended to encourage homeowners to pursue all energy savings opportunities available to them.

Limited Time Offers

In Q4 2019, Enbridge Gas introduced limited time offers, whereby homeowners were encouraged to participate in one of two customized packages that provided greater savings and aimed at driving greater participation in insulation and building envelope



measures. The LTO packages were available to qualifying participants who completed their initial assessment on/after September 1, 2019 and their final assessment on/before December 31, 2019.

- Package 1: Receive \$1,750 Rebate + \$550 rebate for audit cost (Total \$2,300) when the homeowner completes the following measures:
 - Replace furnace/boiler
 - Attic Insulation
 - Achieve Air Sealing target or target + 10%
- Package 2: Receive \$750 Rebate + \$550 rebate for audit cost (Total \$1,300) when the homeowner completes the following measures:
 - Attic Insulation
 - Achieve Air Sealing target or target + 10%

D2. RESIDENTIAL ADAPTIVE THERMOSTAT OFFERING

A \$75 instant rebate offer is provided to customers towards their purchase of a qualifying adaptive thermostat device through specific retailers.

The rebate could be obtained in one of two ways:

- • An instant point-of-purchase rebate towards the online purchase of an eligible device

OR

- • An instant point-of-purchase rebate towards the in-store purchase of an eligible device from participating Home Depot stores province-wide

D3. COMMERCIAL/INDUSTRIAL PRESCRIPTIVE OFFERING

| TECHNOLOGY | CUSTOMER INCENTIVE AMOUNT | SERVICE PROVIDER INCENTIVE AMOUNT | DISTRIBUTOR/DEALER INCENTIVE |
|---|---------------------------|-----------------------------------|------------------------------|
| Space Heating | | | |
| Air Curtain (pedestrian, no vestibule, 7'x3') | \$300 | \$100 | N/A |
| Air Curtain (pedestrian, no vestibule, 7'x6') | \$400 | \$100 | N/A |
| Air Curtain (pedestrian, no vestibule, 8'x6') | \$500 | \$100 | N/A |
| Air Curtain (pedestrian, with vestibule, 7'x3') | \$200 | \$100 | N/A |
| Air Curtain (pedestrian, with vestibule, 7'x6') | \$300 | \$100 | N/A |
| Air Curtain (pedestrian, with vestibule, 8'x6') | \$400 | \$100 | N/A |



| TECHNOLOGY | CUSTOMER INCENTIVE AMOUNT | SERVICE PROVIDER INCENTIVE AMOUNT | DISTRIBUTOR/DEALER INCENTIVE |
|--|--|--------------------------------------|---------------------------------|
| Air Curtain (shipping/dock doors, 8'x8') | \$2,400 | \$100 | N/A |
| Air Curtain (shipping/dock doors, 8'x10') | \$2,400 | \$100 | N/A |
| Air Curtain (shipping/dock doors, 10'x10') | \$4,000 | \$100 | N/A |
| Condensing Boiler (new construction, up to 299 Mbtu/hr) | \$600 | \$100 | \$50 |
| Condensing Boiler (retrofit, up to 299 Mbtu/hr) | \$1,000 | \$100 | \$50 |
| Condensing Boiler (retrofit, 300 to 999 Mbtu/hr) | \$2,000 | \$100 | \$50 |
| Condensing Boiler (retrofit, 1,000 Mbtu/hr or greater) | \$6,000 | \$100 | \$50 |
| Condensing Furnace (95% AFUE or greater) | \$200 | \$100 | N/A |
| Condensing Make-up Air (Constant speed, Minimum 1,500 CFM to maximum 14,000 CFM per unit) | \$0.30/CFM | \$100 | N/A |
| Condensing Make-up Air (2-Speed, Minimum 1,500 CFM to maximum 14,000 CFM per unit) | \$0.35/CFM | \$100 | N/A |
| Condensing Make-up Air (Variable frequency drive (VFD), Minimum 1,500 CFM to maximum 14,000 CFM per unit) | \$0.40/CFM | \$100 | N/A |
| Condensing Make-up Air (2-speed, Bonus incentives exclusively for units over 5,000 CFM. Maximum 14,000 CFM per unit) | \$0.35/CFM+\$1,500 bonus incentive per unit | \$100 | N/A |
| Condensing Make-up Air (VFD, Bonus incentives exclusively for units over 5,000 CFM. Maximum 14,000 CFM per unit) | \$0.40/CFM+\$2,500 bonus incentive per unit | \$100 | N/A |
| Demand Control Ventilation (RTU/MUA with CO2 sensor) | \$500 | \$50 | \$50 |
| Destratification Fan (20ft.) | \$1,000 | \$100 | N/A |
| Destratification Fan (24ft.) | \$1,000 | \$100 | N/A |
| Energy Recovery Ventilator (ERV) (no existing ERV and not required by code, 55% to 64% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (no existing ERV and not required by code, 65% to 74% sensible heat recovery effectiveness) | \$1.25/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (no existing ERV and not required by code 75% to 84% sensible heat recovery effectiveness) | \$1.50/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (no existing ERV and not required by code 85% or greater sensible heat recovery effectiveness) | \$1.75/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (replacement of existing ERV or new ERV required by code, 65% to 74% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (replacement of existing ERV or new ERV required by code, 75% to 84% sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| Energy Recovery Ventilator (ERV) (replacement of existing ERV or new ERV required by code 85% or greater sensible heat recovery effectiveness) | \$1.15/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (no existing HRV and not required by code, 55% to 64% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |



| TECHNOLOGY | CUSTOMER INCENTIVE AMOUNT | SERVICE PROVIDER INCENTIVE AMOUNT | DISTRIBUTOR/DEALER INCENTIVE |
|---|---|---|--|
| Heat Recovery Ventilator (HRV) (no existing HRV and not required by code, 65% to 74% sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (no existing HRV and not required by code, 75% to 84% sensible heat recovery effectiveness) | \$1.00/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (no existing HRV and not required by code, 85% or greater sensible heat recovery effectiveness) | \$1.25/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (replacement of existing HRV or new HRV required by code, 65% to 74% sensible heat recovery effectiveness) | \$0.25/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (replacement of existing HRV or new HRV required by code, 75% to 84% sensible heat recovery effectiveness) | \$0.50/CFM | \$100 | \$50 |
| Heat Recovery Ventilator (HRV) (replacement of existing HRV or new HRV required by code, 85% or greater sensible heat recovery effectiveness) | \$0.75/CFM | \$100 | \$50 |
| Condensing Unit Heaters (90% thermal efficiency or greater) | \$750 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> | \$100 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> | \$50 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> |
| Infrared Heaters (single stage) | \$300 <i>(discontinued during 2019 program year)</i> | \$100 <i>(discontinued during 2019 program year)</i> | \$50 <i>(discontinued during 2019 program year)</i> |
| Infrared Heaters (two stage) | \$400 <i>(discontinued during 2019 program year)</i> | \$100 <i>(discontinued during 2019 program year)</i> | \$50 <i>(discontinued during 2019 program year)</i> |
| Water Heating | | | |
| Condensing Boiler (new construction, up to 299 MBtu/hr) | \$600 | \$100 | \$50 |
| Condensing Boiler (retrofit, up to 299 MBtu/hr) | \$1,000 | \$100 | \$50 |
| Condensing Boiler (retrofit, 300 MBtu/hr to 999 MBtu/hr) | \$2,000 | \$100 | \$50 |
| Condensing Boiler (retrofit 1,000 MBtu/hr or greater) | \$6,000 | \$100 | \$50 |
| Ozone Laundry (based on weight of laundry processed annually. Maximum \$8,000/system) | \$0.02/lb. | \$100 | N/A |
| Ozone Laundry (bonus incentives exclusively for commercial laundry facilities. Based on weight of laundry processed annually. Maximum \$10,000/system.) | \$0.03/lb. | \$100 | N/A |
| Condensing Water Heater, Storage/Tankless (Instantaneous) (75 KBtu/hr) | \$450 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> | \$100 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> | \$50 <i>(transitioned to Distributor Discount Program in 2019 program year)</i> |
| Food Service (Commercial food preparation or processing) | | | |
| Demand Control Kitchen Ventilation (up to 5,000 CFM) | \$1,200 | \$100 | N/A |
| Demand Control Kitchen Ventilation (5,001 to 10,000 CFM) | \$3,000 | \$100 | N/A |
| Demand Control Kitchen Ventilation (10,001 to 15,000 CFM) | \$4,400 | \$100 | N/A |
| Demand Control Kitchen Ventilation (bonus incentives exclusively for retrofit units up to 5,000 CFM) | \$1,700 | \$100 | N/A |
| Demand Control Kitchen Ventilation (bonus incentives exclusively for retrofit units 5,001 to 10,000 CFM) | \$6,400 | \$100 | N/A |
| Demand Control Kitchen Ventilation (bonus incentives exclusively for retrofit units 10,001 to 15,000 CFM) | \$9,200 | \$100 | N/A |
| ENERGY STAR Dishwasher (undercounter) | \$100 | \$50 | N/A |



| TECHNOLOGY | CUSTOMER INCENTIVE AMOUNT | SERVICE PROVIDER INCENTIVE AMOUNT | DISTRIBUTOR/DEALER INCENTIVE |
|--|---|---|---------------------------------|
| ENERGY STAR Dishwasher (stationary rack) | \$200 | \$50 | N/A |
| ENERGY STAR Dishwasher (rack conveyor) | \$450 | \$50 | N/A |
| ENERGY STAR Fryers | \$600/vat (transitioned to Distributor Discount Program in 2019 program year) | \$50 (transitioned to Distributor Discount Program in 2019 program year) | N/A |
| ENERGY STAR Steam Cookers | \$300/unit (transitioned to Distributor Discount Program in 2019 program year) | \$50 (transitioned to Distributor Discount Program in 2019 program year) | N/A |
| High-Efficient Broilers | \$400/unit (transitioned to Distributor Discount Program in 2019 program year) | \$50 (transitioned to Distributor Discount Program in 2019 program year) | N/A |

Distributor Discount Program Incentives (midstream initiative)

| TECHNOLOGY | DISTRIBUTOR/DEALER INCENTIVE |
|-----------------------------------|------------------------------|
| HVAC | |
| Condensing Unit Heaters | \$750 |
| Condensing Storage Water Heaters | \$450 |
| Condensing Tankless Water Heaters | \$450 |
| Food Service | |
| ENERGY STAR Fryers | \$600/vat |
| ENERGY STAR Steam Cookers | \$1,000 |
| High-Efficiency Broilers | \$400 |

D4. COMMERCIAL/INDUSTRIAL DIRECT INSTALL OFFERING

Eligible customers are provided with the installation of shipping and receiving air doors, with approximately 80% of the total project cost covered. There is also a \$750 incentive per door when a customer confirms participation within 30 days of receiving a quote.

D5. COMMERCIAL/INDUSTRIAL CUSTOM OFFERING

In addition to technical expertise, the following financial incentives are available to participants:

| ITEM | COMMERCIAL CUSTOMERS | INDUSTRIAL CUSTOMERS |
|---|--|-----------------------------------|
| New Equipment Installation, Equipment Retrofit, and Process Optimization Projects | General Service customers (rates M1, M2, R1, and R10): \$0.20/m ³ , up to \$40,000 or 50% of incremental cost Contract customers (M4, M5, M7, T1, and R20): \$0.10/m ³ , up to \$100,000 or 50% of incremental cost | |
| Engineering Feasibility Studies | 50% of study cost, up to \$4,000 | 50% of study cost, up to \$10,000 |



| ITEM | COMMERCIAL CUSTOMERS | INDUSTRIAL CUSTOMERS |
|-----------------------------|---|---|
| Study Top-Up | Feasibility Study: 50% to a maximum of \$4,000 | Feasibility Study: 50% to a maximum of \$4,000 Process Improvement: 34% to a maximum of \$20,000 |
| Process Improvement Studies | -- | 66% of study cost, up to \$20,000 |
| Meters Installations | -- | 50% of installed cost, up to \$5,000 limit of 5 meters per year per site |
| Limited Time Offer | 20% bonus incentive for Contract customers (M4, M5, M7, T1, and R20) who complete New Equipment Installation, Equipment Retrofit, and/or Process Optimization Projects and submit applications before July 1, 2019. | |

D6. HOME WEATHERIZATION OFFERING

There is no financial cost to the participant for this offering. In addition to home energy assessments, the offering included the following measures:

- Insulation (attic, wall, basement)
- Draftproofing
- Smart thermostats
- Showerheads
- Kitchen and bathroom aerators
- CO detectors
- Smart Thermostat
- Pipe Wrap Installation

To be eligible for the offering, the participant must meet the following criteria:

- Occupant of single/semi-detached, town/row house or low-rise multi-family housing (three stories or less, as defined by Part 9 of the Ontario Building Code); and,
- Income is at or below 135% of Statistics Canada's Low-Income Cut-Off ("LICO") or participate in government assistance programs (private homeowner or tenant must heat their home with natural gas and pay their own gas bills); or,
- Tenant resides in social and assisted housing, regardless of gas bill payment responsibility.

D7. FURNACE END-OF-LIFE UPGRADE OFFERING

Participants are given a \$275 incentive per furnace upgrade. Union also provides a \$50 incentive to the service provider.

Eligibility guidelines are the same as the Home Weatherization Offering. In addition, in order to be eligible for the incentive, the furnace replacement must be in compliance with the TRM substantiation document (see Section 2.6 for more information on the TRM).



D8. INDIGENOUS OFFERING

There is no financial cost to the participant for this offering. In addition to home energy assessments, the offering included the following measures:

- Insulation (attic, wall, basement)
- Draftproofing
- Smart thermostats
- Showerheads
- Kitchen and bathroom aerators
- CO detectors
- Smart Thermostat
- Pipe Wrap Installation

A \$275 incentive is available for per furnace upgrade. Union also provides a \$50 incentive to the service provider. In addition, the furnace replacement must be in compliance with the TRM substantiation document (see Section 2.6 for more information on the TRM).

D9. MULTI-RESIDENTIAL AFFORDABLE HOUSING OFFERING



| TECHNOLOGY | CUSTOMER INCENTIVE | SERVICE PROVIDER INCENTIVE |
|--|---|---|
| Building Assessment (4 stories and higher, or, 6,400sqft and over) | \$8,000 per building, maximum of \$40,000 per housing provider per year | N/A |
| Space heating | | |
| Condensing Boilers (up to 299,000 Btu/Hr) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/boiler |
| Condensing Boilers (retrofit only; 300,000 to 999,000Btu/Hr) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/boiler |
| Condensing Boilers (retrofit only; 1,000,000Btu/Hr and over) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/boiler |
| Energy Recovery Ventilators (up to 10,000CFM) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/unit |
| Energy Recovery Ventilators (up to 20,000CFM) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/unit |
| Heat Recovery Ventilators (up to 10,000CFM) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/unit |
| Heat Recovery Ventilators (up to 20,000CFM) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/unit |
| Condensing Make-up Air (1,500CFM to 14,000CFM; includes: constant speed, 2-speed and variable frequency drive units) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/unit |
| Commercial Condensing Furnace (95% AFUE or greater) | \$400/unit | \$100/unit |
| Water heating | | |
| Condensing Boilers (up to 299,000 Btu/Hr) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/boiler |
| Condensing Boilers (retrofit only; 300,000 to 999,000Btu/Hr) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/boiler |
| Condensing Boilers (retrofit only; 1,000,000Btu/Hr and over) | \$0.10 per lifetime cubic metres saved, up to a maximum of \$15,000 | \$100/boiler |
| Condensing Gas Water Heater (storage) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/water heater |
| Condensing Gas Water Heater (tankless, instantaneous) | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | \$100/water heater |
| In-suite measures | | |
| In-suite Energy Recovery Ventilator (no existing ERV or not required by the code) | \$300/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Energy Recovery Ventilator (improved effectiveness; existing ERV or above code, 65% to 74% sensible heat recovery effectiveness) | \$100/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Energy Recovery Ventilator (improved effectiveness; existing ERV or above code, 75% to 84% sensible heat recovery effectiveness) | \$200/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Energy Recovery Ventilator (improved effectiveness; existing ERV or above code, 85% and greater sensible heat recovery effectiveness) | \$300/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Heat Recovery Ventilator (no existing HRV or not required by the code) | \$150/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Heat Recovery Ventilator (improved effectiveness; existing ERV or above code, 65% to 74% sensible heat recovery effectiveness) | \$50/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Heat Recovery Ventilator (improved effectiveness; existing ERV or above code, 75% to 84% sensible heat recovery effectiveness) | \$100/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| In-suite Heat Recovery Ventilator (improved effectiveness; existing ERV or above code, 85% and greater sensible heat recovery effectiveness) | \$150/unit | 5% of the total customer incentive per building. One service provider incentive payment per building. |
| Custom building efficiency improvements | | |
| Custom projects to reduce gas consumption in building stock, such as: Insulation Upgrades, Heat Recovery, Control Systems, Building Automation Systems | \$0.10 per lifetime cubic metres saved or up to 50% of the fully installed cost of the measure (whichever less) | N/A |



To be eligible, Part 3 buildings must be:

- Social and assisted housing, or non-profit housing; or,
- Low-income market rate multi-family (building owner or property manager confirmation that at least 50% of the properties' tenants pay less than the average market rent in that region, as determined by the Canadian Mortgage and Housing Corporation).

D10. LARGE VOLUME DIRECT ACCESS OFFERING

Incentive Guidelines:

| ITEM | INCENTIVE |
|---|--|
| Engineering Feasibility Study | 50% of the cost, up to \$10,000 |
| Process Improvement Study | 66% of the cost, up to \$20,000 |
| Steam Trap Survey | 50% of the cost, up to \$6,000 |
| Meters | 50% of the cost, up to \$5,000 per meter |
| Customer Education | Provided by or funded by Union Gas |
| New Equipment Installation, Equipment Retrofit, Process Optimization Projects and Operational Improvement | Direct Access Funded: \$0.10 per annual m ³ saved, up to \$100,000* Aggregate Pool Funded: \$0.05 per annual m ³ saved, up to \$40,000* |

*Incentive cannot exceed 50% of project cost

D11. OPTIMUM HOME OFFERING

Incentives include:

| PHASE | INCENTIVE |
|--------------------|--|
| Phase One: Design | In-kind services up to \$30,000 value per builder \$3,000 cash incentive per builder towards the prototype Discovery Home |
| Phase Two: Build | In-kind services up to \$25,000 value per builder |
| Post Phase: Retain | In-kind services up to \$15,000 value per builder |

Residential builders are eligible if they are among the top 10 regional builders in each regional territory based on the previous year's housing statistics.

D12. COMMERCIAL SAVINGS BY DESIGN OFFERING

| PROJECT PHASE | INCENTIVE | DETAILS |
|------------------|---------------------------------|--|
| Planning/Design | Services (up to \$30,000 value) | Includes IDP session and final IDP report |
| Pre-Construction | \$15,000 financial incentive | Provided upon completion of a pre-construction energy model that meets the energy performance target |
| Commissioning | \$15,000 financial incentive | Provided upon completion of a final (as-constructed) energy model that demonstrates the building meets the energy performance target |



Bonus offers:

- \$3,000 financial incentive for participants that completed the IDP workshop prior to November 30, 2019
- \$1,000 financial incentive for architects who identified eligible projects within the Union rate zones that are in the design phase and could benefit from the IDP session

To be eligible for an incentive, the submitted projects must fulfill the following criteria:

- Construction projects must have a minimum threshold of 50,000 square feet per project (including aggregate multi-location projects)
- Building(s) must be in the design phase or earlier
- Building construction must be completed within 5 years of completion of the IDP, and building must be commissioned within 1 year of construction completion
- Builders are eligible to participate in the offering multiple times for different projects

D13. RUNSMART OFFERING

In addition to technical support provided by Enbridge Gas to identify energy savings opportunities, participants are provided the following financial incentives:

| DEMONSTRATED SAVINGS | FINANCIAL INCENTIVE |
|----------------------|--|
| 5% to below 10% | \$0.20 per annual m ³ saved |
| 10% to below 15% | \$0.25 per annual m ³ saved |
| 15% or more | \$0.30 per annual m ³ saved |

Participants must consume more than 50,000 m³ of natural gas annually and must not have recently implemented energy conservation measures at their site (e.g., non-DSM participants and/or customers who have not participated in the last two years).

D14. STRATEGIC ENERGY MANAGEMENT OFFERING

| PARTICIPATION PERIOD | INCENTIVES |
|---|---|
| Year One: Start-up incentives | Up to \$25,000 to support the purchase and installation of sub-metering and data management equipment |
| | In-kind technical support from Enbridge Gas and a third-party expert |
| Year Two: Baseline incentive | Continuation of in-kind technical support, as baseline data is being collected and analyzed |
| Years Three to Five: Fixed performance incentives* | Year Three: \$10,000 for energy savings of 5% or more over baseline |
| | Year Four: \$15,000 for energy savings of 10% or more over baseline |
| | Year Five: \$20,000 for energy savings of 15% or more over baseline |

*A minimum of 5% savings compared to baseline is required to qualify for any performance incentive.

To be eligible, a participant must be a contract industrial-manufacturing customer who has not participated in Enbridge Gas' previous integrated energy management system offering, with a minimum annual natural gas usage of 1,000,000 m³, and does not have an existing energy management system (i.e., an integrated system to track, report, and plan continuous improvement energy efficiency



activities). Customers also need to enter into a participation agreement with Enbridge Gas and commit to establishing an energy performance baseline.



Appendix E: Abbreviations and Acronyms List

| | ABBREVIATION/ACRONYM | FULL NAME |
|---|---|--|
| A | AFUE Amendment 15 | Annual Fuel Utilization Efficiency NRCan's Regulations Amending the Energy Efficiency Regulations, 2016 (Amendment 15): SOR.2019-164 |
| C | CEE CEM CFM C/I CSBD | Consortium for Energy Efficiency Comprehensive Energy Management Cubic feet per minute Commercial/Industrial Commercial Savings by Design |
| D | DCKV DCP DCV Decision DSM DSM Framework DSM Guidelines DSMVA | Demand Control Kitchen Ventilation Design Phase Charette Demand Control Ventilation Decision and Order on EGD's and Union's 2015-2020 DSM Plans (EB-2015-0049/EB-2015-0029) Demand Side Management Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2014-0134) Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2014-0134) Demand Side Management Variance Account |
| E | EAC EC EEP EMIS EM&V ERV | Evaluation Advisory Committee Evaluation Contractor Energy Efficiency Plan Energy Management Information System Evaluation, Measurement, and Verification Energy Recovery Ventilation |
| H | HER HRR HRV HVAC HVLS | Home Efficiency Rebate Home Reno Rebate offering Heat Recovery Ventilation Heating, Ventilation and Air Conditioning High Volume Low Speed |
| I | IDP IESO | Integrated Design Process Independent Electricity System Operator |
| L | LICO LRAM LTO | Low-Income Cut-Offs Lost Revenue Adjustment Mechanism Limited Time Offers |
| M | Mid-Term Report | Mid-Term Review of the Demand Side Management Framework for Natural Gas Distributors (2015-2020) (EB-2017-0127 & EB-2017-0128) |
| N | NECB NRCan NTG | National Energy Code of Canada for Buildings Natural Resources Canada Net-to-Gross study |
| O | OBC OEB | Ontario Building Code Ontario Energy Board |
| P | PAC | Program Administrator Cost |
| R | REA | Registered Energy Advisor |
| S | SBC | Sustainable Building Canada |



| | ABBREVIATION/ACRONYM | FULL NAME |
|---|----------------------|-----------------------------|
| | SEM | Strategic Energy Management |
| | SO | Service Organization |
| T | TRC-Plus | Total Resource Cost Plus |
| | TRM | Technical Resource Manual |



Appendix F: Home Efficiency Rebate Offering Process Evaluation Report (Union Rate Zones)

HOME RENO REBATE PROGRAM OFFERING

UNION GAS

Final Report

Process Evaluation

October 10, 2019



ECONOLER



ABBREVIATIONS

| | |
|--------------|--|
| CEA | Certified energy auditor |
| D assessment | Pre-renovation energy assessment |
| DSM | Demand-side management |
| E assessment | Post-renovation energy assessment |
| GIF | Green Investment Fund |
| HRR | Home Reno Rebate |
| HVAC | Heating, ventilation, and air conditioning |
| IESO | Independent Electricity System Operator |
| QA | Quality assurance |
| SO | Service organization |
| Union | Union Gas |



TABLE OF CONTENTS

| | |
|---|----|
| INTRODUCTION | 1 |
| 1 PROGRAM OVERVIEW | 2 |
| 2 EVALUATION APPROACH | 6 |
| 3 EVALUATION RESULTS | 9 |
| 3.1 Program Theory and Logic Model | 9 |
| 3.2 Program Participation | 11 |
| 3.3 Participant Perspectives | 13 |
| 3.4 Service Organization and Certified Energy Advisor Perspectives..... | 19 |
| 3.5 Program Processes | 25 |
| 3.5.1 Delivery Process | 25 |
| 3.5.2 Data Tracking and Monitoring Process..... | 28 |
| 3.5.3 Program Database | 30 |
| 3.5.4 Quality Assurance | 31 |
| KEY FINDINGS AND RECOMMENDATIONS | 33 |
| APPENDIX I PROGRAM MANAGEMENT AND MARKETING STAFF INTERVIEW GUIDE | 39 |
| APPENDIX II DATA TRACKING AND REPORTING AND MARKET RESEARCH STAFF INTERVIEW GUIDE..... | 45 |
| APPENDIX III SERVICE ORGANIZATION INTERVIEW GUIDE | 50 |
| APPENDIX IV CERTIFIED ENERGY AUDITOR INTERVIEW GUIDE..... | 58 |
| APPENDIX V HRR PROGRAM OFFERING THEORY | 67 |



LIST OF TABLES

| | |
|---|----|
| Table 1: Evaluation Approach | 6 |
| Table 2: Recommendations for Improvement..... | 18 |
| Table 3: CEA and SO Suggestions for Increasing the Number of Upgrades per Participant | 21 |
| Table 4: CEA and SO Suggestions on How to Increase Uptake in the Insulation Measure | 21 |
| Table 5: CEA and SO Suggestions on How to Improve Data Tracking and Reporting | 23 |
| Table 6: SO Program Satisfaction..... | 24 |
| Table 7: CEA Program Satisfaction..... | 24 |
| Table 8: CEA and SO Suggestions on How to Improve the Program | 25 |
| Table 9: Cost-Benefit Analysis of Recommendations..... | 38 |

LIST OF FIGURES

| | |
|--|----|
| Figure 1: HRR Program Offering Logic Model..... | 10 |
| Figure 2: Annual Participation of Union Gas Customers..... | 12 |
| Figure 3: Breakdown of HRR Projects by the Number of Upgrades in Each Project..... | 12 |
| Figure 4: Sources of Program Awareness..... | 13 |
| Figure 5: Percentages of Participants who Visited Websites before Deciding to Participate in the HRR program offering | 14 |
| Figure 6: Satisfaction with the HRR Program Offering | 14 |
| Figure 7: Overall Experience with the HRR Program Offering by Month | 15 |
| Figure 8: Satisfaction with the Pre-Renovation Assessment (D Assessment) | 16 |
| Figure 9: Satisfaction with the Post-Renovation Assessment (E Assessment) | 17 |
| Figure 10: Reasons for Not Implementing the Remaining Recommended Measures..... | 17 |
| Figure 11: HRR Delivery Process Steps | 27 |
| Figure 12: HRR Data Tracking and Reporting Process | 29 |



EXECUTIVE SUMMARY

This report presents the results of the process evaluation of the Enbridge Gas Inc., operating as Union Gas (hereinafter referred to as Union),¹ Home Reno Rebate² (HRR) program offering. The HRR program offering takes a holistic approach to achieving energy savings by helping homeowners understand improvement opportunities throughout their home and encouraging them to install upgrades that generate long-lasting energy savings. To do so, the program offers financial incentives for pre-renovation energy assessments (D assessments), energy efficiency upgrades, and post-renovation energy assessments (E assessments).

Summary of the Evaluation Approach

This evaluation covers the 2018 program year from January 1 to December 31 inclusively. The main objectives of the HRR process evaluation are to:

- › Identify opportunities to improve the efficacy of program offerings and implementation efforts;
- › Determine whether the data entry and quality assurance processes are sufficiently robust, efficiencies can be gained, or enhancements need to be made.

To meet the evaluation objectives, Econoler (hereinafter the Evaluator) completed the following activities:

- › A program database and documentation review;
- › Interviews with Union program staff;
- › Interviews with service organizations (SOs) and certified energy auditors (CEAs);
- › A Union market research survey results review.

Process Evaluation Key Findings and Recommendations

The following presents an overview of the Evaluator's key findings and recommendations resulting from the Home Reno Rebate program offering process evaluation.

The HRR program offering's logic model and program theory are well documented. This documentation enables the program administrator to carefully consider likely program outcomes and ensure that the strategic approaches lead to the desired results. The Evaluator made a few adjustments to the program theory and logic model to better reflect the current program strategy. The logic model should be continuously adapted to reflect any program changes and changes in external factors. The program theory includes a few performance indicators linked to the expected long-term program outcomes, which is a good practice.

¹ As of January 1, 2019, Union Gas and Enbridge Gas Distribution were merged into one utility under the legal name Enbridge Gas Inc.

² As of May 1, 2019, the Home Reno Rebate program was rebranded with Enbridge's Home Energy Conservation program into one program called the Home Efficiency Rebate program.



Recommendation No. 1: Define additional performance indicators to correspond with the adjusted logic model and track all performance indicators linked to program objectives.

The program successfully engaged a large number of participants. The HRR program offering is designed to have a significant impact on the residential market by adhering to a whole-house approach to achieving long-term energy savings. Although achieved energy savings are not covered by the scope of this evaluation, the high uptake of the program in the marketplace and the positive feedback from partners indicate the appeal of the program offering.

The HRR program offering effectively leverages its partner network for program promotion and delivery. Union has developed a strong network of partners to promote and deliver the program. Union collaborates with SOs that work with participants through all stages of the program. SOs' work with their networks of CEAs who perform the energy assessments and collaborate with contractors who play an important role in generating participant leads. Union also contributes to program awareness through its website, advertising or bill inserts.

There is high satisfaction among partners with respect to their working relationships and communication between CEAs, SOs and Union. The HRR program offering relies on SOs and CEAs to facilitate the delivery of the program. Therefore, communication and collaboration among partners are essential. The CEAs surveyed were very satisfied with their relationship with Union (with the satisfaction levels ranging from 8 to 9 on a 10-point scale). Surveyed SOs were also very satisfied with their relationship with Union (with the satisfaction levels ranging from 8 to 10 on a 10-point scale). SOs appreciate Union's openness, availability, efficiency at providing information and quick turnaround in answering questions or responding to issues.

The program relies heavily on furnace replacements and contractor referrals, which should be considered when measuring free-ridership. Contractor referrals (mostly from HVAC contractors) are a main driver for program participation. Since contractor referrals are a key driver for program participation, it is necessary to take contractors' recommendations into account in the free-ridership measurement. Otherwise, the free-ridership level may be overestimated.

The program uses furnace replacement opportunities as an entry point into the program to engage homeowners and encourage participants to implement other measures to improve the efficiency of their home. The program data shows that 88% of HRR projects included a furnace upgrade and 79% included air sealing.

Recommendation No. 2: Investigate current practices among contractors for pairing air sealing with furnace replacements to assess what target of air sealing should remain incentivized by the program and counted in the minimum number of upgrades to be implemented.



Recommendation No. 3: When assessing free-ridership as part of the net impact evaluation, measure the influence of recommendations made by program partners (contractors and CEAs) on the types of upgrades installed by participants.

Union staff reported a low number of unconverted assessments. The program covers the cost of pre and the post-renovation energy assessments and reimburses participants upon completion of the post-renovation energy assessment, which is a good practice for maximizing the number of participants completing both the D and the E assessments. However, the number of unconverted assessments, while available in Parachute, was not tracked in the master database.

Recommendation No. 4: Track and monitor the number of unconverted assessments.

Opportunities remain for better communicating the benefits of potential upgrades. CEAs try to encourage participants to install more upgrades by educating them on potential energy and cost savings during the D assessment.

In total, 61% of participants installed the minimum number of upgrades required by the program. Participants identified financial constraints as the main barrier to not implementing the recommended measures, which was followed closely by a belief that their homes did not need the upgrades. Moreover, the only two aspects that received relatively lower satisfaction ratings from participants are related to the level of information shared about ways to reduce energy use.

The EnerGuide Homeowner Information sheet and the Renovation Upgrade Report are provided to homeowners to educate them on energy saving opportunities in their home. However, results indicate that further efforts could be made to better communicate energy assessment results in a simplified, easy to digest manner, including the benefits of potential upgrades, to minimize lost opportunities. This was also identified by the SOs and CEAs interviewed.

Recommendation No. 5: Provide CEAs with an additional tool(s) to better communicate the benefits of recommended measures, such as an online tool that allows participants to analyze the costs, rebates and benefits of the measures.

Insulation is the largest untapped opportunity for achieving gas savings in participating houses. All interviewed CEAs mentioned that insulation is one of the most frequently recommended upgrades. However, only 35% of participants installed insulation under HRR. The main recommendation from program partners on how to increase insulation uptake is to increase the rebate amount for this measure.



Recommendation No. 6: Consider ways to increase uptake in insulation upgrades, such as increasing the rebate amount or better communicating the benefits of installing insulation (as per Recommendation 5 above).

The HRR program offering provides a satisfying customer experience. Most participating customers were very satisfied with their overall experience with the HRR program offering, the ease of participating in the program and their interactions with the CEA during both assessments. Union's market research results show that overall satisfaction with the program varied somewhat among SOs. Union provides feedback to SOs on how they compare to their peers.

Recommendation No. 7: Continue to monitor participant satisfaction among SOs to respond quickly to any changes in satisfaction levels.

Length of time to receive payment impacts participant satisfaction. Union's market research findings show that overall satisfaction with the program declines when payment is received later than expected. Reducing the time for issuing the rebate, as suggested by 15% of surveyed participants, could therefore increase overall satisfaction with the HRR program offering. Several factors impact the time required for issuing the rebate and Union has taken steps to target a number of these factors. Union staff and SOs both indicated that delays occur when there is confusion in identifying the right person to receive program rebate.

Cheques are issued at the end of the participation process, after the project application has been fully approved. Union aims to have cheques mailed out to participants 120 days after submission of the E assessment. However, other steps to be completed before submitting the E assessment sometimes result in delays. Customers do not receive automatic updates on their application status. If customers are curious about the status of their cheque, they may contact Customer Care or their CEA.

Recommendation No. 8: Consider ways to identify the correct program participant to avoid delays in processing applications, for example, by validating participant information earlier in the participation process (i.e. during the D assessment).

Recommendation No. 9: Provide customers with notices when their project application is received and approved.

The program data tracking, monitoring and reporting process is complete and effective and follows best practices. The process is automated where possible and utilizes tools that provide automatic checks, error flags and warnings. Union has updated processes to adapt to increased project volume and continuously reviews and improves processes to accommodate program changes and implement any efficiencies to streamline processes.

The Parachute system meets the data needs of SOs and Union. Both CEAs and SOs are satisfied with the Parachute system and Union's data-tracking and reporting process. Union staff also reported satisfaction with the Parachute system because it improves data integrity and consistency, allows for efficient resolution of data discrepancies with SOs and CEAs and improves the ability to plan based on the volume of applications.



The data reporting process among SOs is inconsistent. The Evaluator found inconsistent practices among SOs. First, some SOs have project files approved by NRCAN prior to inputting the data into Union's Parachute system while others do not. Second, there are inconsistencies among SOs in whether issues identified during the NRCAN review are corrected in Parachute or not. Submitting files to Union prior to NRCAN's review is seen as a way to reduce delays in the project approval process. However, the practices should be consistent among SOs.

Recommendation No. 10: Make SO practices for NRCAN file approval consistent. If the program data is inputted into Union's Parachute system prior to NRCAN approval, monitor a sample of project files and NRCAN-approved files, sampled over at least a year, to confirm that the difference between the two groups of files is minor and no adjustment is needed.

The master database³ is well organized and clear and contains the main information required for program management and evaluation purposes. Several pieces of information, although not essential, could be added to support program monitoring and track potential lost opportunities.

The process of adding projects to the master database involves copy-pasting project information into the file and might thus introduce errors.

Recommendation No. 11: Add information to the master database to support program monitoring and planning, as well as a future program strategy. More specifically:

- › Include all the recommended measures and their savings potential shown in the D assessment to enable a better understanding of the measures that have not been implemented by participants to inform future program design and marketing strategies.
- › Include the overall savings potential from the D assessment.

Recommendation No. 12: Add safeguards in the master database to reduce the risk of introducing errors. Consider locking formulas in the spreadsheet so that they cannot be tampered with accidentally (e.g. locking the savings formulas in Columns DV and DZ).

The HRR QA protocol is sufficient with some room to improve consistency among SOs. The HRR program offering largely relies on NRCAN QA processes to ensure data quality and integrity. All SOs interviewed each have a designated QA specialist and reported following NRCAN's protocol in conducting internal QA audits. All interviewed SOs followed the documentation retention protocols in Union's SO agreement. However, only one of the three SOs had a written QA process and there were some inconsistencies in how errors found in NRCAN's QA audits were corrected in Union's system. A 2018 QA activity performed by Union found differences of less than 2% between NRCAN's file data and Parachute.

Recommendation No. 13: Ensure that SOs consistently follow the QA guidelines in SO agreements and that practices for making corrections based on QA audits are consistent among SOs.

³2018 RHRR MASTER FILE FINAL-For Econoler.xls.



INTRODUCTION

Enbridge Gas Inc., operating as Union Gas (Union),⁴ has administered demand-side management (DSM) programs in the province of Ontario for the last 20 years. Union programs are meant to help Ontarians improve the energy efficiency of their homes and workplaces by installing high-efficiency equipment and changing their behaviours to become more energy efficient.

Econoler was engaged by Union to evaluate its residential program, the Home Reno Rebate (HRR) program offering.⁵ Union works in collaboration with service organizations (SOs) and certified energy advisors (CEAs) across the province to deliver the program and offer rebates on energy-efficient measures and products such as insulation, air sealing, heating systems and windows. This evaluation focuses on assessing the HRR program offering and implementation, as well as determining if the processes for data tracking, reporting, and quality assurance are adequate and sufficient. This evaluation covers the 2018 year from January 1 to December 31 inclusively.

Econoler (hereinafter the Evaluator) was in charge of coordinating and supervising all evaluation activities, developing data-collection instruments, conducting in-depth interviews, as well as preparing the evaluation report.

⁴ As of January 1, 2019, Union Gas and Enbridge Gas Distribution were merged into one utility under the legal name Enbridge Gas Inc.

⁵ As of May 1, 2019, the Home Reno Rebate program was merged with Enbridge's Home Energy Conservation program into one program called the Home Efficiency Rebate program.



1 PROGRAM OVERVIEW

Program Goals and History

Launched by Union in 2012, the HRR program offering takes a holistic approach to achieving energy savings by helping homeowners understand improvement opportunities throughout their home and encouraging them to install upgrades that generate long-lived energy savings. To do so, the program offers financial incentives for pre-renovation energy assessments (D assessments), energy efficiency upgrades, and post-renovation energy assessments (E assessments).

The HRR program offering also provides energy information to customers through the energy assessment and is therefore a critical vehicle of energy literacy among Union residential customers. At the onset of the program in 2012, Union customers had to have a natural gas furnace or boiler to be eligible for the HRR program offering. In 2016 and 2017, Union coordinated with the Government of Ontario and the Independent Electricity System Operator (IESO) to respectively offer the Green Investment Fund (GIF) and the Whole Home Pilot in conjunction with the HRR program offering. These partnerships provided the opportunity for Union and its partners to enhance the existing HRR program offering, increase participation regardless of home heating fuel types, and support activities that also reduce electricity consumption in retrofitted homes. These partnerships expanded the reach of the program into the following markets:

- › GIF extended eligibility to homes that use oil, propane or wood as their primary heating fuel and incremental natural gas customers.
- › The Whole Home Pilot expanded the target market to include electrically heated homes.

In addition, through the Whole Home Pilot, all qualifying HRR participants could receive rebates on electric ENERGY STAR® appliances, including refrigerators, freezers, dehumidifiers, window air-conditioners, clothes washers and electrically commutated motors on central heating or air-conditioning systems. The GIF funding also allowed Union to launch a behavioural offering, as well as provided increased incentives on HRR eligible measures, a rebate of \$100 on smart thermostats to all qualifying participants, and a rebate for air source heat pumps (ASHP). Since the Whole Home Pilot and GIF funding ended on October 1, 2018 and November 1, 2018 respectively, the HRR program offering has now gone back to the reduced incentive levels, for which only Union customers with natural gas heating systems are eligible.



Program Eligibility

The HRR program offering is available to Union residential customers living in detached and semi-detached, as well as townhouses and mobile homes with natural gas furnaces or boilers as the main heating source. To be eligible for the HRR program offering, participants must install at least two of the following energy upgrades or products:

- › Attic insulation;
- › Exterior wall insulation;
- › Basement wall insulation;
- › Air sealing;
- › Window, door and skylight replacements with a certified ENERGY STAR model;
- › High-efficiency natural gas furnace or boiler;
- › High-efficiency natural gas water heater.

Program Incentives

The HRR program offering offers up to \$550 to cover the cost of the pre and post-renovation energy assessments. The cost is reimbursed to participants upon completion of the post-renovation energy assessment and approval of the project application.

For all the eligible upgrades installed, prescriptive rebates are available, thus allowing participants to know exactly how much they will receive from the program. Union established the rebates by balancing the amounts in proportion to the incremental cost and the savings potential of the measures.

Since 2016, customers completing more than two upgrades also qualify for a \$250 bonus for each additional upgrade installed to encourage them to achieve more energy savings. The bonus rebate did not apply to smart thermostats, air source heat pumps in non-electrically-heated home or the measures introduced through the Whole Home Pilot.

In 2016, the maximum rebate payment (the cap) for each home ranged from \$2,500 to \$5,000, which was the sum of all the assessment costs, measure rebates and the bonus rebate, where applicable. The \$5,000 maximum did not apply to smart thermostats, air source heat pumps or the measures introduced through the Whole Home Pilot.



Program Delivery and Partners

Over the years, Union has developed a strong network of partners to deliver the HRR program offering. Union collaborates with 10 SOs, which work with participants through all stages of the program, educating them on the program, scheduling and delivering D and E assessments and providing results to Union. SOs work with their network of CEAs who conduct energy assessments, identify potential energy-saving measures and prepare a report for and deliver it to participants. SOs also collaborate with contractors, educating them on the program because contractors are a key generator of participant leads.

Homeowners can register by phone by contacting a SO in their area that pre-qualifies customers and provides additional program information. Once eligibility is confirmed, homeowners are scheduled for a pre-renovation assessment with a CEA who then visits the home to perform the pre-renovation assessment, including a blower door test.

During the pre-renovation assessment, the CEA collects information about the home to determine current home energy use and profile and develop a list of potential upgrades that could be eligible for incentives. Based on the pre-renovation energy assessment, the CEA prepares a report for the customer, recommending applicable energy upgrades. The customer then hires a contractor to implement at least two of the upgrades recommended. Customers may also complete the work themselves. Following completion of the upgrades, the customer contacts the SO that completed the pre-renovation assessment to conduct a post-renovation energy assessment. This second assessment must be completed within 120 days after the first assessment. The CEA calculates the new home energy rating, using Natural Resources Canada's EnerGuide Rating System, and then provides the data to their SO to be submitted to Union or directly submits the data to Union. Union verifies and reviews the application. Once the application is approved, the homeowner is mailed a rebate cheque for the qualifying upgrades implemented in the home.

Program Marketing and Outreach

Over the years, Union has used traditional marketing tactics, such as mass media and targeted promotions, to create awareness among its customers and encourage program participation. Union has also provided SOs with promotional materials, training and ongoing engagement and coaching to help them deliver the HRR program offering and generate participant leads.

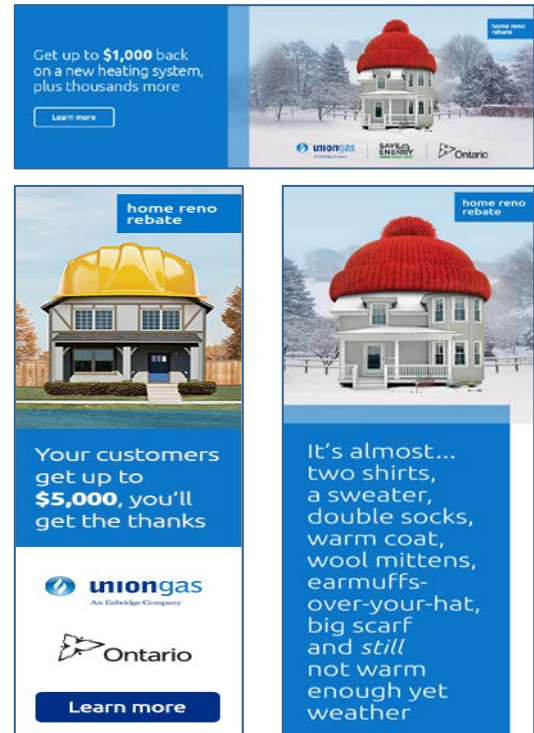
In the spring of 2018, Union focused on digital marketing as its primary marketing tactic. The objective was to raise customer awareness about undertaking a D assessment prior to starting any work to generate awareness about the offering and, in turn, more fulsome knowledge of the opportunities in the home to facilitate a holistic approach that includes energy efficiency; in the fall, the focus was to generate increased program take-up as the weather got colder.



Home Reno Rebate Program Offering
 Union Gas
 Final Report

Union used the following marketing tools and tactics:

- › Newspaper and radio advertisements in major cities across Union's program delivery area;
- › Digital tactics, including targeted Facebook posts, LinkedIn ads, YouTube ads and online banner advertisements on websites;
- › Search engine marketing to ensure the HRR website was prominently displayed when key words were searched;
- › Bill inserts;
- › Flyers and door hangers, distributed by SOs and CEAs;
- › Posters for use at various trade shows and events;
- › Print advertisements in several industry-specific publications, such as Canadian Contractor, Contracting Canada, Contractor Advantage, and Renovation Contractor.





2 EVALUATION APPROACH

The main objectives of the HRR evaluation are as follows:

- › Identify opportunities to improve the efficacy of the program offering and implementation efforts;
- › Determine if the processes for data entry and quality assurance are sufficiently robust or whether efficiencies can be gained or enhancements need to be made.

The Evaluator identified key research questions aimed at achieving the aforementioned objectives. Table 1 below outlines the evaluation objectives and maps them to the research questions and methods. The evaluation focused on participants' perspectives and projects of Union customers only because, starting November 1, 2018, non-Union customers were no longer eligible for the HRR program offering.

Table 1: Evaluation Approach

| Evaluation Objective | Research Question | Method |
|--|--|--|
| Program offering and implementation | Are there opportunities to improve the efficacy of the program offering, including eligibility requirements? | <ul style="list-style-type: none"> › Union staff interviews › SO interviews › CEA interviews › Program documentation review › Union Market Research survey results review |
| | Are there opportunities to improve program awareness and communications? | |
| | Using Union's Market Research results, what is participant satisfaction with the program, including impacts of the postal strike on customer satisfaction? | |
| | What, if any, are the difficulties or barriers to program delivery? | |
| | What is partner satisfaction with the program, including their interactions with Union and SOs? | |
| Data tracking, processes and quality assurance | Is the program administration and delivery approach, including activities of SOs, internal processes, and risk mitigation, effective and efficient? | <ul style="list-style-type: none"> › Union staff interviews › SO interviews › CEA interviews › Program documentation review › Union Market Research survey results review |
| | Is the program theory and logic model complete and relevant? | |
| | Is program tracking, monitoring, and reporting complete and effective? | |
| | Does the CEA-facing system meet the data needs of CEAs and Union? | |
| | Do the quality control and assurance measures in place ensure program data integrity? | |
| | Are program processes consistent with program intentions? | |
| | Do the SOs adhere to the documentation retention protocols outlined in Union's agreements with SOs? | |



The Evaluator first held a kick-off meeting with Union staff and conducted a preliminary program documentation review to learn about the main program components and mechanisms and inform the data-collection instruments. Then, specific evaluation activities were undertaken as described in the following subsections.

Union Staff Interviews

The Evaluator conducted interviews with program staff responsible for program management, market research, data tracking, and reporting. The interviews provided insight into the program offering and delivery, marketing methods, participant and partner experiences, program processes, data tracking, as well as reporting and quality assurance.

The guides used for the interviews are outlined in Appendix I and Appendix II.

SO Interviews

Union provided the Evaluator with a list of SOs participating in the HRR program offering, from which the Evaluator selected the three organizations with the highest number of applications. All three responded to our request for an interview. Altogether, they accounted for over 60% of all 2018 applications.

The respondents were guaranteed confidentiality so that the information they provided does not identify themselves or their organizations. Responses are provided in the following section to show the opinions expressed through the interview process. These passages represent respondents' views only and it may not be accurate to draw population-wide conclusions considering the small sample size.

The guide used for conducting the interviews with SOs is outlined in Appendix III.

CEA Interviews

Union provided the Evaluator with a list of CEAs participating in the HRR program offering, among whom the Evaluator intended to select and interview five. The Evaluator randomly selected three CEAs from each of the largest SOs and two CEAs from every other SO, for a total of 18 CEAs. Then, this list was shortened to nine CEAs by removing those CEAs who no longer work for a SO. Five CEAs responded to our request for an interview. Altogether, they accounted for 5% of all the 2018 applications.

The respondents were guaranteed confidentiality so that the information they provided does not identify themselves or their organizations. Responses are provided in the following section to show the opinions expressed through the interview process. These passages represent the prevailing views held by the interview respondents only; it may not be accurate to draw population-wide conclusions considering the small sample size.

The guide used for conducting the interviews with CEAs is outlined in Appendix IV.



Program Documentation Review

The Evaluator reviewed the following program documents and sources of information as part of this assignment:

- › Union website;
- › Union DSM Annual Report;
- › Union 2015-2020 DSM Plan;
- › Program theory and logic model;
- › Program data process;
- › Program full process;
- › Program database;
- › NRCan EnerGuide quality assurance procedures;
- › Program terms and conditions;
- › Service organization agreement;
- › Participant acknowledgement form;
- › Program marketing material.

Union Market Research Survey Results Review

The Evaluator reviewed Union market research on the HRR program offering. From February 2018 to January 2019, NRG Research conducted a survey with 1,672 customers and 662 non-customers who participated in the HRR program offering. Participants were contacted by telephone in the calendar month after the month that their rebate cheque was mailed out to them by Union.

The data collected was reported monthly, based on the month the interview took place. The following chart illustrates the participation process steps before the interview date:





3 EVALUATION RESULTS

This section presents the results of the process evaluation, provides a review of the program theory and logic model, presents an analysis of 2018 program participation as well as the participants', SOs' and CEAs' perspectives, and reports on the findings on program processes.

3.1 Program Theory and Logic Model

A logic model is a diagram representation that illustrates the causal links between program activities and the likely outputs and outcomes in the market, while the program theory describes these causal links in words. The logic model should reflect the current program strategy and is therefore expected to evolve to reflect program changes and adapt to changes in external factors. Illustrating the program logic can reveal deficiencies in program focus or effort and help ensure that all those involved know what the program seeks to accomplish. In addition, the logic model for which performance indicators have been established is a relevant management tool for monitoring intended program outcomes.

The HRR program offering has a well-documented program theory and logic model that describes how the program is expected to work and how it contributes to the intended or observed outcomes. Developed at the program design stage, the theory and model illustrate the intended program strategy. To better illustrate the current program strategy, the Evaluator made a few adjustments to the program theory and logic model, including the following three most noteworthy changes:

- › Better illustration of the role of contractors in generating participant leads. Initially, this responsibility was planned to be more on the SO side.
- › Addition of the post-renovation assessment (the E assessment) as an intermediate outcome.
- › Integration of the educational part of the program in the form of a long-term outcome.

The updated logic model is depicted in Figure 1 below.

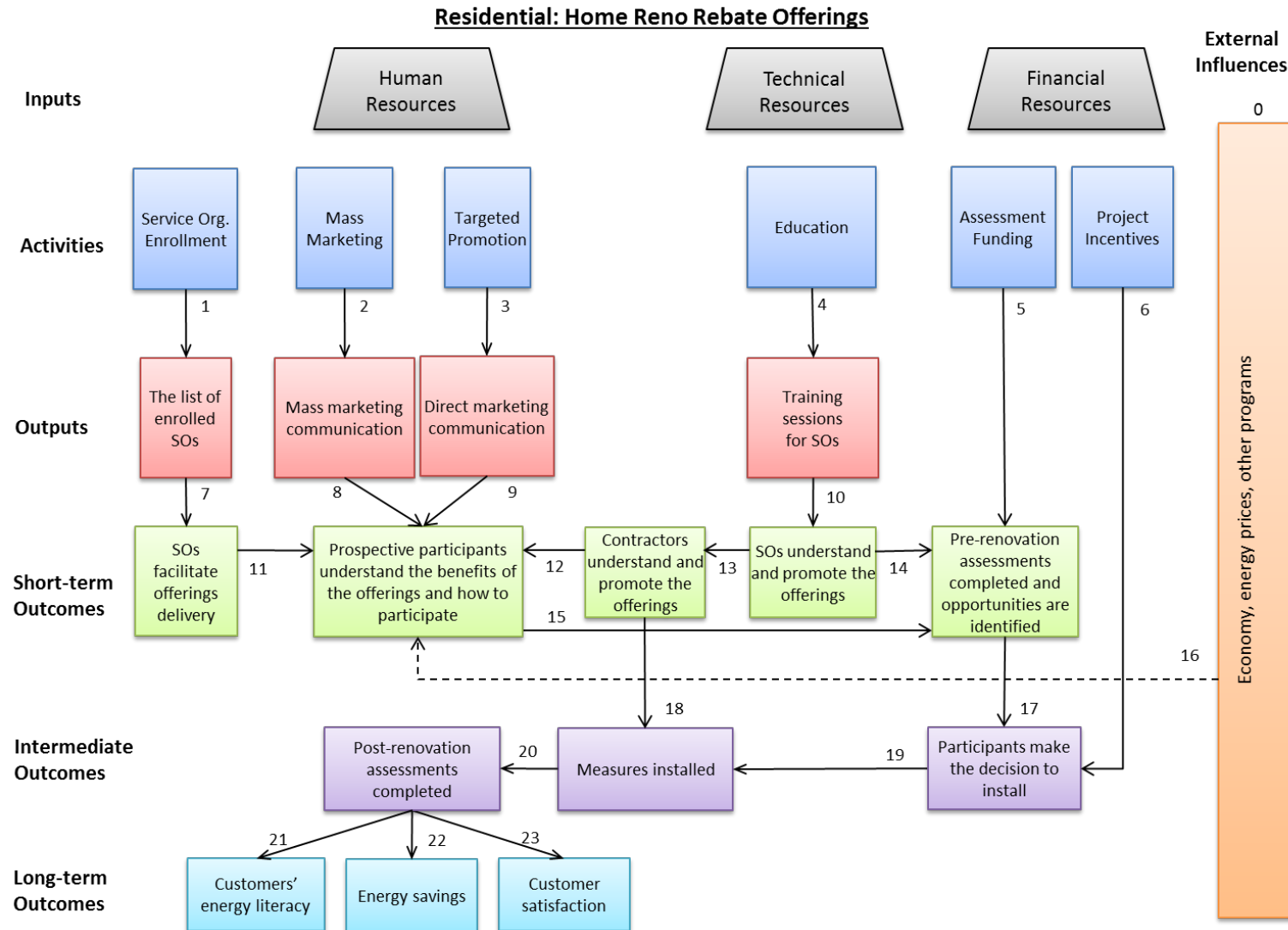


Figure 1: HRR Program Offering Logic Model



The program theory includes performance indicators for the long-term expected program outcomes, which is good practice. To improve program management, the Evaluator suggests adding other performance indicators to track and monitor expected program outcomes. These performance indicators are based on the outcomes outlined in the logic model and are expected to not only help quantify program objectives and outcomes, but also facilitate regular follow-up and monitoring. All the performance indicators and monitoring approaches should be included in the program documentation. Such indicators include the conversion rate between the D and E assessments, the number of energy efficiency measures installed per participant, the number of E assessments completed, and participant literacy about their homes' energy efficiency. Union currently tracks a number of these indicators; however, new indicators should be tracked and all indicators should be monitored for program management. The updated program theory is presented in Appendix V.

3.2 Program Participation

The HRR program offering has had significant uptake and has consistently met the cumulative natural gas savings targets set in Union's 2015-2020 DSM Plan. From January 2018 through December 2018, a total of 16,118 projects were completed by Union customers and their applications were submitted and approved in this period. These projects are those completed by Union customers with natural gas heating systems and do not include any additional projects attributed to GIF or the IESO Whole Home Pilot. As presented in Figure 2 below, Union Gas customer participation has grown significantly since 2015. The onset of additional incentives available for Union customers from the GIF program and IESO Whole Home Pilot was a key driver for increased participation in 2017 and 2018. Furnaces and air sealing were the top two types of upgrades installed in 2018.

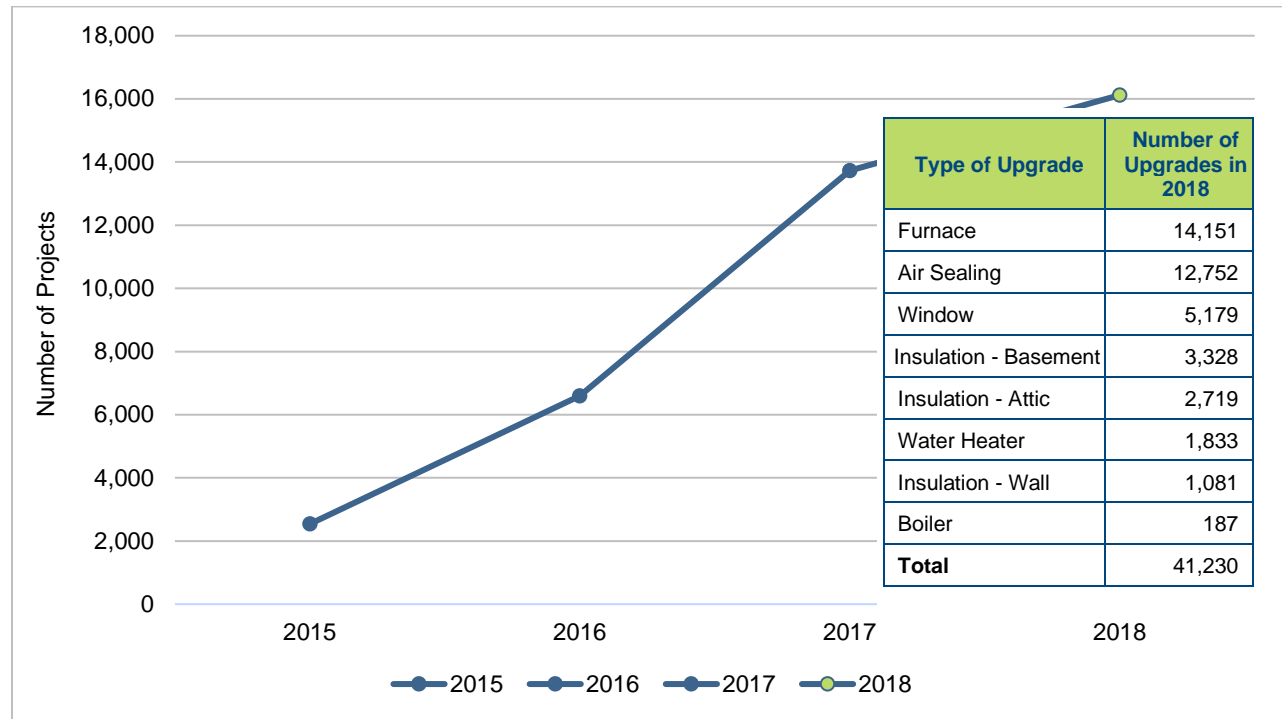


Figure 2: Annual Participation of Union Gas Customers

Figure 3 below breaks down completed projects by the number of upgrades installed in each individual project. More than half of participants (61%) installed the minimum number of upgrades required by the program. On average, 2.6 upgrades were installed in each project.⁶

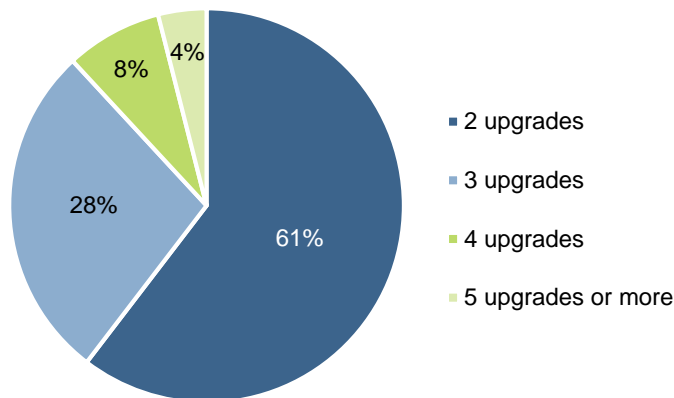


Figure 3: Breakdown of HRR Projects by the Number of Upgrades in Each Project

⁶ This average does not include smart thermostats, which were solely GIF funded or IESO funded measures.



Overall, 88% of energy efficiency projects included a furnace upgrade and 79% included air sealing. The majority (69%) of projects included both furnace and air sealing. Insulation was implemented in 35% of projects. The average cost of upgrades (not including incentives) installed was \$8,148.

3.3 Participant Perspectives

The following subsections present the main findings of the survey conducted and analyzed through Union's market research. In all, 1,672 Union customers who participated in the HRR program offering were surveyed.

Program Awareness and Outreach

Half of participants (50%) learned about the program from a contractor or professional, mostly HVAC contractors, indicating that the latter are a key entry point into the program. As outlined in Figure 4 below, Union also contributed to program awareness through its website, advertising, or bill inserts.

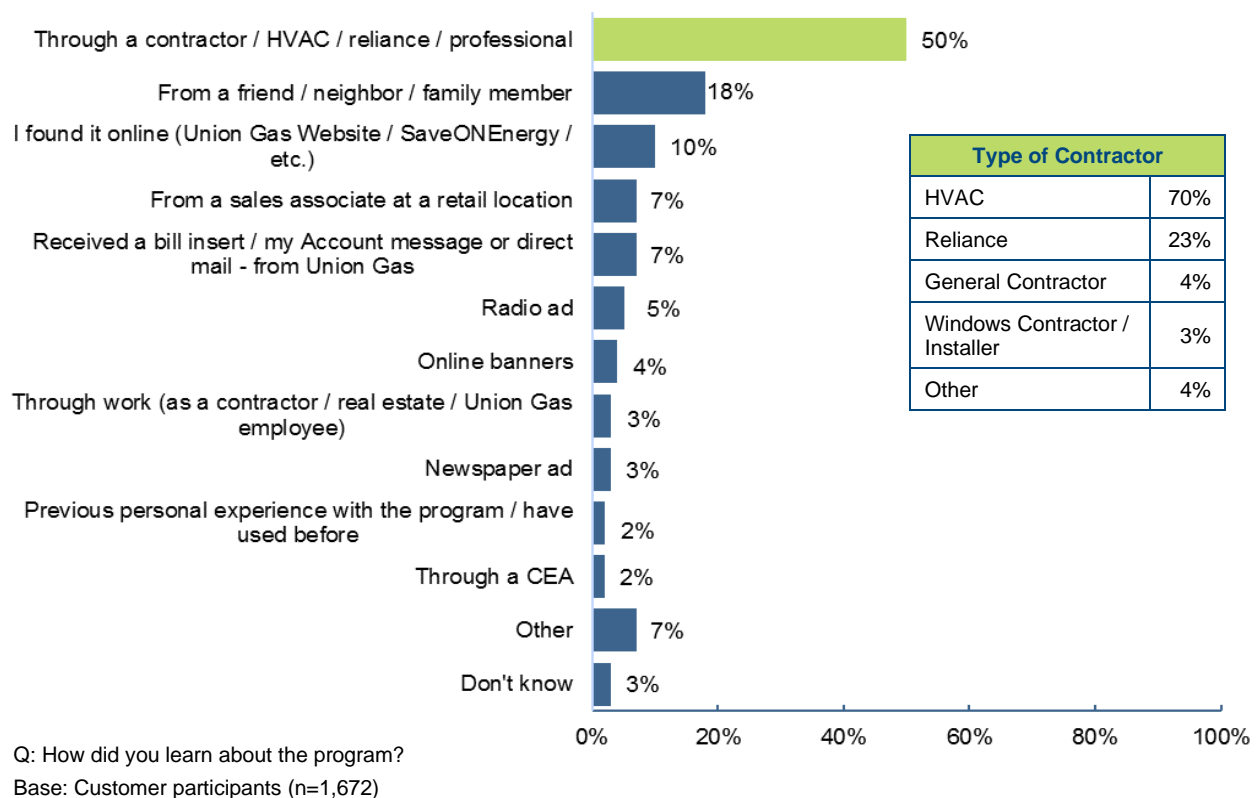
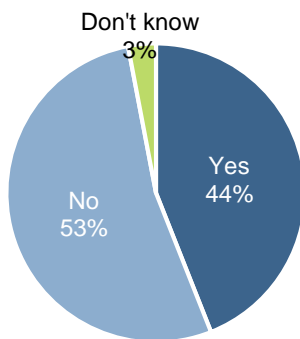


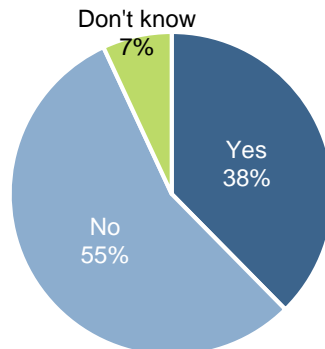
Figure 4: Sources of Program Awareness

Websites are a key source of information for participants; just over half of participants visited at least one of the three websites listed below prior to deciding to participate in the program. The Union website was visited by 44% of participating customers.

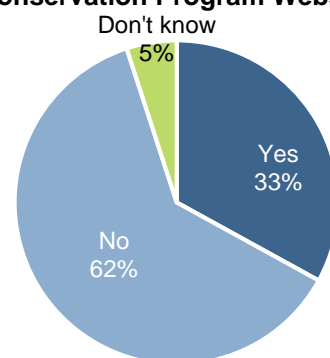
Union Gas Website



SaveON Energy Website



Ontario Home Energy Incentive Conservation Program Website



Q: Before deciding to participate in the HRR program offering, did you visit the SaveON Energy website for more information? Visit the Union Gas website for more information? Visit the Ontario Home Energy Incentive Conservation Program website for more information?

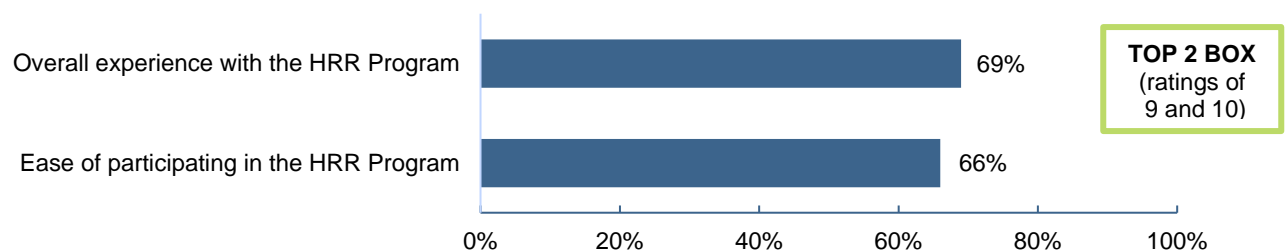
Base: Customer participants (n=1,672)

Figure 5: Percentages of Participants who Visited Websites before Deciding to Participate in the HRR program offering

Satisfaction

Participants were asked about their satisfaction with the overall program and specific aspects of the pre and post-renovation assessments. The following figures present only the top two boxes, or ratings of 9 and 10 on a 10-point scale where 1 means “very dissatisfied” and 10 means “very satisfied”.

The HRR program offering achieved a very high level of satisfaction. Indeed, 69% of participating customers were very satisfied with their overall experience with the HRR program offering. Two-thirds (66%) were also very satisfied with the ease of participating in the program. Union’s market research reports that satisfaction results vary somewhat by SO, which suggests that there may be opportunities to share best practices across organizations.



Q: Thinking about your overall experience, how satisfied were you with the following? Please use a scale from 1 to 10 where 1 means “Very Dissatisfied” and 10 means “Very Satisfied”.

Base: Customer participants (n=1,672)

Figure 6: Satisfaction with the HRR Program Offering



The survey results were analyzed by month to see if the 2018 Canada Post strike⁷ had a negative impact on participant satisfaction. The Evaluator looked at participating customers who were interviewed in December 2018 and January 2019 (i.e. whose cheque had been sent in November and December 2018) because they would have been most likely to be affected by the strike. The results indicate that the postal workers' strike did not impact overall satisfaction with the HRR program offering. Figure 7 below indicates that most participants interviewed in December 2018 and January 2019 expressed a very high level of satisfaction with their overall experience with the HRR program offering. Figure 7 also reveals that participating customers who were interviewed in June 2018 and September 2018 (i.e. whose cheque had been sent in May and August 2018) were less likely to be very satisfied with their overall experience with the HRR program offering. Decreases in satisfaction observed in June and September 2018 likely related to certain cheques arriving later than expected.

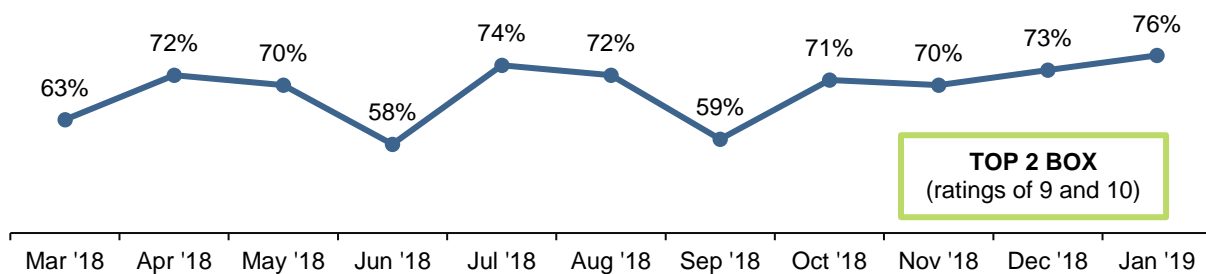
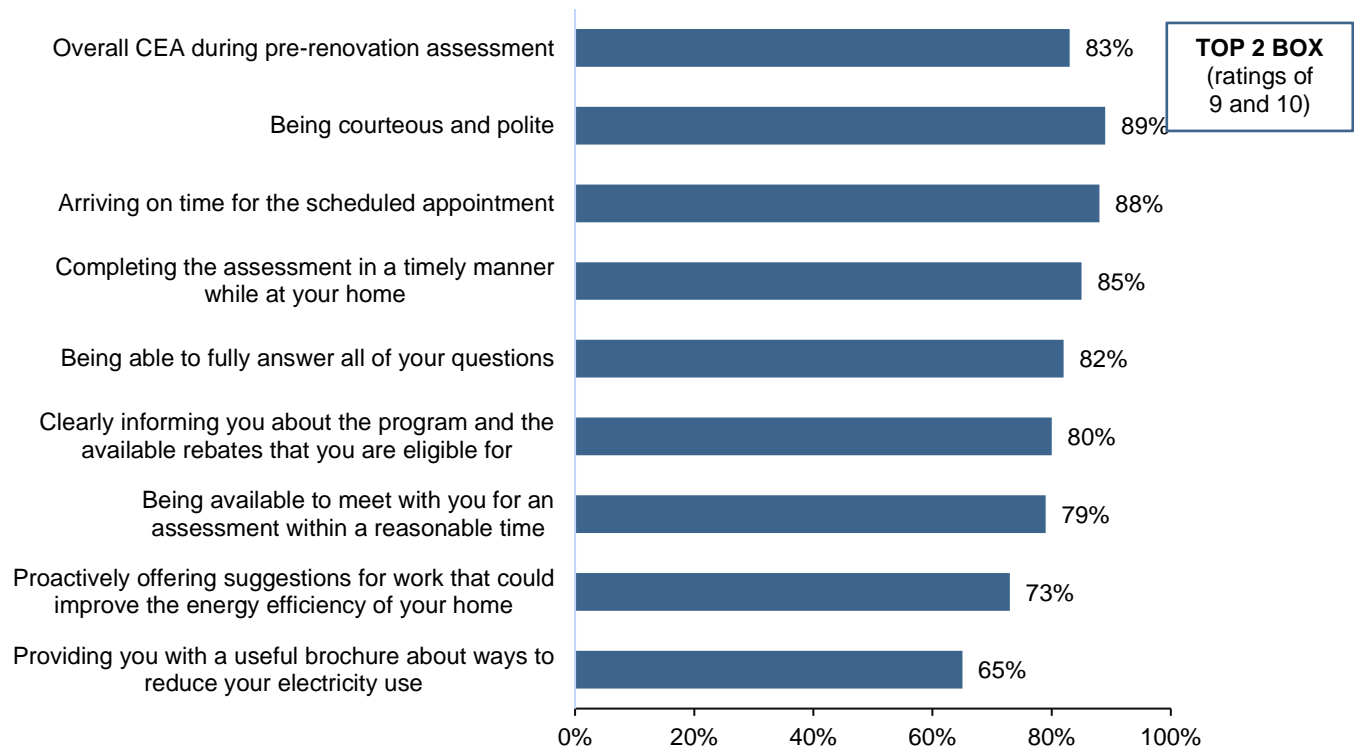


Figure 7: Overall Experience with the HRR Program Offering by Month

Participants were asked about their satisfaction with specific aspects of their interaction with the CEA during the pre-renovation assessment (D assessment). Overall, most customers (83%) were very satisfied with the CEA who came to their home to conduct the D assessment. Most were very satisfied with the courtesy demonstrated by the CEA (89%), the CEA's punctuality (88%), and completion of the assessment in a timely manner (85%). As shown in Figure 8 below, the two aspects that received relatively lower positive ratings relate to the level of information shared about ways to reduce electricity use.

⁷ The Canada Post strike began on October 22, 2018 and ended on November 27, 2018.

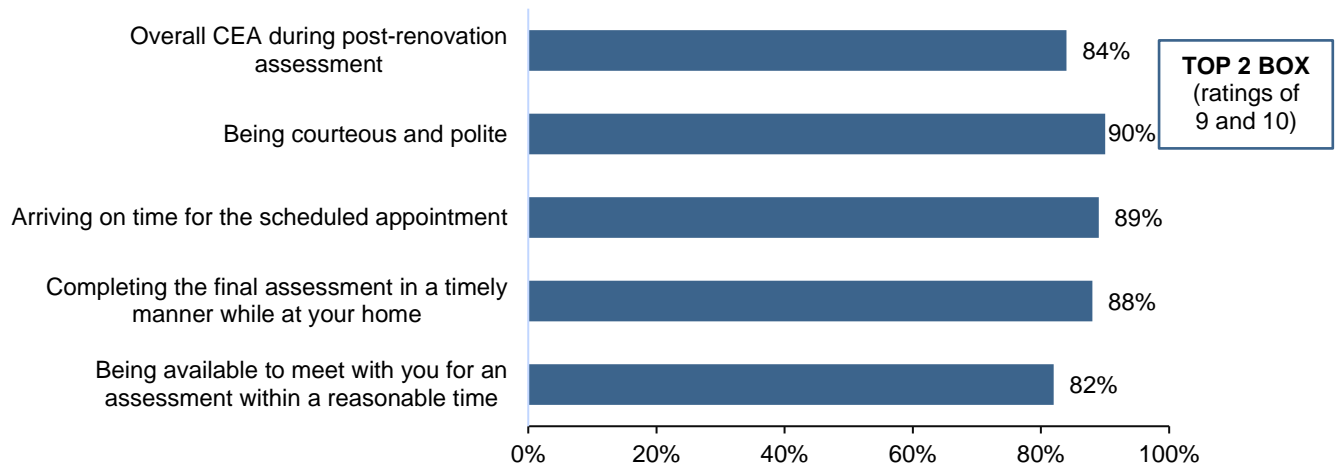


Q: Thinking about the CEA who came to the home for the pre-renovation assessment, how satisfied were you with the following aspects of service? Q: And just thinking about the pre-renovation assessment, done before the renovation work, how satisfied, overall, were you with the CEA?

Base: Customer participants who dealt with a CEA

Figure 8: Satisfaction with the Pre-Renovation Assessment (D Assessment)

Respondents were also asked about their satisfaction with specific aspects of their interaction with the CEA during the post-renovation assessment (E assessment). Again, customers were satisfied overall (84%) with the CEA who came to their home to conduct the E assessment. The survey results indicate a high level of satisfaction with the courtesy demonstrated by the CEA (90%), the CEA's punctuality (89%), and completion of the assessment in a timely manner (88%).



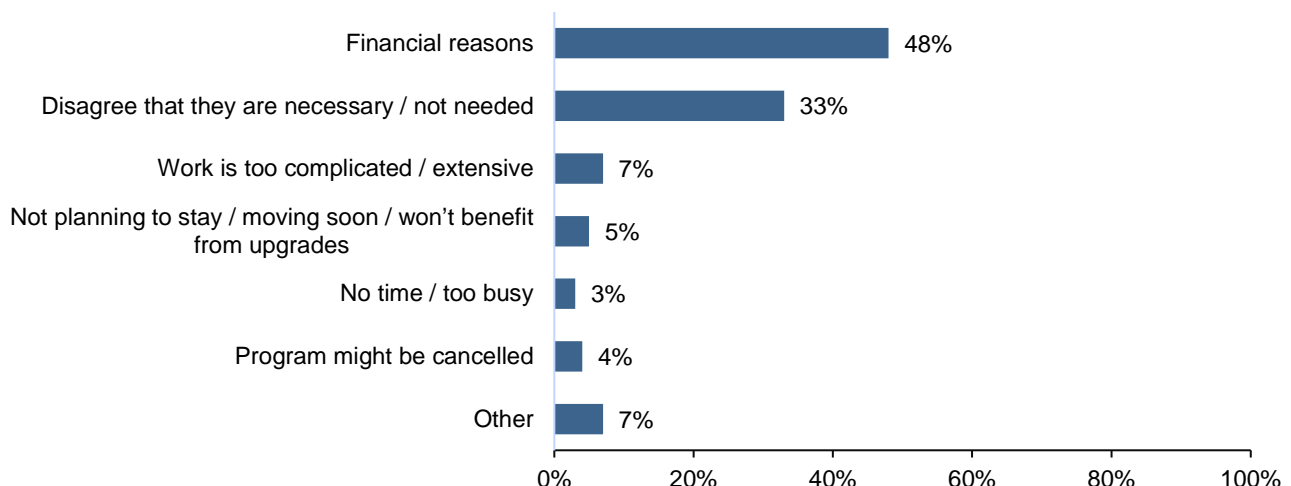
Q: Thinking about the CEA who came to the home for the post-renovation assessment, how satisfied were you with the following aspects of service? Q: And just thinking about the post-renovation assessment, how satisfied, overall, were you with the auditor?

Base: Customer participants who dealt with a CEA

Figure 9: Satisfaction with the Post-Renovation Assessment (E Assessment)

Barriers

Among the reasons cited by participants who chose not to complete all the recommended measures, 48% identified financial constraints as the major barrier and 33% believed that their home did not need the upgrades (see Figure 10 below). These results indicate that further efforts could be made to better inform participants about energy assessment results, including the benefits of potential upgrades, to minimize lost opportunities.



Q: What would you say is the reason that you do not intend to complete the remaining recommended measures in the next 12 months?

Base: Customer participants who received a report (n=248)

Figure 10: Reasons for Not Implementing the Remaining Recommended Measures



Participant Recommendations for Improvement

Nearly half of respondents (48%) made no recommendations on how to improve the program. Respondents who did make suggestions recommended receiving the rebate more quickly (15%), improving customer service (8%), increasing the rebates (8%) and advertising the program more or in a better way (7%).

Union's market research findings highlight that overall satisfaction with the program declines when payment arrives later than expected. Reducing the time for issuing the rebate, as suggested by 15% of surveyed respondents, could help increase overall satisfaction with the HRR program offering. However, the Evaluator notes that the satisfaction level with the HRR program offering is already high.

Table 2: Recommendations for Improvement

| Recommendations | Proportion of Respondents |
|--|---------------------------|
| Receive the rebate more quickly / Less wait after work is completed | 15% |
| Improve customer service (communication, service, knowledge, etc.) | 8% |
| Larger rebates / Raise the maximum rebate / More eligible items | 8% |
| Advertise more / Make it more visible | 7% |
| Keep the program / Concerned provincial gov't will shut down the program | 5% |
| More information regarding process/timelines | 5% |
| Improve rebate process (mistakes, lost papers, etc.) | 5% |
| Use better contractors / Not satisfied with work done/recommend contractors | 3% |
| More detailed reports/assessments / More info regarding usage | 2% |
| Free assessment / Less costly | 2% |
| Improve website / Not user-friendly | 1% |
| Longer time window to complete process / 3 months is not enough | 1% |
| Faster assessment / Less wait for appointment | 1% |
| Improve application process / Easier application | 1% |
| Faster approval / Long wait after assessment | 1% |
| Other | 3% |
| No improvements / Everything was good / Satisfied with the program | 48% |
| Q: Thinking about your entire experience with the Home Reno Rebate program, do you have any comments or suggestions for improvement of the program? Base: Customer participants (n=1,672) | |



3.4 Service Organization and Certified Energy Advisor Perspectives

This section presents the findings from the in-depth interviews held with SOs (n=3) and CEAs (n=5) that were involved in implementing HRR projects in 2018. The interviews were conducted with managers from the SOs.

For CEAs, each interviewed CEA worked for a different SO, thus representing a broad range of experiences. All five CEAs reported that conducting energy assessments is their primary occupation and that they have been involved with the program for at least over one year.

Program Outreach

All interviewed SOs and CEAs reported that the vast majority of program participants learned about the program through contractors, notably when looking at the possibility of installing a new furnace. One SO promoted the program using other means (e.g. lawn signs, ads on Kijiji) but saw no impact from these efforts. All three SOs promoted the program to contractors. The SOs provided program information and training to contractors through face-to-face or telephone interactions, mail-outs, emails, and flyers. One SO reported promoting the program at trade conferences and workshops. One SO promoted the program among participants during home inspections.

The SOs reported that, even with promotion and contractor training, contractors did not always clearly communicate program details to participants. Frequent changes to the program offering and Ontario's energy policy over the last year have exacerbated this challenge. One SO reported some contractors had stopped promoting the program because they were frustrated by the changes. In addition, the changes and cuts made to other Ontario energy programs added to the confusion among contractors and participants who thought the program might be cut. One SO reported that there was also some confusion between the HRR program offering and Union's low-income program.

Program Communication

SOs were asked about their relationship with CEAs and Union. Interviewed SOs hire the CEAs with whom they work as subcontractors. The SOs consider their relationships with CEAs to be very good, as indicated by their responses ranging from 8 to 10 on a 10-point scale where 1 means "very dissatisfied" and 10 means "very satisfied". The SOs provide a range of support to CEAs. All SOs provide scheduling and booking services for CEAs, as well as training and support to CEAs for meeting NRCan and program requirements. Two of the three interviewed SOs also provide support for data entry into the NRCan and Union system.

SOs also reported high satisfaction in their relationship with Union (with satisfaction levels ranging from 8 to 10 on a 10-point scale). SOs appreciate Union's openness and availability, efficiency in providing information and quick turnaround in answering questions or responding to issues, particularly compared to other Ontario program administrators with whom they work.



CEAs reported high satisfaction in their relationship with SOs (with satisfaction levels ranging from 8 to 10 on a 10-point scale). CEAs reported communicating with SOs almost daily via text messages, email, or in person. CEAs appreciate any support provided by SOs to lessen their workloads (e.g. scheduling, booking, and modelling), thereby allowing CEAs to spend more time in the field.

The majority of interviewed CEAs interact with Union only through the Parachute portal. CEAs were very satisfied in their relationship with Union (with satisfaction levels ranging from 8 to 9 on a 10-point scale). When asked about opportunities to provide input on the program, three of the five interviewed CEAs indicated that they would welcome additional opportunities to provide input and feedback on the program to Union.

Both SOs and CEAs were also very satisfied with the training and information provided to them by Union, noting that there is no additional information, training, or technical information they would like to receive from Union.

Program Delivery and Barriers

SOs are in contact with participants prior to D assessments. SOs reported spending time with potential participants prior to scheduling D assessments to assess the potential for upgrades in their home and ensure that program requirements are well understood and participants qualify for the program.

SOs reported that at least three or four potential upgrades are recommended in the D assessment report; CEAs reported that three to 9 upgrades are typically recommended. The upgrades most frequently mentioned by interviewed CEAs were insulation (5 respondents), furnaces (3 respondents), air sealing (2 respondents) and windows (2 respondents).

All CEAs reported discussing potential upgrades with participants during the D assessments, with four of the five reporting that they urged participants to contact them by phone or email if they had questions or required clarifications. All CEAs reported educating participants on potential energy and cost savings during the D assessments to encourage participants to install more upgrades. One CEA mentioned that participants are especially receptive to the idea that they can have more rebates if they implement more upgrades. Aside from information passed on to participants by CEAs during the D assessments, interviewed SOs did not take any other specific actions to encourage customers to implement upgrades beyond what customers might have initially considered.

All three SOs and two CEAs reported that the least likely upgrade to be implemented by participants are tankless water heaters because of the costs, relatively low incentives, and homeowner skepticism about the technology. CEAs also mentioned that windows (3 respondents) are unlikely to be implemented as they are too costly compared to the incentive amount and there is a lower sense of urgency for such upgrades compared to replacing a broken or aging furnace.

SOs and CEAs were unanimous in noting that the largest untapped opportunity for gas savings in participating houses is insulation.



In 2018, participants implemented an average of 2.6 upgrades.⁸ CEAs and SOs were asked about their recommendations for increasing the number of upgrades per participant. Their suggestions are summarized in Table 3 below.

Table 3: CEA and SO Suggestions for Increasing the Number of Upgrades per Participant

| Suggestion | Number of CEA Respondents | Number of SO Respondents |
|---|---------------------------|--------------------------|
| Increase incentives overall | 2 | 2 |
| Increase incentives for windows and attic insulation | 1 | |
| Increase incentives for tankless water heaters | | 1 |
| Increase participants' understanding of the benefits of the EE measures | 1 | |
| Increase CEA knowledge of potential opportunities in newer homes | 1 | |
| Improve contractor awareness through a contractor network | | 1 |
| Provide financing to minimize upfront investment for participants | | 1 |

SOs and CEAs were also asked about how to increase uptake in the insulation measure. Two CEAs suggested allowing homeowners to install insulation themselves, which is actually permitted under the program. This result suggests that CEAs could be further educated on the fact that participants are permitted to do the work themselves as part of the HRR program offering. Their other ideas are summarized in Table 4 below.

Table 4: CEA and SO Suggestions on How to Increase Uptake in the Insulation Measure

| Suggestion | Number of CEA Respondents | Number of SO Respondents |
|---|---------------------------|--------------------------|
| Increasing rebates for insulation | 2 | |
| Allowing header insulation to qualify for the program | | 1 |
| Increasing the maximum pre-upgrade R-value to quality | 1 | |
| Determining the rebate amount based on the increase in the R-value rather than the achieved R-value | 1 | |

Program Tracking and Reporting

SOs and CEAs were interviewed about the program data tracking and reporting processes.

⁸ This average does not include smart thermostats, which were solely GIF funded or IESO funded measures.



After CEAs complete the D and E assessments, they typically submit detailed data about the participant and assessment results to the SO. As part of the SO agreement, SOs must verify the data provided by CEA and submit completed files to Parachute, Union's online data tracking tool, within 30 days following completion of the D or E assessment. SOs also submit these files to NRCAN. All three interviewed SOs perform some form of internal verification and review of the data, prior to submitting it to Union, to identify typing errors, omissions and any missing required documents.

The internal data tracking and reporting processes vary across SOs. Two interviewed SOs enter all the data into Parachute for their CEAs and one SO delegates the responsibility for Parachute data entry to CEAs. One SO uses in-house CEAs to complete the modelling for CEAs who gather data in the field.

CEAs estimated that data tracking and reporting takes, on average, 30 minutes for the pre-assessment and 25 minutes for the post-assessment. All five CEAs reported that it typically takes 15 days or less to submit their final applications to Union after completing the E assessment. One CEA reported that a delay may occur if participants do not submit all the proper documentation and another noted occasional delays in waiting for NRCAN to approve the file.

The time reported by SOs to process data once it is provided by CEAs varies: one SO reported one day, another under a week, and another up to one month. The SOs that enter data into Parachute for the CEAs reported longer processing times. The longest time was reported by the SO who also does in-house modelling for field CEAs. SOs reported that Union's process between the application and cheque payment has been streamlined and improved over time.

There are inconsistencies in the SOs' approaches to seeking NRCAN's review prior to file submission to Union. One of the three SOs submits data to Union prior to NRCAN approval. For the other two that wait for NRCAN approval prior to submitting to Union, any issue identified during NRCAN's approval process is corrected prior to submitting to Union. Union staff said that inputting program data into Parachute prior to NRCAN review means less delay in the process for participants and shorter turnaround times to receive their payments after their project is completed.

All SOs reported having kept all their program documentation since their participation in the program, thus following the documentation retention guidelines set out in their SO agreement.

There was high satisfaction among partners with Union's data-tracking and reporting process. CEAs reported a satisfaction level ranging from 9 to 10 on a 10-point scale. SOs reported a satisfaction level ranging from 7 to 10; they again highlighted Union's responsiveness and professionalism with data tracking and reporting. One SO reported being significantly more satisfied with Union's processes than with other program administrators with whom they work.

One SO has developed a software system for CEAs to use on tablets to streamline data entry and minimize errors. In the future, this SO would like to integrate this software with Union's system to further increase data entry efficiency and quality.



On how to improve the data tracking and reporting process, one SO suggested there should be more clarity regarding the exact participant name to be entered in Parachute because there is confusion as to when the name shown on a property tax bill should be included. Such confusion slows down the process because it requires more back-and-forth verification among Union, SOs, CEAs, and potentially participants. This and other suggestions provided by SOs and CEAs on how to improve the data tracking and reporting process are summarized in Table 5 below.

Table 5: CEA and SO Suggestions on How to Improve Data Tracking and Reporting

| Suggestion | Number of CEA Respondents | Number of SO Respondents |
|--|---------------------------|--------------------------|
| Providing tablets to CEAs to allow them to electronically record data when in the field | 2 | |
| Automating energy savings calculations (i.e. information not required by NRCan) | 1 | |
| Allowing Parachute users to correct errors on a previous page without erasing the data entered in subsequent pages | 1 | |
| Providing status updates on participant approvals and incentive payments to CEAs | 1 | |
| Clarifying the exact name of the participant to be provided in Parachute | | 1 |

Satisfaction

SO satisfaction with the program overall and various program elements was mixed (see Table 6 below). Although two SOs were satisfied with the program overall, one was less satisfied, noting decreases in incentives and the challenge of keeping EAs and contractors informed and trained on program changes.

SOs were less satisfied with Union program marketing and outreach activities, stating that more outreach by Union would be helpful, particularly to potential participants. One SO noted that there is some confusion in the market between the HRR program offering and the low-income program.

Two of the three interviewed SOs were satisfied with eligible measures, whereas one SO was less satisfied, stating that some requirements, particularly for insulation, could be further optimized to allow more participants to be eligible.

SO satisfaction with program incentive structures varied; one SO was very satisfied with the easy-to-follow incentive structures and two SOs were less satisfied. One SO would like incentives to be reallocated among measures, prioritizing furnaces and tankless water heaters. Another SO suggested that the program not include air sealing as an eligible measure in the two-measure requirement because it is often part of the furnace upgrade.



Table 6: SO Program Satisfaction

| | Top 2 Box (9 to 10) | Middle 2 Box (7 to 8) | Bottom 6 Box (1 to 6) |
|---------------------------------|--------------------------------|----------------------------------|----------------------------------|
| Program overall | 0 | 2 | 1 |
| Union marketing and outreach | 0 | 1 | 2 |
| Eligible measures and equipment | 0 | 2 | 1 |
| Incentive structures | 1 | 0 | 2 |

Rating on 1-10 scale: 1 = Not at all satisfied, 10 = Very satisfied

CEAs were more satisfied with the program overall. CEAs reported being very satisfied with the program incentive structures but were less satisfied with eligible measures, suggesting that other measures (e.g. insulation for basement headers and exposed floors) could be included in the offering. Three CEAs wanted to see increased efforts by Union to promote the program. CEA satisfaction with various program elements is presented in Table 7 below.

Table 7: CEA Program Satisfaction

| | Top 2 Box (9 to 10) | Middle 2 Box (7 to 8) | Bottom 6 Box (1 to 6) |
|---------------------------------|--------------------------------|----------------------------------|----------------------------------|
| Program overall | 2 | 2 | 1 |
| Union marketing and outreach | 1 | 2 | 2 |
| Eligible measures and equipment | 1 | 3 | 1 |
| Incentive structures | 2 | 3 | 0 |

Rating on 1-10 scale: 1 = Not at all satisfied, 10 = Very satisfied

Recommendations for Improvement

In addition to the ideas outlined in Table 4 and Table 5 above, CEAs and SOs were asked if they had any other suggestions on how to improve the program. Their suggestions are summarized in Table 8 below. Increasing contractor awareness and providing tools that communicate the benefits of the recommended measures to participants were the most commonly made suggestions.



Table 8: CEA and SO Suggestions on How to Improve the Program

| Suggestion | Number of CEA Respondents | Number of SO Respondents |
|---|---------------------------|--------------------------|
| Increase contractor awareness. | 2 | |
| Engage participants and assist with their decision-making after the D assessment, provide an online tool (similar to Energy Efficiency Alberta) that allows participants to analyze the costs, rebates, and benefits of recommended measures. | | 1 |
| Develop tools to help CEAs communicate potential for savings during the D assessment. | 1 | |
| Increase the length of time allowed for participants to complete their upgrades after the D assessment. | | 1 |
| Allow participants to keep their files open, allowing them to receive rebates for additional upgrades after their first two measures are completed and assessed. | | 1 |
| Increase participant awareness through marketing. | 1 | |
| Increase incentives for windows. | 1 | |

3.5 Program Processes

The Evaluator reviewed the program processes for program delivery, data tracking and monitoring, as well as the program database and quality assurance activities.

3.5.1 Delivery Process

The delivery process for the HRR program offering includes screening participants for program eligibility, completion of a D assessment and report, completion of an E assessment after upgrades are completed, project submission by the SO, review and approval by Union, and finally participant payment. A SO agreement⁹ signed between Union and all SOs outlines SOs' obligations in the HRR process. The process steps associated with SOs and CEAs are further discussed above in Subsection 3.4.

Program rules dictate that participants must complete their E assessment no later than 120 days after completing the D assessment. The Evaluator found that the average period between the D assessment and E assessment was 88 days. If circumstances do not allow participants to complete the D and E assessments within 120 days, CEAs can request an extension. These requests are approved on a case-by-case basis to provide some flexibility to customers. Overall, 20% of participants had over 120 days elapse between the D and E assessments. The average time taken to complete the process from D assessment to application submission was 133 days.

⁹ Home Reno Rebate 2019 Participation Service Agreement – FINAL – January 2019.



After the D and E assessments are completed, CEAs or SOs enter the participant information and assessment results into Union's Parachute system.

Union staff reported that there had been some issues with the length of time taken between the E assessment and the time to submit a project in Parachute, and files surpassing a 30-day period caused frustration among customers. The average time between the E assessment and the project submission date was 45 days. In all, 48% of files had surpassed a 30-day period between the E assessment date and the application date.

Union has been working with SOs to reduce the time taken between the E assessment and project submission by tracking time taken for projects and sending monthly reports to SOs. Staff reported that with this tracking and reporting to SOs, the period between the E assessment and project submission has been reduced. Staff echoed what was reported by SOs: one reason for delays could be the confusion between Union and CEAs in identifying the right participants who are supposed to receive payment.

Once the data is entered into Parachute, Union's processes for reviewing the data, approving files, and issuing cheques are carried out. Union aims to have cheques mailed to participants 120 days after the E assessment is submitted in Parachute. If customers are curious about the status of their cheque, they may contact Customer Care or their CEA. Application approval and cheque payment dates were not available in the master database provided to the Evaluator.

The participant pays the cost of the D assessment and is only reimbursed for this expense when the E assessment is completed. The Evaluator finds that this is a good practice to minimize the number of customers dropping out of the program. Union staff estimate that about 10% of customers do not complete the E assessment after the D assessment; however, this data is not formally tracked. The Evaluator recommends tracking the data required to monitor the unconverted rate over time.

Figure 11 below summarizes the various HRR delivery steps and the key evaluation findings related to each.



Home Reno Rebate Program Offering
Union Gas
Final Report



Figure 11: HRR Delivery Process Steps



3.5.2 Data Tracking and Monitoring Process

The data tracking and monitoring process begins with SOs and CEAs submitting data into Parachute. As per the SO agreement, SOs are responsible for ensuring data accuracy. As noted in Subsection 3.4, all three interviewed SOs conducted some form of data quality control, e.g. reviewing for typos and ensuring all required documentation is included.

Once the data is entered into Parachute, Union's processes for reviewing the data, approving the file and reporting the data into Union's master database are carried out. The master database includes measure details for each participant, the adjusted savings of each participant, and inputs for cost-effectiveness analysis.

Union staff indicated that the Parachute system has many advantages in terms of efficacy and data integrity, including the following:

- › Automatic checks: for example, if the two-measure minimum is not covered or some items are missing, CEAs receive an error message and cannot submit a project application.
- › Features to ensure the integrity of data submitted by SOs/CEAs, such as filters for outliers of certain key measures (e.g. savings) and drop-down lists to ensure data consistency.
- › The ability for back-and-forth communication among Union and SOs and CEAs through the system to efficiently resolve issues.
- › A capacity that allows Union to see program volume and adjust staff allocations as needed.

As noted in Subsection 3.4, both SOs and CEAs were satisfied with Union's data-tracking and reporting process, including Parachute. One challenge with Parachute noted by Union staff was that changes to the software took many iterations and testing with the external developer.

Each project submitted into Parachute is reviewed by Union staff. If there are issues with the data, these are corrected by Union staff or sent back via Parachute to allow SOs or CEAs to make modifications. Union's project review begins by ensuring that the participant's application is linked to a Union account to ensure the applicant's eligibility and that the cheque is mailed to the correct address. Union uses an input tool that automatically uploads extract data from Parachute, thus allowing for one-by-one project reviews. The input tool comprises several automatic verification tools, including a check for duplicates. The tool also has flags and warnings for:

- › Savings that are too low or too high;
- › Whether the savings verification notes are reasonable and sufficiently detailed;
- › Coherent dates: the D and E assessment dates must not be the same;
- › Costs that are too low or too high;
- › Incorrect assessment costs.

The criteria for triggering a warning have been established by Union data-tracking and reporting staff based on trial and error and observations about the database, but Union staff noted that these criteria could be refined with a technical review. Once a project is verified, the project information is automatically populated to Guardian, Union's record-keeping system.

Once one batch containing information about 300 projects is created in Guardian, it is sent to a supervisor for final review and approval. The Union data and tracking supervisor carries out spot checks on data to ensure flagged problems are properly addressed. Once approval is granted, payment cheques are sent to participants and the files are moved into Union's master database.

Projects are added to the master database by copying and pasting files. The master database contains formulas for calculating annual energy savings and other elements (e.g. incremental costs). The Evaluator notes that because entering data into the master database involves copy and paste by several staff members, there are possibilities for making errors or tampering with files (e.g. modifying a formula or failure to pull the formula down to cover all applicable fields).

Figure 12 below presents the key evaluation findings on the data tracking and monitoring process.

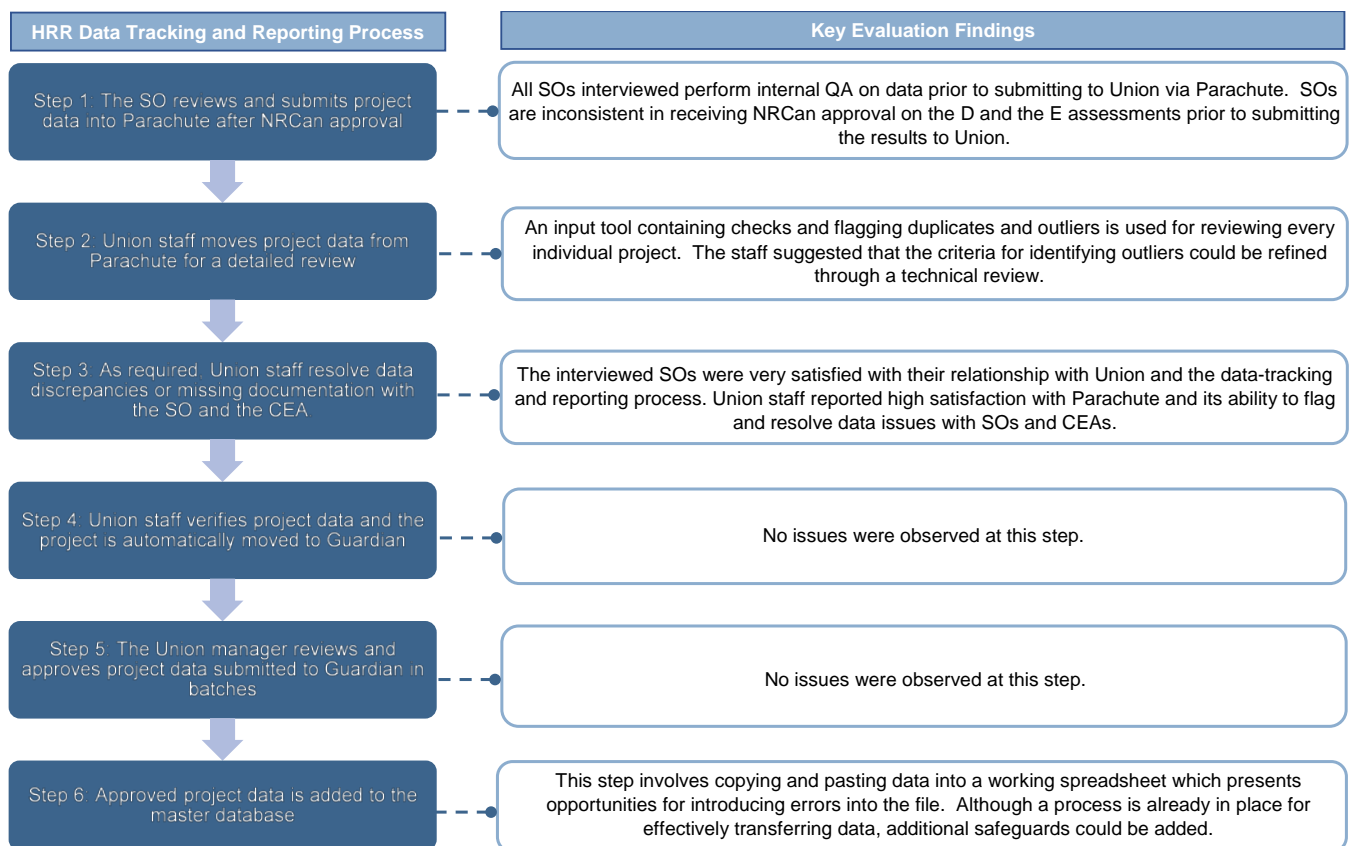


Figure 12: HRR Data Tracking and Reporting Process



3.5.3 Program Database

The Evaluator reviewed the master database by focusing on the following aspects:

- › Clarity and organization;
- › Availability of fields required for program management and evaluation;
- › Methods in place allowing analysis and preventing data entry errors.

The review did not include an examination of data integrity in the master database.

As discussed above, the HRR program offering master database¹⁰ is an Excel spreadsheet containing participant data for approved HRR program applications. The master database serves as a centralized repository of project information gathered from SOs using the Parachute system. The Evaluator did not review the Parachute fields; however, ideally, the Parachute fields should match the master database fields to facilitate Union's work in consolidating the information and avoiding data-handling errors.

The Evaluator reviewed the contents of the master database and found it well organized and clear overall. Except for a few acronyms and fields related to cheque payment, the master database was clear and easy to understand from a third-party perspective. The database included helpful comments to explain the database fields. The Evaluator noticed one comment related to Column DQ ("Total Adjusted TRC"), which did not appear to align with the formula in the column.

The Evaluator found that all the information required for evaluation and program monitoring was included in the database. The master database contained three principle worksheets. The "Pivot" worksheet summarizes the number of participants across the three sources of incentives (i.e. DSM, GIF and IESO) offered by the program in 2018. The "IESO Pivot" worksheet summarizes the projects receiving IESO incentives. The worksheet entitled "Deep Measures Collective Track" contains the details on each project, including participant contact information, the D and E assessment file numbers, Union account numbers, house details (year built and surface area), the type and number of energy efficiency upgrades implemented (furnace, air sealing, etc.), installation cost of each measure, the SO and CEA that completed the assessments, the dates when the D and E assessments were conducted, and the pre and post-renovation annual gas consumption savings values.

Several kinds of information, although not essential, could be added to support program monitoring and track potential lost opportunities:

- › Include all recommended measures and their savings potential from the D assessment to enable better understanding of which measures have not been implemented by participants to inform future program design and marketing strategies;
- › Include the overall savings potential in the D assessment;

¹⁰ 2018 RHRR MASTER FILE FINAL-For Econoler.xls



- › Track those participants who have completed the D assessments but have not implemented the recommended measures; this information is available in Parachute and could therefore be added to the master database.

The Evaluator found the format of the database cells to be consistent, for example the format for dates, which makes data analysis easier. The database also contains two validation columns to prevent data entry errors. The Evaluator recommends making the following modification to the database to identify and minimize data entry errors:

- › Lock the formulas in the spreadsheet so that they cannot be tampered with accidentally (e.g. locking the savings formulas in Columns DV and DZ).

Overall, the HRR program offering master database is clear, well organized, and contains the necessary information for program monitoring and evaluation. With the additions and modifications recommended above, the database will provide even more useful information for program planning and further ensure the quality of reported data.

3.5.4 Quality Assurance

Quality assurance (QA) activities ensure that quality-related issues and problems are identified and resolved to ensure the quality and accuracy of program outcomes and results. A key aspect of the HRR program offering is the results of the D and E assessments performed by CEAs using NRCan's EnerGuide rating system. Through this system, NRCan mandates that both SOs and CEAs fulfill a number of quality control and quality assurance responsibilities.¹¹ Therefore, Union relies heavily on NRCan's quality control and assurance protocol to ensure the accuracy and integrity of program results. Some additional quality assurance activities have been undertaken or delegated by Union to SOs through the SO Service Agreement. The principal quality assurance activities for the HRR program offering are outlined below.

The QA obligations included as part of the SO agreement are:

- › SOs are expected to have an internal quality assurance process to be applied to all HRR program offering related work;
- › SOs are expected to conduct regular audits on completed assessments to ensure the accuracy of information submitted to NRCan and Union;
- › SOs are to complete all the activities needed to meet all NRCan QA requirements.

¹¹ EnerGuide Rating System Quality Assurance Procedures Version 15.5, May 2018.



As part of the EnerGuide program, NRCan has specified the training requirements for CEAs, as well as the modelling and reporting requirements and the roles and responsibilities of CEAs and the SOs. NRCan mandates that SOs have a designated QA specialist responsible for overseeing and coordinating SO QA activities, including performing internal quality assurance and reporting activities. SOs must produce a quality assurance report every six months, including QA audit results.¹²

The NRCan QA protocol also includes elements for performing follow-up based on audit results to address issues found during QA activities. In addition, the NRCan QA protocol mandates that any errors found must be corrected in NRCan's system and updated reports and labels must be provided to homeowners if the corrections result in a rating change of 5% or more. NRCan also performs external QA audits at its discretion; SOs with high volumes and working in a region with an incentive program may be prioritized for QA review.

The Evaluator found that all interviewed SOs each had a designated QA specialist, but only one of the three interviewed SOs had a written internal QA process. SOs reported following NRCan quality assurance protocols, with some SOs reporting that their processes went beyond NRCan's requirements.

NRCan performed external QA audits in 2018 on files submitted by all interviewed SOs. SOs reported that NRCan audited 1.5% to 2% of their project files in 2018. Two of the three SOs reported making corrections in Union's system if errors were found. All SOs reported providing CEAs with a summary of NRCan's results to pinpoint the issues and suggest areas for improvement. Union does not receive QA reports from SOs or NRCan and does not require correcting errors in its system.

In 2018, Union undertook a QA activity to ensure that the shift to the 90% methodology¹³ was successful and did not introduce errors in the data. This process involved matching the Parachute records with the NRCan home data using the file number to verify the savings data. The findings of this QA activity revealed that the savings discrepancy between the two systems was low at less than 2%. In addition, individual errors were sent back to SOs for correction and systematic errors were flagged to allow the SOs and CEAs concerned to deal with them.

¹² Please note that the term "audit" in this section means the QA audits conducted by SOs or CEAs and not assessments of participants' homes.

¹³ The 90% methodology adjusts project savings to reflect a furnace baseline technology with an AFUE of 90% efficiency instead of the existing furnace that is modelled in the E assessment.



KEY FINDINGS AND RECOMMENDATIONS

The following presents an overview of the Evaluator's key findings and recommendations from the Home Reno Rebate program process evaluation.

The HRR program offering's logic model and program theory are well documented. This documentation enables the program administrator to carefully consider likely program outcomes and ensure that the strategic approaches lead to the desired results. The Evaluator made a few adjustments to the program theory and logic model to better reflect the current program strategy. The logic model should be continuously adapted to reflect any program changes and changes in external factors. The program theory includes a few performance indicators linked to the expected long-term program outcomes, which is a good practice.

Recommendation No. 1: Define additional performance indicators to correspond with the adjusted logic model and track all performance indicators linked to program objectives.

The program successfully engaged a large number of participants. The HRR program offering is designed to have a significant impact on the residential market by adhering to whole-house approach to achieving long-term energy savings. Although achieved energy savings are not covered by the scope of this evaluation, the high uptake of the program in the marketplace and the positive feedback from partners indicate the appeal of the program offering.

The HRR program offering effectively leverages its partner network for program promotion and delivery. Union has developed a strong network of partners to promote and deliver the program. Union collaborates with SOs that work with participants through all stages of the program. SOs' work with their networks of CEAs who perform the energy assessments and collaborate with contractors who play an important role in generating participant leads. Union also contributes to program awareness through its website, advertising or bill inserts.

There is high satisfaction among partners with respect to their working relationships and communication between CEAs, SOs and Union. The HRR program offering relies on SOs and CEAs to facilitate the delivery of the program. Therefore, communication and collaboration among partners are essential. The CEAs surveyed were very satisfied with their relationship with Union (with the satisfaction levels ranging from 8 to 9 on a 10-point scale). Surveyed SOs were also very satisfied with their relationship with Union (with the satisfaction levels ranging from 8 to 10 on a 10-point scale). SOs appreciate Union's openness, availability, efficiency at providing information and quick turnaround in answering questions or responding to issues.

The program relies heavily on furnace replacements and contractor referrals, which should be considered when measuring free-ridership. Contractor referrals (mostly from HVAC contractors) are a main driver for program participation. Since contractor referrals are a key driver for program participation, it is necessary to take contractors' recommendations into account in the free-ridership measurement. Otherwise, the free-ridership level may be overestimated.



The program uses furnace replacement opportunities as an entry point into the program to engage homeowners and encourage participants to implement other measures to improve the efficiency of their home. The program data shows that 88% of HRR projects included a furnace upgrade and 79% included air sealing.

Recommendation No. 2: Investigate current practices among contractors for pairing air sealing with furnace replacements to assess what target of air sealing should remain incentivized by the program and counted in the minimum number of upgrades to be implemented.

Recommendation No. 3: When assessing free-ridership as part of the net impact evaluation, measure the influence of recommendations made by program partners (contractors and CEAs) on the types of upgrades installed by participants.

Union staff reported a low number of unconverted assessments. The program covers the cost of pre and the post-renovation energy assessments and reimburses participants upon completion of the post-renovation energy assessment, which is a good practice for maximizing the number of participants completing both the D and the E assessments. However, the number of unconverted assessments, while available in Parachute, was not tracked in the master database.

Recommendation No. 4: Track and monitor the number of unconverted assessments.

Opportunities remain for better communicating the benefits of potential upgrades. CEAs try to encourage participants to install more upgrades by educating them on potential energy and cost savings during the D assessment.

In total, 61% of participants installed the minimum number of upgrades required by the program. Participants identified financial constraints as the main barrier to not implementing the recommended measures, which was followed closely by a belief that their homes did not need the upgrades. Moreover, the only two aspects that received relatively lower satisfaction ratings from participants are related to the level of information shared about ways to reduce energy use.

The EnerGuide Homeowner Information sheet and the Renovation Upgrade Report are provided to homeowners to educate them on energy saving opportunities in their home. However, results indicate that further efforts could be made to better communicate energy assessment results in a simplified, easy to digest manner, including the benefits of potential upgrades, to minimize lost opportunities. This was also identified by the SOs and CEAs interviewed.



Recommendation No. 5: Provide CEAs with an additional tool(s) to better communicate the benefits of recommended measures, such as an online tool that allows participants to analyze the costs, rebates and benefits of the measures.

Insulation is the largest untapped opportunity for achieving gas savings in participating houses. All interviewed CEAs mentioned that insulation is one of the most frequently recommended upgrades. However, only 35% of participants installed insulation under HRR. The main recommendation from program partners on how to increase insulation uptake is to increase the rebate amount for this measure.

Recommendation No. 6: Consider ways to increase uptake in insulation upgrades, such as increasing the rebate amount or better communicating the benefits of installing insulation (as per Recommendation 5 above).

The HRR program offering provides a satisfying customer experience. Most participating customers were very satisfied with their overall experience with the HRR program offering, the ease of participating in the program and their interactions with the CEA during both assessments. Union's market research results show that overall satisfaction with the program varied somewhat among SOs. Union provides feedback to SOs on how they compare to their peers.

Recommendation No. 7: Continue to monitor participant satisfaction among SOs to respond quickly to any changes in satisfaction levels.

Length of time to receive payment impacts participant satisfaction. Union's market research findings show that overall satisfaction with the program declines when payment is received later than expected. Reducing the time for issuing the rebate, as suggested by 15% of surveyed participants, could therefore increase overall satisfaction with the HRR program offering. Several factors impact the time required for issuing the rebate and Union has taken steps to target a number of these factors. Union staff and SOs both indicated that delays occur when there is confusion in identifying the right person to receive program rebate.

Cheques are issued at the end of the participation process, after the project application has been fully approved. Union aims to have cheques mailed out to participants 120 days after submission of the E assessment. However, other steps to be completed before submitting the E assessment sometimes result in delays. Customers do not receive automatic updates on their application status. If customers are curious about the status of their cheque, they may contact Customer Care or their CEA.

Recommendation No. 8: Consider ways to identify the correct program participant to avoid delays in processing applications, for example, by validating participant information earlier in the participation process (i.e. during the D assessment).

Recommendation No. 9: Provide customers with notices when their project application is received and approved.



The program data tracking, monitoring and reporting process is complete and effective and follows best practices. The process is automated where possible and utilizes tools that provide automatic checks, error flags and warnings. Union has updated processes to adapt to increased project volume and continuously reviews and improves processes to accommodate program changes and implement any efficiencies to streamline processes.

The Parachute system meets the data needs of SOs and Union. Both CEAs and SOs are satisfied with the Parachute system and Union's data-tracking and reporting process. Union staff also reported satisfaction with the Parachute system because it improves data integrity and consistency, allows for efficient resolution of data discrepancies with SOs and CEAs and improves the ability to plan based on the volume of applications.

The data reporting process among SOs is inconsistent. The Evaluator found inconsistent practices among SOs. First, some SOs have project files approved by NRCAN prior to inputting the data into Union's Parachute system while others do not. Second, there are inconsistencies among SOs in whether issues identified during the NRCAN review are corrected in Parachute or not. Submitting files to Union prior to NRCAN's review is seen as a way to reduce delays in the project approval process. However, the practices should be consistent among SOs.

Recommendation No. 10: Make SO practices for NRCAN file approval consistent. If the program data is inputted into Union's Parachute system prior to NRCAN approval, monitor a sample of project files and NRCAN-approved files, sampled over at least a year, to confirm that the difference between the two groups of files is minor and no adjustment is needed.

The master database¹⁴ is well organized and clear and contains the main information required for program management and evaluation purposes. Several pieces of information, although not essential, could be added to support program monitoring and track potential lost opportunities.

The process of adding projects to the master database involves copy-pasting project information into the file and might thus introduce errors.

Recommendation No. 11: Add information to the master database to support program monitoring and planning, as well as a future program strategy. More specifically:

- › Include all the recommended measures and their savings potential shown in the D assessment to enable a better understanding of the measures that have not been implemented by participants to inform future program design and marketing strategies.
- › Include the overall savings potential from the D assessment.

¹⁴2018 RHRR MASTER FILE FINAL-For Econoler.xls.



Recommendation No. 12: Add safeguards in the master database to reduce the risk of introducing errors. Consider locking formulas in the spreadsheet so that they cannot be tampered with accidentally (e.g. locking the savings formulas in Columns DV and DZ).

The HRR QA protocol is sufficient with some room to improve consistency among SOs. The HRR program offering largely relies on NRCan QA processes to ensure data quality and integrity. All SOs interviewed each have a designated QA specialist and reported following NRCan's protocol in conducting internal QA audits. All interviewed SOs followed the documentation retention protocols in Union's SO agreement. However, only one of the three SOs had a written QA process and there were some inconsistencies in how errors found in NRCan's QA audits were corrected in Union's system. A 2018 QA activity performed by Union found differences of less than 2% between NRCan's file data and Parachute.

Recommendation No. 13: Ensure that SOs consistently follow the QA guidelines in SO agreements and that practices for making corrections based on QA audits are consistent among SOs.

Recommendation Summary

Table 9 below provides a summary of the recommendations and a high-level analysis of the benefits and costs of implementing recommendations. The table is colour-coded. In the Benefit column, green indicates that a recommendation has higher importance for ensuring and improving the effectiveness of program offering, delivery or processes; yellow indicates relatively lower importance. In the Cost column, green indicates lower cost and yellow represents higher cost.



Table 9: Cost-Benefit Analysis of Recommendations

| Recommendation | | Benefit | Cost |
|----------------|---|---------|------|
| 1 | Define additional performance indicators to correspond with the adjusted logic model and track all performance indicators linked to program objectives. | | |
| 2 | Investigate current practices among contractors for pairing air sealing with furnace replacements to assess what target of air sealing should remain incentivized by the program and counted in the minimum number of upgrades to be implemented. | | |
| 3 | When assessing free-ridership as part of the net impact evaluation, measure the influence of recommendations made by program partners (contractors and CEAs) on the types of upgrades installed by participants. | | |
| 4 | Track and monitor the number of unconverted assessments. | | |
| 5 | Provide CEAs with an additional tool(s) to better communicate the benefits of the recommended measures, such as an online tool that allows participants to analyze the costs, rebates, and benefits of the measures. | | |
| 6 | Consider ways to increase uptake in insulation upgrades, such as increasing the rebate amount or better communicating the benefits of installing insulation (as per Recommendation 5 above). | | |
| 7 | Continue to monitor participant satisfaction among SOs to respond quickly to any changes in satisfaction levels. | | |
| 8 | Consider ways to identify the correct program participant to avoid delays in processing applications, for example, by validating participant information earlier in the participation process (i.e. during the D assessment). | | |
| 9 | Provide customers with notices when their project application is received and approved. | | |
| 10 | Make SO practices for NRCan file approval consistent. If the program data is inputted into Union's Parachute system prior to NRCan approval, monitor a sample of project files and NRCan-approved files, sampled over at least a year, to confirm that the difference between the two groups of files is minor and no adjustment is needed. | | |
| 11 | Add information to the master database to support program monitoring and a future program strategy. | | |
| 12 | Add safeguards in the master database to reduce the risk of introducing errors. | | |
| 13 | Ensure that SOs consistently follow the QA guidelines outlined in SO agreements and that practices for making corrections based on QA audits are consistent among SOs. | | |



APPENDIX I PROGRAM MANAGEMENT AND MARKETING STAFF INTERVIEW GUIDE

Date:

Interviewee Name:

Interviewer:

Table 1: Research Objectives and Associated Questions

| Research Issue | Associated Questions |
|---|----------------------|
| Respondent Roles and Responsibilities | Q1 |
| Program Offering and Implementation | |
| Are there opportunities to improve the efficacy of the program offering, including eligibility requirements? | Q2-Q15 |
| Are there opportunities to improve program awareness and communications? | Q38-Q44 |
| Using Union's Market Research results, what is participant satisfaction with the program, including impact of postal strike on customer satisfaction? | Q45 |
| What is partner (CEAs) satisfaction with the program, including their interactions with Union and service organizations? | Q21-Q26, Q27 |
| Processes and Program Delivery | |
| Is the program administration and delivery approach, including activities of SOs, internal processes and risk mitigation, effective and efficient? | Q16-Q28 |
| Is the program theory and logic model complete and relevant? | Q7, Q16 |
| What, if any, are the difficulties or barriers to program delivery? | Q16-Q28, Q44 |
| Data tracking and Quality Assurance | |
| Is program tracking, monitoring and reporting complete and effective? | Q29-Q32 |
| Is the CEA facing system meeting the data needs of CEA and Union? | Q23, Q27, Q31 |
| Are the quality control and assurance measures in place ensuring program data integrity? | Q33-Q37 |
| Are program processes consistent with program intentions? | Q16, Q17 |
| Are the SOs adhering to the documentation retention protocols outlined in Unions' agreements with SOs? | Q20, Q35 |
| Successes, Challenges and Opportunities | Q46-Q50 |
| Documentation Request | Q52 |



Green text: instructions for interviewer

INTRODUCTION

As you know, we are undertaking a process evaluation of the Home Reno Rebate (HRR) program. As part of this evaluation, we are collecting information from program staff about the program's overall offering, implementation, management, processes, successes, challenges and areas for improvement.

Is it okay if I record our discussion to make sure that I capture everything?

Respondent's Roles and Responsibilities

Q1. Please describe your role in the **HRR program offering** and main responsibilities working on the HRR program offering and how long you have been working in this role? [For each individual present]

Program Offering and Implementation

Program Goals and Objectives

Q2. Based on our review of the documentation, we understand that the **HRR program offering** was introduced in 2012 and developed to help homeowners understand opportunities for energy savings throughout their home and encourage them to install multiple deep, long-lasting measures, such as insulation, high-efficiency windows, tankless water heaters, furnaces and boilers. Could you provide additional insight into your perspective on the program's primary purpose?

Q3. We understand that in 2018 your target metric was 8,010 homes and your draft result achieved is 16,118 homes, over 200% of the metric. Is this metric based on homes that have installed measures and completed a post-assessment?

Q4. Why do you think you achieved over-target in 2018?

Q5. We understand that 2018 reached the maximum achievement, which is capped at 200%. Is the cap based on budget constraints? Was there any change in program when the cap was close to being reached or achieved? [Probe: program no longer accepts new participants, shift in marketing]

Q6. The DSM Plan mentions the following objectives and goals. How do you track and monitor how the program is doing relative to these goals? [Probe: any targets?]

Quantitative objectives:

- Generate long term savings
- Avoid lost opportunities

Qualitative objective:

- Encourage a holistic approach to energy efficiency



Q7. We understand from the logic model that we were provided that customer satisfaction is a long-term outcome for the program. Is this correct? Is there a quantitative goal for customer satisfaction?

Coordination with Other Offers

Q8. We understand that Union also has a Behavioural offering funded by the Green Investment Fund (GIF) which launched in 2017. Can you describe how the Behaviour program intersects with the HRR program offering? [PROBE: cross-promotion, targets]. Has this connection had a positive impact for HRR program offering? If yes, how?

Q9. We understand the program coordinated with IESO for the Whole Home pilot in 2017 and that this pilot ended in November 1, 2018. We understand that through the pilot, gas participants would also be eligible for rebates on electric appliances and that additional funds were provided for the pre and post assessments to cover assessment of electric measures. The following questions are to understand how this pilot may have impacted gas participants, program processes and partners in 2018.

- Did this pilot have an impact on gas participants while it was in place? [PROBE: increased awareness of program, increased interest]
- What was the impact of the pilot on CEAs or SOs while it was in place? [PROBE: volume of work, reporting]

Q10. We understand that in 2016 Union was provided additional funding from the government of Ontario's Green Investment Fund (GIF) to enhance the HRR offering. This funding was used to expand the target market for HRR to include gas heated homes outside of Union's franchise area as well as homes in Union's franchise that use oil, propane or wood as their primary heating fuel, with some additional measures added. The funding also allowed rebates to be increased for all existing HRR measures to drive higher participation and provide smart thermostat to all qualifying homes. This evaluation focuses on Union gas participants with gas heaters or boilers, so we have some questions to understand how the GIF and the enhanced offering may have impacted gas participants or program processes and partners in 2018.

- What was impact of the enhanced offering on CEAs and/or SOs? [PROBE: Volume of work, reporting]
- How did the increased incentives for Union gas participants impact participation?



Program Offer

- Q11. Aside from ending of Whole Home Pilot and GIF funding have there been any other changes to the program in 2018?
- Q12. Do you have any plans to make changes to the program? [IF SO] Which ones?
- Q13. We understand that a bonus rebate of \$250 is offered to encourage participants to install more than two measures. What is the uptake of the bonus rebate? Has it been successful in encouraging additional measures?
- Q14. The program summary data we received shows air sealing and furnaces as by far the most popular measures installed as part of the program. Why do you think that is? [PROBE: In 2017: Air Sealing =11,725, Furnaces= 11,758, Windows = 4445; cost-effectiveness, energy savings, synergies between measures]
- Q15. What is the rate of participants that complete a pre-assessment but do not install measures as part of the program? What, if anything, is done to recruit these participants?

Program Delivery

- Q16. Please guide me through the process that a participant goes through to take part in HRR from initial contact to final contact between SOs, Union Gas and the participant?

Partners and Market Actors (SOs, CEAs and contractors)

Now, I would like to talk to you about the role of Service Organizations (SOs), Certified Energy Advisors (CEAs) and contractors in implementing and delivering the program.

- Q17. We understand the SOs are responsible for scheduling pre-and post-energy assessments with participants, employing CEAs to perform the assessments and recommending eligible upgrades and submitting all required paperwork to Union on behalf of the participant. Is this correct? Am I missing any other SO responsibilities?
- Q18. How do you find and recruit SOs to work with the program?
- Q19. How do you communicate with SOs about the program?
- Q20. What is required of SOs in terms of providing documents, data tracking and reporting?
- Q21. Please describe the role of the participating CEAs?
- Q22. How do CEAs qualify for the program?
- Q23. What is required of CEAs in terms of documents, data tracking, reporting, etc.?
- Q24. Do you communicate with CEAs about the program?
- Q25. Do you communicate with contractors about the program?



Q26. What tools and training, if any, have you provided to...

- a. SOs?
- b. CEAs?
- c. Contractors?

Q27. Did you experience any challenges with SOs, CEAs or contractors? [PROBE: recruitment, qualifications, quality]

Q28. Have there been any problems or complaints from customers about the program?

- a. [IF SO] What are the problems/complaints? Are there trends?
- b. [IF SO] Have these been addressed? How?

Data Tracking and Quality Assurance

Q29. How does your team monitor program performance including tracking participants and projects for HRR?

Q30. How well is the current tracking process meeting your needs? [Probe: data availability, timing of reporting]

Q31. I understand that Parachute is the system used by SOs to input participant data, including data from the pre and post assessment. Is the Parachute system meeting Union's needs?

Q32. What changes would you like to see, if any, to the current tracking process?

Q33. We understand that the program relies on, in part, NRCAN QA processes completed as part of certification and use of EnerGuide and HOT2000 for quality assurance. What, if any, additional QA activities are undertaken by Union for this program? Any documentation? [Probe: Internal QA checks, DSM audit, Project verification, site inspections]

Q34. [IF Q33 = Site Inspection, project verification]. Please describe your project verification/site inspection protocols. [Probe: documentation, sampling]

Q35. What QA activities are expected of the SOs? [Probe: Data integrity]

Q36. Is there a process in place to track performance of contractors? What happens if there is a problem with a contractor (e.g. poor installation)?

Q37. Are there any current challenges with QA/QC or data reporting with the program? If yes, do you have suggestions on how these challenges could be addressed?



Marketing and Awareness

- Q38. Based on our review of the documentation, we understand that Union Gas and SOs both have responsibilities for implementing the HRR program offering. Who is responsible for marketing the program?
- Q39. The DSM report states that many tactics are used to market this program: mass-media, digital tactics, TV, bill inserts, flyer and door hangers distributed by CEAs and posters at trade shows and events. Which ones would you say are the primary ones?
- Q40. Are you aware of any other advertising or marketing activities done by the SOs and CEAs to promote the program?
- Q41. Do contractors promote the program? If so, how?
- Q42. How, if any, did the program cross-promote other Union programs to participants?
- Q43. Are the SOs responsible for recruiting participants? If so, how do the SOs identify participants?
- Q44. What do you think are the key barriers to customer participation in the program?
- Q45. We understand that Union Market Research fields an ongoing survey to a sample of HRR participants to measure satisfaction with the program. How do you use the results of these surveys? [Probe: program improvements, targeted marketing, CEA feedback, validation of type of project]

Successes, challenges, and opportunities

- Q46. What do you see as key successes of the program?
- Q47. What are key challenges for the program?
- Q48. What opportunities do you see for the program going forward?
- Q49. What would you like to learn from this process evaluation?
- Q50. Is there anything else about the program that we have not discussed that you feel should be mentioned?

Thank you very much for your valuable feedback.



APPENDIX II

DATA TRACKING AND REPORTING AND MARKET RESEARCH STAFF INTERVIEW GUIDE

Date:

Interviewee

Interviewer:

Table 1: Research Objectives and Associated Questions

| Research Issue | Associated Questions |
|---|----------------------|
| Respondent Roles and Responsibilities | Q1 |
| Program Offering and Implementation | |
| Are there opportunities to improve the efficacy of the program offering, including eligibility requirements? | N/A |
| Are there opportunities to improve program awareness and communications? | N/A |
| Using Union's Market Research results, what is participant satisfaction with the program, including impact of postal strike on customer satisfaction? | Q2-Q14 |
| What is partner (CEAs) satisfaction with program, including their interactions with Union and service organizations? | N/A |
| Processes (Program Delivery) | |
| Is the program administration and delivery approach, including activities of SOs, internal processes and risk mitigation, effective and efficient? | Q7-Q8 |
| Is the program theory and logic model complete and relevant? | N/A |
| What, if any, are the difficulties or barriers to program delivery? | N/A |
| Data tracking and Quality Assurance | |
| Is program tracking, monitoring and reporting complete and effective? | Q15-Q20, Q36-Q40 |
| Is the CEA facing system meeting the data needs of CEA and Union? | Q18 |
| Are the quality control and assurance measures in place ensuring program data integrity? | Q28-Q35 |
| Are program processes consistent with program intentions? | Q28 |
| Are the SOs adhering to the documentation retention protocols outlined in Unions' agreements with SOs? | N/A |
| Successes, Challenges and Opportunities | Q10-Q11, Q36-Q39 |



Green text: instructions for interviewer

INTRODUCTION

As you know, we are undertaking a process evaluation of the Home Reno Rebate (HRR) program. As part of this evaluation, we are collecting information from program staff about the program's overall offering, implementation, management, processes, successes, challenges and areas for improvement.

Is it okay if I record our discussion to make sure that I capture everything?

Respondent's Roles and Responsibilities

[FOR MARKET RESEARCH AND DATA TRACKING AND REPORTING]

Q1. Please describe your role in the **HRR program offering** and main responsibilities working on the HRR program offering and how long you have been working in this role? [For each individual present]

Market Research

[SECTION FOR MARKET RESEARCH STAFF]

Q2. We understand that Union Market Research fields an ongoing survey to a sample of HRR participants to measure satisfaction with the program. The objectives of the participant survey are to:

- Measure overall satisfaction with the program
- Measure overall satisfaction with the energy advisor that completed the pre-and post-renovation assessments
- Identify opportunities for improvement in the participant experience
- Validate the type of renovation projects that the participant has completed
- Reinforce that this is a Union Gas/Gov't of Ontario/IESO program for attribution purposes
- Improve understanding of the participants (e.g. demographics) of the program to support future marketing efforts; and
- Measure perceptions of Union's brand and reputation

Am I missing or mischaracterizing any objectives of the participant research?

Q3. Can you describe the sampling method?

Q4. What is the methodology of this participant survey? [PROBE: Survey conducted in house? Phone or online? Frequency?]

Q5. What is your response rate? Any challenges in getting your targeted response?

Q6. How did you select survey questions?



- Q7. Who utilizes the results of this research?
- Q8. How do you share the results of the research?
- Q9. How often do you adjust the questions of the survey?
- Q10. What are the most challenging objectives of the survey to meet? Why?
- Q11. Do you have any ideas on how these challenges could be addressed?
- Q12. Now a few questions about the impact of postal strike on customer satisfaction. Do you have any data indicating changes in customer satisfaction? Does the participant survey database include the date of the mailed cheque?
- Q13. Have you conducted any other market study to support the HRR program offering?
- Q14. Is there anything else about the program that we have not discussed that you feel should be mentioned?

Thank-you very much for your time.

Data Tracking and Reporting

[SECTION FOR DATA TRACKING AND REPORTING STAFF]

- Q15. What HRR program offering data needs are your team responsible for and who are the users?
- Q16. I understand that data tracking and reporting for HRR is done through three tools: (1) Parachute, the system used by SOs to input program data, including data from the pre and post assessment; (2) a master excel spreadsheet that uses data from Parachute to calculate program savings by home; and (3) Guardian, a tracking database used to track program at a participant-level. In a few moments, I would like to discuss each of these systems in turn, but first, am I missing or misunderstanding any key components of program data tracking and reporting?
- Q17. Can you walk me through how these three data systems are used and linked in the HRR data tracking and reporting process? **[PROBE: Are common fields automatically updated?]**
- Q18. We understand that the master list calculates savings to be claimed through DSM, applying the 90% methodology and calculating TRC. What is the 90% methodology?

Partners and Market Actors (SOs, CEAs and contractors)

Now, I would like to discuss the role of SOs and CEAs in data tracking and reporting and QA.

- Q19. We understand the SOs are responsible for scheduling pre- and post-energy assessments with participants, employing CEAs to perform the assessments and recommending eligible upgrades and submitting all required paperwork to Union on behalf of the participant. Is this correct? Am I missing any other SO responsibilities?
- Q20. How do you communicate with SOs about the program?



- Q21. What is required of SOs in terms of documents, data tracking, reporting etc.?
- Q22. What is required of CEAs in terms of documents, data tracking, reporting etc.?
- Q23. Do you communicate with CEAs about the program? If yes, how?
- Q24. What tools or training, if any, have you provided to...
- a. SOs?
 - b. CEAs?
- Q25. How well is the Parachute system meeting Union's needs? [Probe: data available, data integrity, timing of reporting]
- Q26. Do you experience any challenges with SOs or CEAs? [Probe: responsiveness, volume and timeliness of corrections]
- Q27. Do you have any ideas on how these challenges could be addressed?

Data Review and Quality Assurance

- Q28. Please describe your data review process? Any documentation? [Probe: internal audits by senior staff, frequency]
- Q29. Who is responsible for preventing duplicates in data and reviewing application data comprehensiveness?
- Q30. [If Q23 = Union] How are duplicates prevented? Documentation?
- Q31. [If Q23 = Union] How are inaccurate or incomplete applications dealt with? Documentation?
- Q32. How is data integrity safeguarded? [Probe: input masks, reasonableness checks on data entry]
- Q33. Are there any other QA/QC activities related to data tracking and reporting that we haven't already discussed?
- Q34. Is there any reporting on QA activities done for the program? [Probe: SO reporting on QA activities, internal QA reporting] If yes, can these be shared?
- Q35. How would you improve the QA/QC process?
- Q36. What do you see as the key strengths of the program data tracking and reporting?
- Q37. At a high-level, what impact, if any did the Whole Home Pilot and enhanced GIF offering have on data tracking and reporting?
- Q38. Has there been any challenges data tracking and reporting with the program that we have not discussed?
- Q39. Do you have suggestions on how these challenges could be addressed?



Rebate Processing

Q40. The next set of questions relates to rebate processing. We understand that your team is responsible for rebate processing to ensure customers receive their rebate cheques. Please guide me through the process from where your team steps in to when the customer receives a rebate cheque. Any documentation?

Q41. Are there any metrics associated with tracking this the rebate process? [Probe: length of time from submission of file to cheque being cut, customer satisfaction] If yes, what is performance against targets? Why?

Q42. Are there any current challenges with rebate processing? [Probe: length of time from submission of file to cheque being cut, volume]

Q43. Do you have any ideas on how these challenges could be addressed?

We are almost finished.

Q44. Have there been any problems or complaints from customers about the program?

- a. [IF SO] What are the programs/complaints? Are there trends?
- b. Have these been addressed? How?

Q45. Is there anything about the program that we have not discussed that you feel should be mentioned?

Thank-you for your time.



APPENDIX III SERVICE ORGANIZATION INTERVIEW GUIDE

Date & Time:

Interviewee Name:

Company Name:

Interviewer:

Table 1: Overview of Data Collection Activity

| Descriptor | This Instrument |
|----------------------------|-------------------------------------|
| Instrument Type | Telephone Interview |
| Estimated Time to Complete | 20-30 minutes |
| Population Description | Service Organizations |
| Contact List Size | |
| Completion Goal | 3 |
| Contact List Source | Enbridge Gas operating as Union Gas |
| Fielding Firm | Econoler |

Table 2: Research Issue and Associated Questions

| Research Issue | Associated Questions |
|---|----------------------|
| Respondent Roles and Responsibilities | A1-A3 |
| Program Offering and Implementation | |
| Are there opportunities to improve the efficacy of the program offering, including eligibility requirements? | C1-C10, E1 |
| Are there opportunities to improve program awareness and communications? | B1-B3 |
| Using Union's Market Research results, what is participant satisfaction with the program, including impact of postal strike on customer satisfaction? | NA |
| What is partner (CEAs) satisfaction with program, including their interactions with Union and service organizations? | D3, D5, E1, E3, F7 |
| Processes and Program Delivery | |
| Is the program administration and delivery approach, including activities of SOs, internal processes and risk mitigation, effective and efficient? | C1-C10, D1-D6 |
| Is the program theory and logic model complete and relevant? | NA |
| What, if any, are the difficulties or barriers to program delivery? | A4, C3 |



| Research Issue | Associated Questions |
|--|----------------------|
| Data tracking and Quality Assurance | |
| Is program tracking, monitoring and reporting complete and effective? | F1-F8 |
| Is the CEA facing system meeting the data needs of CEA and Union? | F1-F8 |
| Are the quality control and assurance measures in place ensuring program data integrity? | G1-G9 |
| Are program processes consistent with program intentions? | A4, C1-C10 |
| Are the SOs adhering to the documentation retention protocols outlined in Unions' agreements with SOs? | G3 |
| Successes, Challenges and Opportunities | H1-H2 |

INTRODUCTION

Hello, may I speak with **[Contact name]**?

My name is **[Interviewer name]** and I'm calling from Econoler on behalf of Union Gas. Union Gas has contracted Econoler to evaluate the Home Reno Rebate program.

- Person responsible available **[CONTINUE]**
- Person responsible currently unavailable **[ARRANGE CALL BACK WITH THE RIGHT PERSON]**
- Refused **[THANK AND TERMINATE]**

Your responses will be kept confidential and we will not share the information you provided in a way that could identify your individual or corporate responses. [READ IF NECESSARY: The results of this evaluation will only be used to improve the program and will not affect your involvement in the program.]

Context

One of the main goals of this interview is to collect information to assess program outreach and delivery, barriers to participation, program communication, program data tracking and reporting, quality assurance and possible program improvements.

Our discussion should take about 20-30 minutes.

Do you have any questions before we begin?



Respondent's Role and Involvement

The first questions will be about your business and your involvement with the Union Home Reno Rebate program.

A1. What is your title and role?

A2. How would you describe your involvement within the Home Reno Rebate program?

A3. How long have you been involved with the program?

A4a. Do you consider your involvement in the program as straight forward or complicated?

☐ Straight forward

☐ Complicated

A4b. If "Complicated", please indicate what makes your involvement in the program complicated?

Program Outreach

I would now like to discuss program outreach.

B1. Do you promote the Home Reno Rebate program to potential participants? If so, how?

B2. Besides that, how do potential participants learn about the Home Reno Rebate program?

B3. Are there elements of the program that you find are generally not well-understood by participants? If so, which ones?

Program Delivery and Barriers

C1. What is your level of contact with the customer prior to their D-assessment audit? [Probe: Scheduling audit, pre-qualification].

[IF C1 includes Pre-qualification, ASK C2 – C3]



- C2. Can you describe how you screen potential participants prior to their D assessment? [Probe: Union customer with active account, owns a detached, semi-detached, townhouse or mobile home, has a natural gas furnace/boiler as heating source]
- C3. How do you ensure that participant applying for Home Reno Rebate is the bill-payer?
- C4. Do you review the content of the pre-assessment and post-assessment report submitted by the CEAs?
 IF SO:
- a. What do you look at?
 - b. How many energy-efficient upgrades would you say are typically recommended in the pre-assessment report and what are they?
 - c. Which upgrades recommended in the assessment report are not typically implemented by participants? Why?
- C5. Do you do any follow-up with participants as part of their participation in the program? [Probe: after D assessment]
- C6. [ASK IF C5= YES] How, if at all, do you attempt to encourage customers to implement upgrades beyond what they may have initially considered?
- C7. The program data indicates that participants implement on average 2.8 measures per home. What can be done to encourage participants to implement more upgrades?
- C8. And specifically, for insulation, what do you think can improve the participant uptake of this measure?
- C9. From your perspective, what is the largest untapped opportunity for gas energy savings in participating houses?
- C10. Who do you feel has the most influence in deciding the type of upgrades to be implemented in participating homes?
- ☐ Homeowner
 - ☐ Certified Energy Auditor
 - ☐ Contractor
 - ☐ Other, specify: _____



Communication with Certified Energy Auditors and Union

- D1a. Now talking about your working relationship with Certified Energy Auditors. How many Certified Energy Auditors do you work with?
- D1b. Are the CEAs you work with employees of your company or independent contractors?
- D2. What support do you provide to the CEAs? [Probe: training, administrative support]
- D3. How do you usually communicate with the Certified Energy Auditors?
- D4. Using a scale from 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied”, overall, how satisfied are you with the working relationship you have with the Certified Energy Auditors? Why?
- D5. Now talking about your relationship with Union. How do you usually communicate with Union?
- D6. Still on a scale of 1 to 10, overall, how satisfied are you with the relationship you have with Union? Why?
- D7a. Do you believe that Union gives you sufficient opportunity to provide input on the program?
- ☐ Yes
- ☐ No
- D7b. If no, what else can Union do to involve Service Organizations?



Satisfaction

E1. I have some questions about your satisfaction towards the program. Using a scale from 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied”, how satisfied are you with...?

| Aspects of the program | Satisfaction Level (1 to 10) | If less than 8, please share the reason(s) |
|---|---------------------------------|---|
| a) The overall program | | |
| b) Program marketing and outreach activities initiated by Union | | |
| c) Eligible measures and equipment | | |
| d) Program incentive structures | | |

E2. Did you or anyone in your company receive training or information from Union about the program? If so, on which topic?

E3. If so, how satisfied are you with the information and/or training provided on a scale of 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied” ? Why?

If less than 8 → Why are you not more satisfied?

E4. Is there any additional information, training or technical support you would like to receive?

Program Processes

Now, here are some questions regarding the program processes and quality assurance.

F1. We understand that Certified Energy Auditors track and report the data captured in the energy assessment. Do they submit the data to you or directly into the Parachute system? [PROBE: If they submit to SO: Do you receive application files by batch? What frequency?]

[ASK F2 – F5 IF CEAs submit data to SO]

F2. Do the Certified Energy Auditors send pre-assessment data, and then post-assessment data, or do they send application upon final completion only?

F3. Can you walk me through your administrative process when receiving application data from the Certified Energy Auditors?



- F4. How do you report the program data to Union? At what frequency?
- F5. Approximately how many days does it take between receiving HRR application data from CEA and completing the administrative process for the pre-assessment? And for the post-assessment?
- Pre-Assessment:
- Post-assessment:
- F6. What can be done to reduce the time between the post-assessment audit and Union's approval of the project for payment? [Probe: CEA side, SO side]
- F7. Using a scale from 1 to 10 where 1 means "very dissatisfied" and 10 means "very satisfied", how satisfied are you with the overall program tracking and reporting? Why?
- F8. What aspects of the data tracking and reporting system or process, if any, would you like to see changed or improved? How?

Quality Assurance

- G1. What verification activities, if any, do you undertake to ensure the quality control and accuracy of the data submitted to Union? Any other verification activities?
- G2. At what point in the process are the assessment files submitted to NRCan for approval? Are there any adjustments to data if errors or issues are identified during the NRCan approval process? [IF YES: Who is responsible for making the adjustments?]
- G3. How do you store and maintain files and documentation related to Union audits? [Probe: Length of time documentation is kept]
- G4. According to our information, you have processed 5,502 projects (or files) in 2018 as part of the Home Reno Rebate program. Is that right? If not, how many projects?



- G5. How many of these projects, if any, have gone through an internal quality assurance audit from you? [Probe: Level 1, Level 2, Level 3, Level 3 (new advisors), Level 4]
- G6. Do you have a quality assurance protocol? If so, can you send me a copy?
- G7. As a Service Organization, you may also have been audited by a Natural Resources Canada staff for quality assurance purposes. Besides usual processing done by NRCan, how many of your 2018 projects, if any, have gone through a quality assurance audit by NRCan?
- G8. Do you make any adjustments in the Parachute system if an issue is found in audits? [IF YES: On what basis do you make these adjustments? IF NO: Who is responsible for making the adjustments?]
- G9. Do you have a quality assurance report? If so, can you send me a copy?

Recommendations

We are almost done.

- H1. Do you have any concerns that we have not discussed with the way the program has been managed or delivered?
- H2. Do you have any suggestions on how to improve the Home Reno Rebate program?

END: Those are all the questions I have for you today.

I thank you very much for your collaboration and the time you took to answer our questions.



APPENDIX IV CERTIFIED ENERGY AUDITOR INTERVIEW GUIDE

Date & Time:

Interviewee Name:

Company Name:

Interviewer:

Table 1: Overview of Data Collection Activity

| Descriptor | This Instrument |
|----------------------------|-------------------------------------|
| Instrument Type | Telephone Interview |
| Estimated Time to Complete | 20-30 minutes |
| Population Description | Certified Energy Auditors |
| Contact List Size | |
| Completion Goal | 5 |
| Contact List Source | Enbridge Gas operating as Union Gas |
| Fielding Firm | Econoler |

Table 2: Research Issue and Associated Questions

| Research Issue | Associated Questions |
|---|----------------------|
| Respondent Roles and Responsibilities | A1-A3 |
| Program Offering and Implementation | |
| Are there opportunities to improve the efficacy of the program offering, including eligibility requirements? | C1-C9, E1 |
| Are there opportunities to improve program awareness and communications? | B1-B3 |
| Using Union's Market Research results, what is participant satisfaction with the program, including impact of postal strike on customer satisfaction? | NA |
| What is partner (CEAs) satisfaction with program, including their interactions with Union and service organizations? | D3, D5, E1, E5, F7 |



| Research Issue | Associated Questions |
|--|----------------------|
| Processes and Program Delivery | |
| Is the program administration and delivery approach, including activities of SOs, internal processes and risk mitigation, effective and efficient? | C1-C10, D1-D6 |
| Is the program theory and logic model complete and relevant? | NA |
| What, if any, are the difficulties or barriers to program delivery? | A4, C3, C4 |
| Data tracking and Quality Assurance | |
| Is program tracking, monitoring and reporting complete and effective? | F1-F8 |
| Is the CEA facing system meeting the data needs of CEA and Union? | F1-F8 |
| Are the quality control and assurance measures in place ensuring program data integrity? | G1-G7 |
| Are program processes consistent with program intentions? | A4, C1-C10 |
| Are the SOs adhering to the documentation retention protocols outlined in Unions' agreements with SOs? | G3 |
| Successes, Challenges and Opportunities | H1-H2 |

INTRODUCTION

Hello, may I speak with **[Contact name]**?

My name is **[Interviewer name]** and I'm calling from Econoler on behalf of Union Gas. Union Gas has contracted Econoler to evaluate the Home Reno Rebate program.

- Person responsible available **[CONTINUE]**
- Person responsible currently unavailable **[ARRANGE CALL BACK WITH THE RIGHT PERSON]**
- Refused **[THANK AND TERMINATE]**

Your responses will be kept confidential and we will not share the information you provided in a way that could identify your individual or corporate responses. [READ IF NECESSARY: The results of this evaluation will only be used to improve the program and will not affect your involvement in the program.]

Context

One of the main goals of this interview is to collect information to assess program outreach and delivery, barriers to participation, program communication, program data tracking and reporting, and possible program improvements.

Our discussion should take about 20-30 minutes.



Do you have any questions before we begin?

Respondent's Role and Involvement

The first questions will be about your business and your involvement with the Union Home Reno Rebate program.

A1. Are you part of a company or self-employed? What are your main functions? [PROBE: If company: Are you an employee of a Service Organization?]

A2. Besides doing energy audits, do [you /your company] also work as a contractor?

A3. How long have you been involved with the Home Reno Rebate program?

A4a. Do you consider your involvement in the Home Reno Rebate program as straight forward or complicated?

☐ Straight forward

☐ Complicated

A4b. If "Complicated", please indicate what makes your involvement in the program complicated?

Program Outreach

I would now like to discuss program outreach.

B1. Do you promote the Home Reno Rebate program to potential participants? If so, how?

B2. Besides that, how do potential participants learn about the Home Reno Rebate program? [PROBE: Do others recommend your services to potential participants?]

B3. Are there elements of the program that you find are generally not well-understood by participants? If so, which ones?



Program Delivery and Barriers

- C1. How many energy-efficient upgrades are typically recommended in your pre-assessment report and what are they?
- C2. How do you communicate the recommended energy-efficient upgrades to the participant? Anything else?
- ☐ Pre-assessment report
 - ☐ Discussion during pre-assessment
 - ☐ Follow-up after pre-assessment
 - ☐ Other, specify: _____
- C3. In general, are participants receptive to your suggestions of energy upgrades?
- C4. Which upgrades recommended in the assessment report are not typically implemented by participants? Why?
- C5. How, if at all, do you attempt to encourage customers to implement upgrades beyond what they may have initially considered?
- C6. Do you do any follow-up with participants after their pre-assessment audit?
- C7. The program data indicates that participants implement on average 2.8 measures per home. What can be done to encourage participants to implement more upgrades?
- C8. And specifically, for insulation, what do you think can improve the participant uptake of this measure?
- C9. From your perspective, what is the largest untapped opportunity for gas energy savings in participating houses?



C10. Who do you feel has the most influence in the type of upgrades to be implemented in participating homes?

- ☐ Homeowner
- ☐ Certified Energy Auditor
- ☐ Contractor
- ☐ Other, specify: _____

Communication with Service Organization and Union

D1. Now I would like to discuss your working relationship with Service Organizations. How many Service Organizations do you work with?

D2. How and how often do you usually communicate with the Service Organizations?

D3. Using a scale from 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied”, overall, how satisfied are you with the relationship you have with the Service Organizations? Why?

D4. Now thinking about your relationship with Union. How do you usually communicate with Union?

D5. Still on a scale of 1 to 10, overall, how satisfied are you with the relationship you have with Union? Why?

D6a. Do you believe that Union gives you sufficient opportunity to provide input on the program?

- ☐ Yes
- ☐ No

D6b. If no, what else can Union do to involve Energy Auditors?



Satisfaction

E1. Now I have some questions about your satisfaction towards the program. Using a scale from 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied”, how satisfied are you with...?

| Aspects of the program | Satisfaction Level (1 to 10) | If less than 8, please share the reason(s) |
|---|---------------------------------|---|
| a) The overall program | | |
| b) Program marketing and outreach activities initiated by Union | | |
| c) Eligible measures and equipment | | |
| d) Program incentive structures | | |

E2. Did you or anyone in your company receive training or information from Union about the program?
 If so, on which topic?

E3. If so, how satisfied are you with the information and/or training provided on a scale of 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied” ? Why?

If less than 8 → Why are you not more satisfied?

E4. Did you or anyone in your company receive training or information from a SO about the program?
 If so, on which topic?

E5. If so, how satisfied are you with the information and/or training provided by the SO on a scale of 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied” ? Why?

If less than 8 → Why are you not more satisfied?

E6. Is there any additional information, training or technical support you would like to receive?



Program Processes

Now, here are some questions regarding the program processes.

- F1. We understand that as a Certified Energy Auditors, you track and report the data captured in the pre-assessment and also track and report annual gas savings on the post assessment. Is this correct? Do you submit this information to your SO or directly to Union using the Parachute system?
- F2. Can you walk me through your process for tracking and reporting pre-assessment and post-assessment data into the Union system? [PROBE: Any other administrative support? Frequency of reporting activity (e.g. daily, weekly)?]
- F3. Approximately how much time does data entry and reporting take for a pre-assessment audit? And for a post-assessment audit?
Pre-Assessment:
Post-assessment:
- F4. What are the administrative steps taken upon completion of the post-assessment audit to finally submit file to [IF F1 = SUBMIT TO SO, READ = SO; IF F1 = SUBMITS TO UNION, READ = Union]? Approximately how many days does it take between completion of post-assessment audit and submitting final application to the [IF F1 = SUBMIT TO SO, READ = SO; IF F1 = SUBMITS TO UNION, READ = Union]?
- F5. What additional support could Union or your SO provide to reduce the time between the completion of post-assessment and reporting to [IF F1 = SUBMIT TO SO, READ = SO; IF F1 = SUBMITS TO UNION, READ = Union]?
- F6. How do you ensure that participant applying for Home Reno Rebate is the bill-payer?
- F7. Using a scale from 1 to 10 where 1 means “very dissatisfied” and 10 means “very satisfied”, how satisfied are you with the program tracking and reporting? Why?
- F8. What aspects of the data tracking and reporting system or process, if any, would you like to see changed or improved? How?



Quality Assurance

- G1. Does NRCan approve your modelled post-assessment file (E file)? What happens if NRCan identifies errors or issues in a file during their review process?
- G2. What verification activities, if any, do you undertake to ensure the quality control of the data entered into Parachute? Any other verification activities? [Probe: review by others, admin support]
- G3. How do you store and maintain files and documentation related to Union audits? [Probe: Length of time documentation is kept]
- G4. According to our information, you have done [X] projects in 2018 as part of the Home Reno Rebate program. Is that right? If not, how many projects?
- G5. How many of your projects, if any, have gone through a quality assurance audit by your Service Organization?
- G6. As a Certified Energy Auditor, you may also have been audited by a Natural Resources Canada staff for quality assurance purposes. Besides usual processing done by NRCan, how many of your 2018 projects, if any, have gone through a quality assurance audit by NRCan?
- G7. Do you make any adjustments in the Parachute system if an issue is found in audits by either Service Organization or NRCan? [IF YES: How do you make these adjustments?]

Recommendations

We are almost done.

- H1. Do you have any concerns that we have not discussed with the way the program has been managed or delivered?
- H2. Do you have any suggestions on how to improve the Home Reno Rebate program?



END: Those are all the questions I have for you today.

I thank you very much for your collaboration and the time you took to answer our questions.



APPENDIX V

HRR PROGRAM OFFERING THEORY

| Link | Offering Theory Description | Performance Indicator(s) | Data Sources |
|-----------|---|--|--------------|
| 0 | UGL Residential Home Reno Rebate offering will be affected by external factors. These external factors include but are not limited to: cost of natural gas and electricity, other utility offerings, and the economy. | This link is not included within the scope of the defined evaluation approach. | - |
| 1 | UGL enrolls Service organizations (SOs). UGL develops a network of SOs that can guide customers through each stage of the offering. This activity involves identifying, pursuing and screening SOs for participation in the offering. | This link is not included within the scope of the defined evaluation approach. | - |
| 2 | UGL implements mass marketing and communication activities (e.g. radio, newspapers, billboard ads, outdoor signs, and digital media) to foster widespread awareness of the Home Reno Rebate offering. Information about the offering is provided to customers to foster participation in the Home Reno Rebate. | This link is not included within the scope of the defined evaluation approach. | - |
| 3 | UGL provides the SOs with targeted marketing materials (e.g. flyers for direct mail and door hangers) to homes that are likely to benefit from the offering. | This link is not included within the scope of the defined evaluation approach. | - |
| 4 | UGL provides training sessions to SOs. UGL provides training and coaching to help the SOs understand the structure of the HRR offering, how to sell energy efficiency, and how to provide a positive customer experience. | This link is not included within the scope of the defined evaluation approach. | - |
| 5 | UGL provides funding of up to \$550 for the cost of the pre and post-renovation assessments. | This link is not included within the scope of the defined evaluation approach. | - |
| 6 | UGL provides incentives to participants who install at least two of the recommended measures to offset the cost of energy efficient measures. | This link is not included within the scope of the defined evaluation approach. | - |
| 7 | SOs facilitate offering delivery. SOs guide customers through each stage of the offering, manage participant applications and hire certified energy advisors (CEAs) to conduct pre and post-renovation energy assessments. | This link is not included within the scope of the defined evaluation approach. | - |
| 8,9,11,12 | Informed customers understand benefits of the Home Reno Rebate offering and how to schedule a pre-renovation assessment. | This link is not included within the scope of the defined evaluation approach. | - |



Home Reno Rebate Program Offering
Union Gas
Final Report

| Link | Offering Theory Description | Performance Indicator(s) | Data Sources |
|--------|---|---|----------------------------|
| 10 | SOs understand the offering and promote it to their contractor network. | This link is not included within the scope of the defined evaluation approach. | - |
| 13 | Contractors understand the offering and promote it to prospective participants. | This link is not included within the scope of the defined evaluation approach. | - |
| 14, 15 | SOs hire CEAs to conduct pre-renovation assessments and identify renovation options. The customer selects a SO that, in turn, hires a CEA to conduct a pre-renovation assessment. The CEA performs a site visit to establish a home energy consumption baseline and identify potential renovation options. The CEA reviews the results of the pre-renovation assessment with the participant and discusses renovation options. | This link is not included within the scope of the defined evaluation approach. | - |
| 16 | External factors such as energy prices and other program influences on prospective participants. Through other offerings or cross-promotional activities, participants learn about the HRR program offering and understand the benefits. | This link is not included within the scope of the defined evaluation approach. | |
| 17 | Participants decide to install measures. Participants review opportunities identified by CEAs and decide to carry out renovations. Participants solicit contractor bids and select a contractor to install at least two of the measures recommended. | The conversion rate between the D and E assessments. | DSMT |
| 18, 19 | Measures are installed by contractors. | The number of measures installed by each participant. | DSMT |
| 20 | SOs hire CEAs to conduct a post-renovation assessment. The CEAs conduct post-renovation assessments by conducting site visits to establish home energy consumption after measure installation. | The number of E assessments completed. | DSMT |
| 21 | Participants have increased their level of energy efficiency awareness and energy literacy as a result of participating in the offering. | The proportion of participants who remember having received information about the energy efficiency of their home as part of their participation in the HRR program offering. | Participant surveys |
| 22 | Installed measures result in measured energy savings. | Net gas savings achieved by the offering. | Impact evaluation analysis |
| 23 | Participants are satisfied as a result of participating in the offering. | Satisfaction with the HRR program offering. | Participant surveys |
| | | Satisfaction with SO and CEA interactions. | Participant surveys |



EGD RATE ZONE: ACCOUNT BALANCES AND APPROVALS SOUGHT

Account Balances for Disposition

1. The EGD rate zone account balances set out in Table 1, which are the subject of this application in-part, are consistent with the EC's Verification Report and the EC's opinion on energy savings, lost revenue, shareholder incentive amounts and cost-effectiveness, with the exception of the DSMVA as it relates to the EGD rate zone DSM IT Project as discussed in further detail at Exhibit B, Tab 3, Schedule 1.

Table 1
2019 DSM Deferral and Variance Account Balances – EGD Rate Zone

| Account | Total |
|--------------------------------|---------------------|
| DSM Variance Account | \$6,421,667 |
| DSM Incentive Deferral Account | \$6,717,372 |
| LRAM Variance Account | \$9,082 |
| Interest | \$128,637 |
| Total | \$13,276,758 |

2. The final 2019 DSM Annual Report for the EGD rate zone is set out at Exhibit B, Tab 2, Schedule 1.

Approvals Sought

3. Enbridge Gas is seeking the following approvals:
 - Approval of the EGD rate zone's DSMVA, DSMIDA, and LRAMVA balances as set out in Table 1.
 - An Order providing for the clearance through to rates of the amounts set out in Table 1 as a one-time adjustment to be cleared within Enbridge Gas's next available QRAM application following the Board's approval, effective as soon as October 1, 2021.

EGD RATE ZONE: RATE ALLOCATION

1. The following evidence describes the three DSM-related deferral and variance accounts specific to the EGD rate zone for which Enbridge Gas requests clearance of balances recorded relating to 2019 DSM activities. This evidence also describes the basis on which these amounts will be allocated to rate classes within the EGD rate zone, as well as the methodology for incorporation into rates.

Demand Side Management Variance Account

2. The EGD rate zone DSMVA balance for 2019 is \$6.422 million before interest. The DSMVA is used to track the variance between actual DSM spending by rate class versus the budgeted amount included in rates by rate class. The actual DSMVA spending variance amount relative to the amount budgeted for each rate class is allocated to that rate class for disposition purposes.¹
3. Enbridge Gas followed the OEB-approved methodology for the EGD rate zone to calculate the 2019 DSMVA balances. All DSM costs are allocated to rate classes based on the allocation of customer incentive costs between rate classes, with the exception of Low Income Program Costs, which are allocated based on OEB approved LEAP revenues.²

DSMVA 15% Overspend

4. As per the Guidelines, Enbridge Gas is eligible to recover up to an additional 15% overspend above its annual OEB-approved DSM budget through the DSMVA as long as its overall weighted scorecard target on a pre-audited basis for one or more of its scorecards has been achieved, provided the overspend was on

¹ Guidelines, page 36-38.

² Guidelines, page 36-38; EB-2015-0049, EGD 2015-2020 DSM Plan, Exhibit B, Tab 2, Schedule 4, page 14.

program expenses.³ Enbridge Gas utilized the DSMVA mechanism to overspend on the Resource Acquisition, Low Income and Market Transformation scorecards in the EGD rate zone in the 2019 DSM program year. Each of these scorecards achieved pre-audit results above the weighted scorecard targets required for the 15% overspend to be accessed. The pre-audit scorecard results are summarized in Table 1.

Table 1
2019 DSM Scorecard Results (Pre-Audit)

| Scorecard | Total Scorecard Target Achieved |
|----------------------------|--|
| 2019 Resource Acquisition | 116% |
| 2019 Low Income | 104% |
| 2019 Market Transformation | 119% |

Achievable Potential Study

5. During 2019, Enbridge Gas was allocated \$0.463 million of costs⁴ related to the 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study. As no costs related to this study were included the OEB Approved 2019 DSM budget for Enbridge Gas in the EGD rate zone, these costs are being sought for recovery through the DSMVA in this proceeding. This treatment has been aligned between the two utilities and is consistent with the recovery of these costs in the 2016 Disposition of DSM Deferral and Variance accounts (EB-2018-0300) proceeding for the Union rate zones.

Budget Transfers Between Programs

6. Section 6.6 of the Guidelines states that Enbridge Gas should inform the OEB and stakeholders in the event that cumulative fund transfers among OEB-approved DSM programs exceed 30% of the approved annual DSM budget for an individual

³ Guidelines, pages 36-38.

⁴ \$0.278 million allocated to the EGD rate zone – Exhibit A ,Tab 4, Schedule 1, Table 8.7, page. 68

DSM program. Enbridge Gas did not transfer more than 30% of program budget funds between programs in the 2019 DSM program years for the EGD rate zone.

EGD DSM Tracking and Reporting System (IT) Project

7. As part of Enbridge Gas's (formerly EGD) 2015-2020 DSM Plan (EB-2015-0049) Enbridge Gas requested and the OEB subsequently approved, a total of \$5 million of incremental budget for the development of a new Tracking and Reporting System for the EGD rate zone, upon which the tracking, monitoring, evaluation and verification of DSM program offers and results is dependent.⁵ In 2015, Enbridge Gas (EGD) originally estimated the cost of this system upgrade to be approximately \$5 million and forecast that the majority of these costs would be incurred in 2015 and 2016. Accordingly, the OEB approved, and Enbridge Gas has incorporated, a \$1 million annual DSM IT chargeback to be included in rates from 2016 through 2020.
8. As set out in Table 2, Enbridge Gas incurred costs associated with the development of its upgraded Tracking and Reporting System from 2016 through 2019. The system was ultimately implemented in March 18, 2019, at a total final cost of \$6.087 million. For the 2016 DSM program year, the first year that the annual DSM IT charge back was included in rates, Enbridge Gas (EGD) credited ratepayers back the amounts not actually spent on its upgraded Tracking and Reporting System (approximately \$900,000). In 2017 and 2018, Enbridge Gas (EGD) spent more than the IT charge back amount included in rates (approximately \$3.644 million). In 2019, Enbridge Gas spent less than the IT charge back amount included in rates (approximately \$658,000). This variance in 2019 is being credited back to rate payers through the DSMVA in this proceeding.

⁵ EB-2015-0029/0049, OEB Decision and Order, January 20, 2016, Page 57 and Schedule A, Enbridge Gas Distribution Inc. 2016 to 2020 DSM Budget and Targets.

9. In its decision in the 2017 and 2018 DSM Deferral and Variance Account proceeding, the OEB disallowed \$0.544 million of DSM IT costs, and directed Enbridge Gas to credit this amount back to the 2017 DSMVA in the EGD rate zone. This adjustment is included in Table 2 below.

Table 2
DSM IT Tracking and Reporting System Development Costs – EGD Rate Zone

| <i>(\$millions)</i> | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
| Approved Budget | \$0.000 | \$1.000 | \$1.000 | \$1.000 | \$1.000 | \$1.000 | \$5.000 |
| Actual Spend | \$0.000 | \$0.100 | \$3.109 | \$2.535 | \$0.342 | \$0.000 | \$6.087 |
| Variance⁶ | \$0.000 | (\$0.900) | \$2.109 | \$1.535 | (\$0.658) | (\$1.000) | \$1.087 |
| Cost Disallowance | \$0.000 | \$0.000 | (\$0.544) | \$0.000 | \$0.000 | \$0.000 | (\$0.544) |
| Adjusted Variance | \$0.000 | (\$0.900) | \$1.565 | \$1.535 | (\$0.658) | (\$1.000) | \$0.543 |

Deferred Incentives

10. Consistent with section 5.3.2 of the OEB’s Mid-Term Review Report and the OEB-approved DSMVA Accounting Orders as set out in the OEB’s Decision and Order on Enbridge Gas’s 2017 and 2018 DSM Deferral and Variance Account Disposition Proceeding (EB-2020-0067),⁷ Table 8.7 of the final 2019 DSM Annual Report for the EGD rate zone include amounts for customer incentive spend deferred to future years for offerings where incentives are paid when future milestones/activities are reached.
11. Table 3 provides continuity schedules of the deferred incentive balances for the Residential Savings by Design (“RSBD”), the Commercial Savings by Design (“CSBD”) and the Affordable Housing New Construction (“AHNC”) offerings for the 2017 and 2018 DSM program years in the EGD rate zone being tracked within the DSMVA.

⁶ Negative values indicate amounts being credited/reimbursed to ratepayers.

⁷ EB-2020-0067, OEB Decision and Order, January 28, 2021

Table 3
2019 DSM Deferred Incentives Schedule - EGD Rate Zone

| Offering (\$MM) | TOTAL | 2017 | | | | 2018 | | | | 2019 | TOTAL | 2019 Deposit Expiration |
|--------------------------|---------------------------|---------------------------|---------------|---------------|---------------------|---------------------------|---------------|---------------|---------------------|---------------|---------------------|-------------------------|
| | Beginning of Year Balance | Beginning of Year Balance | Withdrawals | | End of Year Balance | Beginning of Year Balance | Withdrawals | | End of Year Balance | Deposits | End of Year Balance | |
| | | | Utilized | Expired | | | Utilized | Expired | | | | |
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | $e = b - c - d$ | <i>f</i> | <i>g</i> | <i>h</i> | $i = f - g - h$ | <i>j</i> | $k = e + i + j$ | |
| RSBD | \$3.51 | \$1.62 | \$0.78 | \$0.00 | \$0.84 | \$1.89 | \$0.66 | \$0.00 | \$1.23 | \$2.22 | \$4.29 | 31-Dec-22 |
| CSBD | \$0.11 | \$0.03 | \$0.02 | \$0.00 | \$0.02 | \$0.08 | \$0.05 | \$0.00 | \$0.03 | \$0.15 | \$0.20 | 31-Dec-24 |
| AHNC | \$1.46 | \$0.65 | \$0.00 | \$0.00 | \$0.65 | \$0.81 | \$0.02 | \$0.00 | \$0.80 | \$0.81 | \$2.26 | 31-Dec-24 |
| TOTAL⁸ | \$5.08 | \$2.30 | \$0.79 | \$0.00 | \$1.51 | \$2.78 | \$0.72 | \$0.00 | \$2.06 | \$3.18 | \$6.75 | |

Demand Side Management Incentive Deferral Account

12. The EGD rate zone DSMIDA balance for 2019 is \$6.717 million before interest. The purpose of the DSMIDA is to record the shareholder incentive amount earned by a natural gas utility as a result of its DSM programs.⁹ DSM shareholder incentive amounts are allocated to the rate classes in proportion to the actual DSM spending by rate class in 2019.

13. Tables 8.0 – 8.3 of the final 2019 DSM Annual Report for the EGD rate zone provide details of the DSM incentive achieved by scorecard.

Lost Revenue Adjustment Mechanism Variance Account

14. The EGD rate zone LRAMVA balance for 2019 is \$0.009 million before interest. The LRAMVA is used to track, at the rate class level, the variance between the actual impact of DSM activities (volume savings) undertaken by the natural gas

⁸ Figures may not add exactly due to rounding

⁹ Guidelines, page 39.

utility and the forecasted impact included in distribution rates.¹⁰ The LRAMVA balance is allocated to rate classes on the same basis as lost revenues were experienced such that the LRAMVA provides a true-up by rate class.

15. Consistent with historical practice, the annual rate setting process in the EGD rate zone includes a DSM volumetric adjustment for the expected natural gas savings that are partially effective for the current year, and the balance of DSM volumes not captured in the previous years' base rate volumes. Therefore, the 2019 LRAMVA balance contains a variance related to the 2019 DSM program year only. See Exhibit B, Tab 3, Schedule 1, Appendix A1 for a detailed presentation of the 2019 LRAMVA balance of \$0.009 million for the EGD Rate Zone. Additionally, see Table 8.4 of the final 2019 DSM Annual Report for further information on LRAM for the 2019 DSM program year.

Rate Allocation

16. Table 4 summarize the allocation of Enbridge Gas's EGD rate zone-related DSM deferral and variance account balances for the 2019 DSM program years to rate classes.

¹⁰ Guidelines, page 39.

Table 4
2019 DSM Deferral and Variance Account Balances by Rate Class – EGD Rate Zone

| Rate Class | DSMVA | DSMIDA | LRAMVA ^{1, 2} | TOTAL DEFERRAL/ VARIANCE BALANCE |
|--------------|--------------------|--------------------|------------------------|--|
| RATE 1 | \$11,705,571 | \$4,641,770 | N/A | \$16,347,341 |
| RATE 6 | (\$914,679) | \$1,820,683 | N/A | \$906,004 |
| RATE 9 | (\$450) | \$224 | \$0 | (\$226) |
| RATE 100 | \$339,027 | \$31,264 | \$0 | \$370,291 |
| RATE 110 | (\$869,496) | \$78,191 | (\$3,613) | (\$794,919) |
| RATE 115 | (\$449,344) | \$77,794 | \$7,180 | (\$364,370) |
| RATE 125 | (\$16,863) | \$8,398 | \$0 | (\$8,465) |
| RATE 135 | \$15,366 | \$24,489 | \$9,412 | \$49,267 |
| RATE 145 | (\$1,489,293) | \$7,054 | (\$1,205) | (\$1,483,444) |
| RATE 170 | (\$1,891,201) | \$24,033 | (\$2,691) | (\$1,869,859) |
| RATE 200 | (\$5,846) | \$2,911 | \$0 | (\$2,935) |
| RATE 300 | (\$1,124) | \$560 | \$0 | (\$564) |
| TOTAL | \$6,421,667 | \$6,717,372 | \$9,082 | \$13,148,121 |

NOTES:

(1) Rate 1 and Rate 6 are not included in the LRAM amount as these rate classes are covered under the Average Use True-Up Variance Account ("AUTUVA").

(2) Rates 9, 125, 200 & 300 do not have any LRAM component in the rate allocation since customers in these rate classes are not eligible for DSM programs. These rate classes will be subject to rate allocations for DSMVA and DSMIDA balances related to Low Income Programs.

Disposition Methodology

17. Enbridge Gas proposes to dispose of the 2019 DSM-related deferral and variance account balances as a one-time billing adjustment. For all customers in the EGD rate zone, the one-time billing adjustment will be derived for each customer individually by applying the disposition unit rates to each customer's actual consumption volume for the period January 1, 2019 to December 31, 2019.

18. This is the first application Enbridge Gas is proposing a common disposition approach between the EGD and Union rate zones. In prior years, Enbridge Gas's disposition approach varied between rate zones due to different billing systems and processes which prevented the Company from proposing the same disposition approach for all customers.¹¹
19. Enbridge Gas proposes to dispose of the approved 2019 DSM deferral and variance account balances with the first available QRAM application following the Board's approval, as early as October 1, 2021.
20. The allocation of 2019 DSM Deferral and Variance account balances and the derivation of clearance unit rates for the EGD rate zone are consistent with the treatment in prior years. The 2019 disposition unit rate for each rate class and type of service is set out at Exhibit B, Tab 2, Schedule 1, Appendix A2.
21. Exhibit B, Tab 2, Schedule 1, Appendixes A3 to A5 provide details of the derivation of proposed unit rates:
 - Appendix A3 determines the balances (principal and interest) to be cleared for each DSM deferral and variance account for the 2019 DSM program year;

¹¹ In Enbridge Gas's evidence for the 2017/2018 DSM Deferral and Variance Account Disposition Application (EB-2020-0067 Exhibit B, Tab 3, Schedule 1, page 8), the Company anticipated that "starting in mid-2021 at the earliest it will be able to adopt a common disposition period, as well as a common disposition approach between the EGD and Union rate zones once integrated systems and processes are implemented".

- Appendix A4 shows the account balance allocations by rate class and type of account based on cost drivers for each type of account for the 2019 DSM program year; and
- Appendix A5 illustrates the derivation of unit rates for the 2019 DSM program year, based on the balances and actual 2019 consumption volumes for each rate class and service type.

ENBRIDGE GAS INC.
EGD RATE ZONE
2019 LRAMVA Balance

| Line | | 2019 Audited Volumes ⁽¹⁾ 10 ³ m ³ | 2019 LRAM Volumes in 2019 Rates 10 ³ m ³ | 2019 Volume Variance 10 ³ m ³ | 2019 Distribution Margin \$/10 ³ m ³ | 2019 LRAMVA (\$) |
|------------|--------------------|---|---|--|---|------------------------|
| <u>No.</u> | <u>Particulars</u> | <u>(a)</u> | <u>(b)</u> | <u>(c) = (a) - (b)</u> | <u>(d)</u> | <u>(e) = (c) x (d)</u> |
| 1 | Rate 110 | 1,841 | 2,449 | (608) | 5.944 | (3,613) |
| 2 | Rate 115 | 4,304 | 836 | 3,467 | 2.071 | 7,180 |
| 3 | Rate 135 | 618 | 79 | 539 | 17.467 | 9,412 |
| 4 | Rate 145 | - | 98 | (98) | 12.285 | (1,205) |
| 5 | Rate 170 | 206 | 1,972 | (1,766) | 1.524 | (2,691) |
| 6 | Total | <u>6,969</u> | <u>5,435</u> | <u>1,535</u> | | <u>9,082</u> |

Notes:

⁽¹⁾ Volumes reflect 2019 audited volumes, adjusted for month of install.

UNIT RATE AND TYPE OF SERVICE: CLEARING IN OCTOBER 2021

| | | COL.1 |
|---|---------------------|----------------------------------|
| | | Unit Rate (€/m ³) |
| <u>Bundled Services:</u> | | |
| RATE 1 | - SYSTEM SALES | 0.3073 |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.3073 |
| | - DAWN T-SERVICE | 0.3073 |
| | - WESTERN T-SERVICE | 0.3073 |
| RATE 6 | - SYSTEM SALES | 0.0175 |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.0175 |
| | - DAWN T-SERVICE | 0.0175 |
| | - WESTERN T-SERVICE | 0.0175 |
| RATE 9 | - SYSTEM SALES | (2.5272) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.0000 |
| | - DAWN T-SERVICE | 0.0000 |
| | - WESTERN T-SERVICE | 0.0000 |
| RATE 100 | - SYSTEM SALES | 2.4205 |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 2.4205 |
| | - DAWN T-SERVICE | 2.4205 |
| | - WESTERN T-SERVICE | 0.0000 |
| RATE 110 | - SYSTEM SALES | (0.0911) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | (0.0911) |
| | - DAWN T-SERVICE | (0.0911) |
| | - WESTERN T-SERVICE | (0.0911) |
| RATE 115 | - SYSTEM SALES | (0.0827) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | (0.0827) |
| | - DAWN T-SERVICE | (0.0827) |
| | - WESTERN T-SERVICE | 0.0000 |
| RATE 135 | - SYSTEM SALES | 0.0789 |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.0000 |
| | - DAWN T-SERVICE | 0.0789 |
| | - WESTERN T-SERVICE | 0.0789 |
| RATE 145 | - SYSTEM SALES | (4.8938) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.0000 |
| | - DAWN T-SERVICE | (4.8938) |
| | - WESTERN T-SERVICE | 0.0000 |
| RATE 170 | - SYSTEM SALES | (0.6557) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | (0.6557) |
| | - DAWN T-SERVICE | (0.6557) |
| | - WESTERN T-SERVICE | 0.0000 |
| RATE 200 | - SYSTEM SALES | (0.0015) |
| | - BUY/SELL | 0.0000 |
| | - ONTARIO T-SERVICE | 0.0000 |
| | - DAWN T-SERVICE | (0.0015) |
| | - WESTERN T-SERVICE | 0.0000 |
| <u>Unbundled Services (Billing based on CD):</u> | | |
| RATE 125 | - All | (0.0908) |
| RATE 300 | - All | (3.5943) |
| RATE 332 | - All | 0.0000 |

DETERMINATION OF BALANCES TO BE CLEARED
FROM THE 2019 DSM DEFERRAL AND VARIANCE ACCOUNTS

| ITEM NO. | | COL.1 | COL.2 | COL.3 (COL.1 + COL.2) |
|-------------|----------------------------------|--------------------------------------|---------------------|----------------------------------|
| | | PRINCIPAL FOR CLEARING (\$000) | INTEREST (\$000) | TOTAL FOR CLEARING (\$000) |
| 1. | DEMAND SIDE MANAGEMENT | 6,421.7 | 27.5 | 6,449.1 |
| 2. | LOST REVENUE ADJ MECHANISM | 9.1 | 0.0 | 9.1 |
| 3. | DEMAND SIDE MANAGEMENT INCENTIVE | 6,717.4 | 101.1 | 6,818.5 |
| 4. | TOTAL | <u>13,148.1</u> | <u>128.6</u> | <u>13,276.8</u> |

2019 CLASSIFICATION AND ALLOCATION OF DEFERRAL AND VARIANCE ACCOUNT BALANCES

| | | COL.1 | | | |
|-------------|---|----------|--|--|--|
| ITEM NO. | CLASSIFICATION | TOTAL | | | |
| | | (\$000) | | | |
| 1. | DEMAND SIDE MANAGEMENT (DSMVA) | 6,449.1 | | | |
| 2. | LOST REVENUE ADJ MECHANISM (LRAMVA) | 9.1 | | | |
| 3. | DEMAND SIDE MANAGEMENT INCENTIVE (DSMIDA) | 6,818.5 | | | |
| 4. | TOTAL | 13,276.8 | | | |

| | | COL.A | COL.B | COL.C | COL.D = A+B+C |
|------|------------|-----------|---------|---------|---------------|
| | ALLOCATION | DSMVA | LRAMVA | DSMIDA | TOTAL |
| | | (\$000) | (\$000) | (\$000) | (\$000) |
| 1.1 | RATE 1 | 11,755.6 | 0.0 | 4,711.7 | 16,467.3 |
| 1.2 | RATE 6 | (918.6) | 0.0 | 1,848.1 | 929.5 |
| 1.3 | RATE 9 | (0.5) | 0.0 | 0.2 | (0.2) |
| 1.4 | RATE 100 | 340.5 | 0.0 | 31.7 | 372.2 |
| 1.5 | RATE 110 | (873.2) | (3.6) | 79.4 | (797.5) |
| 1.6 | RATE 115 | (451.3) | 7.2 | 79.0 | (365.1) |
| 1.7 | RATE 125 | (16.9) | 0.0 | 8.5 | (8.4) |
| 1.8 | RATE 135 | 15.4 | 9.5 | 24.9 | 49.7 |
| 1.9 | RATE 145 | (1,495.7) | (1.2) | 7.2 | (1,489.7) |
| 1.10 | RATE 170 | (1,899.3) | (2.7) | 24.4 | (1,877.6) |
| 1.11 | RATE 200 | (5.9) | 0.0 | 3.0 | (2.9) |
| 1.12 | RATE 300 | (1.1) | 0.0 | 0.6 | (0.6) |
| 1.13 | RATE 332 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.14 | TOTAL | 6,449.1 | 9.1 | 6,818.5 | 13,276.8 |

2019 ALLOCATION AND UNIT RATE DERIVATION BY TYPE OF SERVICE

| | | COL.1 | COL.2 | COL.3 (COL.1 / COL.2) |
|---|----------------------|--------------------------|----------------------------------|----------------------------------|
| | | TOTAL BALANCE (\$000) | 2019 VOLUME (m ³) | UNIT RATE (¢/m ³) |
| <u>Bundled Services:</u> | | | | |
| RATE 1 | - SYSTEM SALES | 16,020.8 | 5,213,290,041 | 0.3073 |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 1.0 | 323,521 | 0.3073 |
| | - DAWN T-SERVICE | 334.5 | 108,854,995 | 0.3073 |
| | - WBT | 111.0 | 36,120,942 | 0.3073 |
| RATE 6 | - SYSTEM SALES | 567.1 | 3,233,687,997 | 0.0175 |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 11.6 | 65,903,170 | 0.0175 |
| | - DAWN T-SERVICE | 313.0 | 1,784,712,280 | 0.0175 |
| | - WBT | 37.8 | 215,718,392 | 0.0175 |
| RATE 9 | - SYSTEM SALES | (0.2) | 8,875 | (2.5272) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 0.0 | 0 | 0.0000 |
| | - DAWN T-SERVICE | 0.0 | 0 | 0.0000 |
| | - WBT | 0.0 | 0 | 0.0000 |
| RATE 100 | - SYSTEM SALES | 304.4 | 12,577,005 | 2.4205 |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 9.1 | 376,692 | 2.4205 |
| | - DAWN T-SERVICE | 58.7 | 2,423,557 | 2.4205 |
| | - WBT | 0.0 | 0 | 0.0000 |
| RATE 110 | - SYSTEM SALES | (62.7) | 68,784,816 | (0.0911) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | (28.8) | 31,648,643 | (0.0911) |
| | - DAWN T-SERVICE | (695.7) | 763,632,549 | (0.0911) |
| | - WBT | (10.3) | 11,329,698 | (0.0911) |
| RATE 115 | - SYSTEM SALES | (0.6) | 740,520 | (0.0827) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | (150.2) | 181,742,053 | (0.0827) |
| | - DAWN T-SERVICE | (214.2) | 259,132,471 | (0.0827) |
| | - WBT | 0.0 | 0 | 0.0000 |
| RATE 135 | - SYSTEM SALES | 1.3 | 1,630,676 | 0.0789 |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 0.0 | 0 | 0.0000 |
| | - DAWN T-SERVICE | 43.6 | 55,289,161 | 0.0789 |
| | - WBT | 4.8 | 6,099,997 | 0.0789 |
| RATE 145 | - SYSTEM SALES | (78.2) | 1,597,409 | (4.8938) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 0.0 | 0 | 0.0000 |
| | - DAWN T-SERVICE | (1,411.5) | 28,843,393 | (4.8938) |
| | - WBT | 0.0 | 0 | 0.0000 |
| RATE 170 | - SYSTEM SALES | (119.5) | 18,232,955 | (0.6557) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | (928.1) | 141,542,754 | (0.6557) |
| | - DAWN T-SERVICE | (830.0) | 126,582,275 | (0.6557) |
| | - WBT | 0.0 | 0 | 0.0000 |
| RATE 200 | - SYSTEM SALES | (2.3) | 152,503,311 | (0.0015) |
| | - BUY/SELL | 0.0 | 0 | 0.0000 |
| | - T-SERVICE EXCL WBT | 0.0 | 0 | 0.0000 |
| | - DAWN T-SERVICE | (0.7) | 44,375,615 | (0.0015) |
| | - WBT | 0.0 | 0 | 0.0000 |
| <u>Unbundled Services: (Billing based on CD)</u> | | | | |
| RATE 125 | - All | (8.4) | 9,260,357 | (0.0908) |
| RATE 300 | - All | (0.6) | 15,600 | (3.5943) |
| RATE 332 | - All | 0.0 | 31,144,563 | 0.0000 |
| TOTAL | | <u>13,276.8</u> | | |

EGD RATE ZONE: ESTIMATED ANNUAL BILL IMPACT

1. For a Rate 1 customer in the EGD rate zone with annual consumption of 2,400 m³, the one-time billing adjustment is a charge of approximately \$7.40.
2. Bill impacts of the proposed disposition for the EGD rate zone are set out at Exhibit B, Tab 3, Schedule 1, Appendix A1.

**Enbridge Gas Distribution Inc.
2019 DSM Deferral and Variance Account Clearing
Bill Adjustment in October 2021 for Typical Customers**

| ITEM NO. | COL.1 | COL.2 | COL.3 | COL.4 | COL.5 | COL.6 | COL.7 (COL.2 x COL.3) | COL.8 (COL.2 x COL.4) | COL.9 (COL.2 x COL.5) | COL.10 (COL.2 x COL.6) |
|-------------------------|-----------------------------------|----------------------------|--------------|-------------------|----------------|-------------------|--------------------------|-----------------------------|--------------------------|-----------------------------|
| | | ANNUAL VOLUME m³ | UNIT RATE | | | | BILL ADJUSTMENT | | | |
| <u>GENERAL SERVICE</u> | | | <u>Sales</u> | <u>Ontario TS</u> | <u>Dawn TS</u> | <u>Western TS</u> | <u>Sales Customers</u> | <u>Ontario TS Customers</u> | <u>Dawn TS Customers</u> | <u>Western TS Customers</u> |
| | | | c/m³ | c/m³ | c/m³ | c/m³ | \$ | \$ | \$ | \$ |
| 1.1 | RATE 1 RESIDENTIAL | | | | | | | | | |
| 1.2 | Heating & Water Heating | 2,400 | 0.3073 | 0.3073 | 0.3073 | 0.3073 | 7.4 | 7.4 | 7.4 | 7.4 |
| 2.1 | RATE 6 COMMERCIAL | | | | | | | | | |
| 2.2 | Commercial - Heating & Other Uses | 22,606 | 0.0175 | 0.0175 | 0.0175 | 0.0175 | 4.0 | 4.0 | 4.0 | 4.0 |
| 2.3 | General Use | 43,285 | 0.0175 | 0.0175 | 0.0175 | 0.0175 | 7.6 | 7.6 | 7.6 | 7.6 |
| <u>CONTRACT SERVICE</u> | | | | | | | | | | |
| 3.1 | RATE 100 | | | | | | | | | |
| 3.2 | Industrial - small size | 339,188 | 2.4205 | 2.4205 | 2.4205 | 0.0000 | 8,210.2 | 8,210.2 | 8,210.2 | - |
| 4.1 | RATE 110 | | | | | | | | | |
| 4.2 | Industrial - small size, 50% LF | 598,568 | (0.0911) | (0.0911) | (0.0911) | (0.0911) | (545.3) | (545.3) | (545.3) | (545.3) |
| 4.3 | Industrial - avg. size, 75% LF | 9,976,121 | (0.0911) | (0.0911) | (0.0911) | (0.0911) | (9,088.1) | (9,088.1) | (9,088.1) | (9,088.1) |
| 5.1 | RATE 115 | | | | | | | | | |
| 5.2 | Industrial - small size, 80% LF | 4,471,609 | (0.0827) | (0.0827) | (0.0827) | 0.0000 | (3,696.7) | (3,696.7) | (3,696.7) | - |
| 5.3 | Industrial - large size, 80% LF | 69,832,850 | (0.0827) | (0.0827) | (0.0827) | 0.0000 | (57,731.8) | (57,731.8) | (57,731.8) | - |
| 6.1 | RATE 135 | | | | | | | | | |
| 6.2 | Industrial - Seasonal Firm | 598,567 | 0.0789 | 0.0000 | 0.0789 | 0.0789 | 472.5 | - | 472.5 | 472.5 |
| 7.1 | RATE 145 | | | | | | | | | |
| 7.2 | Commercial - avg. size | 598,568 | (4.8938) | 0.0000 | (4.8938) | 0.0000 | (29,292.7) | - | (29,292.7) | - |
| 8.1 | RATE 170 | | | | | | | | | |
| 8.2 | Industrial - avg. size, 75% LF | 9,976,121 | (0.6557) | (0.6557) | (0.6557) | 0.0000 | (65,411.5) | (65,411.5) | (65,411.5) | - |

UNION RATE ZONES: ACCOUNT BALANCES AND APPROVALS SOUGHT

Account Balances for Disposition

1. The Union rate zones account balances set out in Table 1, which are the subject of this application in-part, are consistent with the EC's Verification Report and the EC's opinion on energy savings, lost revenue, shareholder incentive amounts and cost-effectiveness.

Table 1
2019 DSM Deferral and Variance Account Balances - Union Rate Zones

| Account | Total |
|--------------------------------|--------------------|
| DSM Incentive Deferral Account | \$5,950,363 |
| DSM Variance Account | \$2,335,533 |
| LRAM Variance Account | \$928,440 |
| Interest | \$164,991 |
| Total | \$9,379,327 |

2. Final 2019 DSM Annual Report for the Union rate zones is set out at Exhibit C, Tab 2, Schedule 1.

Approvals Sought

3. Enbridge Gas is seeking the following approvals:
 - Approval of the Union rate zones' DSMVA, DSMIDA, and LRAMVA balances, as set out in Table 1.
 - An Order providing for the clearance through to rates of the amounts set out in Table 1 as a one-time adjustment for all rate classes in the Union rate zones, to be cleared within Enbridge Gas's next available QRAM application following the Board's approval, effective as soon as October 1, 2021.

UNION RATE ZONES: RATE ALLOCATION

1. The following evidence describes the three DSM-related deferral and variance accounts specific to the Union rate zones for which Enbridge Gas requests clearance of balances recorded relating to 2019 DSM activities. This evidence also describes the basis on which these amounts will be allocated to rate classes within the Union rate zones, as well as the methodology for their incorporation into rates.

Demand Side Management Variance Account

2. The Union rate zones DSMVA balance for 2019 is \$2.336 million before interest. The DSMVA is used to track the variance between actual DSM spending by rate class versus the budgeted amount included in rates by rate class. The actual DSMVA spending variance amount relative to the amount budgeted for each rate class is allocated to that rate class for disposition purposes.¹
3. Enbridge Gas followed the OEB-approved methodology for the Union rate zones to calculate the 2019 DSMVA balances.² The customer incentive was allocated based on the amount spent within each rate class. All other program costs were allocated by customer class (e.g. Residential, Commercial/Industrial) and assigned by rate class based on the percentage allocation of the customer incentive costs. All portfolio-level costs that cannot be attributed to an individual program were allocated to a rate class based on the percentage allocation of the program costs by rate class. The variance between the Low-Income DSM budget included in rates and the actual amount spent on Low-Income DSM programs is recovered in proportion to the OEB-approved distribution revenue by rate class for the

¹ Guidelines, pages 36-38.

² Guidelines, pages. 36-38; EB-2015-0029, Union 2015-2020 DSM Plan, Exhibit A, Tab 2, Schedule 1, pages 22-23.

respective year. The overall 2019 Low-Income budget spend of \$14.651 million, which includes the allocated portfolio costs, is allocated in proportion to the 2019 distribution revenue.³

4. Consistent with the pooled DSM budget costs included in rates for 2019, Enbridge Gas has pooled Rate M4 and Rate M5 DSMVA balances for the purposes of disposition. Variances between the DSM budget included in rates and actual DSM spending in these rate classes has been allocated based on volumes for Rate M4 and Rate M5. Accordingly, there is a single common unit rate calculated to determine the disposition of the DSMVA balance to individual customers in these rate classes. This approach is consistent with Union's OEB-approved 2017/2018 DSM Deferral Disposition Application (EB-2020-0067).

DSMVA 15% Overspend

5. As per the Guidelines and OEB-approved 2015-2020 DSM Plan for the Union rate zones, Enbridge Gas is eligible to recover up to an additional 15% overspend above its annual OEB-approved DSM budget through the DSMVA as long as its overall weighted scorecard target on a pre-audited basis for one or more of its scorecards has been achieved, provided the overspend was on program expenses.⁴ Enbridge Gas utilized the DSMVA mechanism to overspend on the Residential Program contained within the Resource Acquisition scorecard in the Union rate zones in the 2019 DSM program year. The Resource Acquisition scorecard achieved pre-audit results above the weighted scorecard targets required for the 15% overspend to be accessed. The pre-audit scorecard results are summarized in Table 1.

³ EB-2015-0029, Union 2015-2020 DSM Plan, Exhibit A, Tab 3 Schedule 1 Page 10.

⁴ Guidelines, pages 36-38; EB-2015-0029, Union Gas Limited 2015-2020 DSM Plan, Exhibit A, Tab 2, Schedule 1, page 22-23.

Table 1
2019 DSM Scorecard Results (Pre-Audit)

| Scorecard | Total Scorecard Target Achieved |
|---------------------------|--|
| 2019 Resource Acquisition | 130% |

6. As set out in Table 9.9 of the final 2019 DSM Annual Report dated March 3, 2021 (see Exhibit A, Tab 4, Schedule 1), for the Union rate zones, the overspend on the Residential Program portion of the Resource Acquisition scorecard was offset by underspend on administration and other program level costs.

Residential Adaptive Thermostat Offering

7. As part of the Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020), Enbridge Gas proposed the development and implementation of a new adaptive thermostat offering within its Residential program called the Residential Adaptive Thermostat offering for the Union rate zones.⁵
8. As part of this proposal, Enbridge Gas requested OEB approval of an incremental \$1.5M per year to facilitate this new offering for the Union rate zones. Enbridge Gas also proposed to add 34,645,000 cumulative natural gas m³ to the Cumulative Natural Gas Savings (m³) metric on its 2019 Resource Acquisition scorecard for the Union rate zones. The assumptions underpinning these additions are outlined in Enbridge Gas' DSM Mid-Term Review submission for the Union rate zones.⁶

⁵ EB-2017-0127, DSM Mid-Term Review Part Two Requirement Two: Submission of Union Gas Limited, page 4

⁶ EB-2017-0127, DSM Mid-Term Review Part Two Requirement Two: Submission of Union Gas Limited pages 5-6

9. In the Report of the OEB on the Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020), the OEB indicated that it supported this request. While incremental budget funds were not included in rates, the OEB directed Enbridge Gas to track program expenditures in the DSMVA for the Union rate zones.⁷ Consistent with this request, Enbridge Gas has included program expenditures of \$0.551 million for this offering in the DSMVA for the Union rate zones and is seeking recovery of these costs through this proceeding.

Achievable Potential Study

10. During 2019, Enbridge Gas was allocated \$0.463 million of costs⁸ related to the 2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study. As no costs related to this study were included the OEB Approved 2019 DSM budget for Enbridge Gas in the Union rate zones, these costs are being sought for recovery through the DSMVA in this proceeding. This treatment is consistent with the recovery of these costs in the 2016 Disposition of DSM Deferral and Variance accounts (EB-2018-0300) proceeding for the Union rate zones.⁹

Budget Transfers Between Programs

11. Section 6.6 of the Guidelines states that Enbridge Gas should inform the OEB and stakeholders in the event that cumulative fund transfers among OEB-approved DSM programs exceed 30% of the approved annual DSM budget for an individual DSM program. Enbridge Gas did not transfer more than 30% of program budget funds between programs in the 2019 DSM program year for the Union rate zones.

⁷ EB-2017-0127, Report of the Ontario Energy Board, Mid-Term Review of the Demand Side Management (DSM) Framework for Natural Gas Distributors (2015-2020), November 29, 2018, page 24

⁸ \$0.185 million allocated to the Union rate zones – Exhibit A Tab 4 Schedule 1, page 77, Table 9.9

⁹ EB-2018-0300, 2016 Disposition of DSM Deferral and Variance accounts, Exhibit A, Tab 3, Schedule 1, page 8

DSM and Infrastructure Planning Study

12. In 2019, Enbridge Gas (Union rate zone) incurred costs of \$0.011 million¹⁰ related to an Infrastructure Planning Study, also known as the Integrated Resource Planning (“IRP”) Study, related to the Ingleside Pilot Program. Enbridge Gas (Union rate zone) funded these costs through budget transfers from available funds in its OEB-approved budget for Pilot Programs. This treatment is consistent with the recovery of these costs in the 2017/2018 DSM Deferral and Variance Account Disposition (EB-2020-0067) proceeding for the Union rate zones.¹¹

Open Bill Access Project

13. In 2019, Enbridge Gas (Union rate zone) incurred costs of \$0.005 million related to the development of its Open Bill Access program. These costs have been funded through budget transfers, as directed by the OEB, from available OEB-approved program funding.¹²

Large Volume Program Budget Transfers – Rate T2 & Rate 100 Customers

14. In accordance with the OEB-approved 2015-2020 DSM Plan for the Union rate zones, Enbridge Gas (Union rate zone) continued to offer its Large Volume direct access program and adhered to the OEB-approved maximum program budget transfer rules between Rate T2 and Rate 100 in 2019.¹³ The overall underspend of \$0.465 million for the Large Volume Program is credited in the DSMVA. Enbridge Gas (Union rate zone) did not transfer budget dollars from any other part of the overall DSM budget into Rate T2 or Rate 100 rate classes.

¹⁰ Exhibit A Tab 4 Schedule 1, page 78, Table 9.9.

¹¹ EB-2020-0067, 2017/2018 DSM Deferral and Variance Account Disposition, Proceeding, Exhibit C, Tab 3, Schedule 1, page 3

¹² EB-2015-0029, OEB Decision and Order, January 20, 2016, page. 55.

¹³ EB-2015-0029, OEB Decision and Order, January 20, 2016, pages 50–52; EB-2012-0337, 2013-2014 DSM Plan for Large Volume Customers, Exhibit A, Tab 1, Schedule 1, page 14.

Deferred Incentives

15. Consistent with section 5.3.2 of the OEB’s Mid-Term Review Report and the OEB-approved DSMVA Accounting Orders as set out in the OEB’s Decision and Order on Enbridge Gas’s 2017 and 2018 DSM Deferral and Variance Account Disposition Proceeding (EB-2020-0067)¹⁴ Table 9.9 of the final 2019 DSM Annual Report for the Union rate zones also includes amounts for customer incentive spend deferred to future years, for offerings where incentives are paid when future milestones/activities are reached.
16. See Table 2 for a continuity schedule of the deferred incentive balances for the Commercial Savings by Design (“CSBD”) offering for the 2019 DSM program year in the Union rate zones being tracked within the DSMVA.

Table 2
2019 DSM Deferred Incentives Schedule – Union Rate Zones

| Offering (\$MM) | TOTAL | 2017 | | | | 2018 | | | | 2019 | TOTAL | 2019 Deposit Expiration |
|----------------------------|---------------------------|---------------------------|---------------|---------------|----------------------|---------------------------|---------------|---------------|----------------------|---------------|----------------------|-------------------------|
| | Beginning of Year Balance | Beginning of Year Balance | Withdrawals | | End of Year Balance | Beginning of Year Balance | Withdrawals | | End of Year Balance | Deposits | End of Year Balance | |
| | | | Utilized | Expired | | | Utilized | Expired | | | | |
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e = b - c - d</i> | <i>f</i> | <i>g</i> | <i>h</i> | <i>i = f - g - h</i> | <i>j</i> | <i>k = e + i + j</i> | |
| CSBD | \$0.21 | \$0.06 | \$0.05 | \$0.00 | \$0.02 | \$0.15 | \$0.03 | \$0.00 | \$0.12 | \$0.14 | \$0.28 | 31-Dec-24 |
| TOTAL ¹⁵ | \$0.21 | \$0.06 | \$0.05 | \$0.00 | \$0.02 | \$0.15 | \$0.03 | \$0.00 | \$0.12 | \$0.14 | \$0.28 | |

Demand Side Management Incentive Deferral Account

17. The Union rate zones DSMIDA balance for 2019 is \$5.950 million before interest. The purpose of the DSMIDA is to record the shareholder incentive amount earned by a natural gas utility as a result of its DSM programs.¹⁶ DSM shareholder

¹⁴ EB-2020-0067, OEB Decision and Order, January 28, 2021

¹⁵ Figures may not add exactly due to rounding

¹⁶ Guidelines, page 39.

incentive amounts are allocated to the rate classes in proportion to the actual DSM spending by rate class in 2019.

18. Tables 9.0 – 9.5 of the final 2019 DSM Annual Report for the Union rate zones provide details of the DSM incentive achieved by scorecard.

Lost Revenue Adjustment Mechanism Variance Account

19. The Union rate zones LRAMVA balance for 2019 is \$0.928 million before interest. The LRAMVA is used to track, at the rate class level, the variance between the actual impact of DSM activities (volume savings) undertaken by the natural gas utility and the forecasted impact included in distribution rates.¹⁷ The LRAMVA balance is allocated to rate classes on the same basis as lost revenues were experienced such that the LRAMVA provides a true-up by rate class.
20. There is an inherent time lag between the date that Enbridge Gas receives the audit of volume savings from the EC and the date that these audited volume savings are reflected in the Union rate zones' distribution rates. Depending on the timing of audited volume savings and Enbridge Gas's annual rate filings, the impacts captured in the LRAM variance account can span multiple DSM program years, and can include:
 - **Full-Year Impacts** - for prior DSM program years if no volume savings were reflected in rates;

¹⁷ Guidelines, page 39; The LRAMVA does not include volume variances for general service rate classes as these are captured in the Normalized Average Consumption ("NAC") deferral account. The 2017 and 2018 balances in the NAC deferral account were disposed of in Union's 2017 (EB-2018-0105) and 2018 (EB-2019-0105) Disposition of Deferral and Variance Account Balances proceedings.

- **Partial-Year Impacts** - for the monthly impact of volume savings resulting from the current DSM program year, if no forecast volume savings were reflected in rates; and,
- **True-Ups** - to true-up pre-audit volume savings reflected in rates with audited actual volume savings for prior DSM program years.

21. LRAM amounts are only recorded in the variance account until such time as the OEB approves new distribution rates for the utility that reflect the actual audited impact of a DSM program year's activities (volume savings). Please see Tables 3 and 4 for a summary of LRAM volume savings adjustments for each of the 2013 to 2021 DSM program years included or expected in each of Enbridge Gas's (Union rate zone) annual rates applications (2015-2021), and DSM deferral and variance account clearance applications (2015-2021). Enbridge Gas's (Union rate zone) 2017 and 2018 Annual Volumes (as defined below) were audited as part of the 2017 and 2018 Verification Reports and are therefore not included in the 2019 Verification Reports.

Table 3
DSM Program Year LRAM Volume Adjustment Included in Rates

| Line No. | Rates Application | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) |
|----------|-------------------------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | DSM Program Year LRAM Volume Adjustment | | | | | | | |
| | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| 1 | 2015 (EB-2014-0271) | Not Included | Not Included | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | 2016 (EB-2015-0116) | Audited | Not Included | Not Included | N/A | N/A | N/A | N/A | N/A |
| 3 | 2017 (EB-2016-0245) | Audited | Pre-Audit | Not Included | Not Included | N/A | N/A | N/A | N/A |
| 4 | 2018 (EB-2017-0087) | Audited | Pre-Audit | Pre-Audit | Not Included | Not Included | N/A | N/A | N/A |
| 5 | 2019 (EB-2018-0305) | Audited | Audited | Audited | Not Included | Not Included | Not Included | N/A | N/A |
| 6 | 2020 (EB-2019-0194) | Audited | Audited | Audited | Not Included | Not Included | Not Included | Not Included | N/A |
| 7 | 2021 (EB-2020-0095) | Audited | Audited | Audited | Audited | Audited | Not Included | Not Included | Not Included |

Table 4
DSM Program Year LRAM Volume Adjustment Included in LRAM Variance Account

| Line No. | DSM Deferral Application | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) |
|----------|-------------------------------|---|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | DSM Program Year LRAM Volume Adjustment | | | | | | | | |
| | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| 1 | 2015 (EB-2017-0323) | None | Full-Year | Partial-Year | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | 2016 (EB-2018-0300) | None | None | Full-Year | Partial-Year | N/A | N/A | N/A | N/A | N/A |
| 3 | 2017 (EB-2020-0067) | None | None | True-up | Full-Year | Partial-Year | N/A | N/A | N/A | N/A |
| 4 | 2018 (EB-2020-0067) | None | None | True-up | True-up | Full-Year | Partial-Year | N/A | N/A | N/A |
| 5 | 2019 (EB-2021-0072) | None | None | None | None | Full-Year | Full-Year | Partial-Year | N/A | N/A |
| 6 | 2020 (Expected) | None | None | None | None | Full-Year | Full-Year | Full-Year | Partial-Year | N/A |
| 7 | 2021 (Expected) | None | None | None | None | None | None | Full-Year | Full-Year | Partial-Year |

22. The 2019 LRAMVA balance for the Union rate zones is comprised of:

- Full-year audited volume savings for contract rate classes related to the 2017 and 2018 DSM program years ("2017/2018 Annual Volumes") calculated using 2019 Rates for the Union rate zones (see Table 4, line 5, columns e and f).
- Partial-year monthly volume savings for contract rate classes related to the 2019 DSM program year ("2019 Monthly Volumes"), beginning the month that audited volume savings were realized and for the remaining months of the 2019 DSM program year, per the Guidelines, calculated using 2019 Rates for the Union rate zones (see Table 4, line 5, column g).¹⁸

23. The 2019 LRAMVA balance reflects the full-year impact of 2017 and 2018 audited LRAM volumes, and the partial-year (depending upon the month the DSM measure was installed) impact of 2019 audited LRAM volumes. Accordingly, the Union rate zones' 2019 LRAMVA debit balance of \$0.928 million (as detailed at Exhibit C, Tab 3, Schedule 1, Appendices A1 through A4) is comprised of:

- i) \$0.405 million related to 2017 Annual Volumes of 43,242 10^3m^3 calculated using 2019 Rates for the Union rate zones;
- ii) \$0.336 million related to 2018 Annual Volumes of 37,830 10^3m^3 calculated using 2019 Rates for the Union rate zones; and
- iii) \$0.187 million related to 2019 Monthly Volumes of 23,177 10^3m^3 calculated using 2019 Rates for the Union rate zones.

¹⁸ Guidelines, page 39.

Future Recovery of 2017, 2018 and 2019 LRAM Volume Savings

24. The 2017 and 2018 DSM audit processes were not complete when Enbridge Gas filed 2020 Rates Application (EB-2019-0194), and the 2019 DSM audit process was not complete when Enbridge Gas filed its 2021 Rates Application (EB-2020-0095). Consequently, audited LRAM volume savings have not yet been reflected in distribution rates for the Union rate zones for these respective years and will therefore be recovered through the LRAMVA as illustrated in Tables 3 and 4.

Rate Allocation

25. Table 5 summarizes the allocation of Enbridge Gas's Union rate zones-related DSM deferral and variance account balances for the 2019 DSM program years to rate classes, respectively.

Table 5

2019 DSM Deferral and Variance Account Balances by Rate Class – Union Rate Zones

| Rate Class | DSMVA ¹ | DSMIDA | LRAMVA | TOTAL DEFERRAL/ VARIANCE BALANCE |
|--------------|--------------------|--------------------|------------------|-------------------------------------|
| M1 | \$7,272,311 | \$3,412,976 | N/A | \$10,685,287 |
| M2 | (\$3,034,951) | \$730,762 | N/A | (\$2,304,189) |
| M4 | \$1,872,602 | \$428,949 | \$711,124 | \$3,012,675 |
| M5 | (\$1,449,349) | \$28,061 | \$119,468 | (\$1,301,820) |
| M7 | \$1,667,829 | \$361,550 | \$51,332 | \$2,080,711 |
| T1 | (\$726,404) | \$54,210 | \$9,357 | (\$662,838) |
| T2 | (\$607,749) | \$0 | \$3,762 | (\$603,987) |
| Rate 01 | (\$333,855) | \$684,784 | N/A | \$350,930 |
| Rate 10 | (\$1,349,813) | \$167,763 | N/A | (\$1,182,050) |
| Rate 20 | (\$570,102) | \$81,308 | \$27,449 | (\$461,344) |
| Rate 100 | (\$404,987) | \$0 | \$5,947 | (\$399,040) |
| Total | \$2,335,533 | \$5,950,363 | \$928,440 | \$9,214,336 |

1. Allocation to Rate M4 and M5 prior to rate pooling adjustment.

Disposition Methodology

26. Enbridge Gas proposes to dispose of the 2019 DSM-related deferral and variance account balances as a one-time billing adjustment. The billing adjustment will be derived for each customer individually by applying the disposition unit rates to each customer's actual consumption volume for the period January 1, 2019 to December 31, 2019 for Union rate zone contract customers and for the period July 1, 2019 to June 30, 2020 for Union rate zone general service customers.
27. This is the first application Enbridge Gas is proposing a common disposition approach between the EGD and Union rate zones and the first time proposing a one-time billing adjustment for Union rate zone general service customers. Starting July 2021, Enbridge Gas's billing systems and processes will be integrated enabling the Company to adopt the common disposition approach for all customers. At the time of conversion to the new billing system for Union rate zone general service customers only 24 months of historical consumption volume by customer will be available and begins effective July 1, 2019. For this reason, Enbridge Gas proposes to use a 12 month consumption volume period from July 1, 2019 to June 30, 2020 to derive the billing adjustment for Union rate zone general service customers. The 12 month period is a reasonable representation of a customer's annual consumption using the 2019 consumption volume available and the 2020 consumption volume for months where the 2019 information is not available.
28. The Company proposes to dispose of the approved 2019 DSM deferral and variance account balances with the first available QRAM application following the OEB's approval, as early as October 1, 2021.

29. The allocation of 2019 DSM Deferral and Variance account balances is consistent with the treatment in prior years. For contract customers in Union rate zones the derivation of clearance unit rates is also consistent with the treatment in prior years. For general service customers in the Union rate zones, the derivation of clearance unit rates has changed from a prospective recovery approach to a one-time billing adjustment approach as described above to align the disposition approach across all Enbridge Gas rate zones once the integrated billing systems and processes are implemented.
30. The unit rates for each rate class are set out at Exhibit C, Tab 2, Schedule 1, Appendix A5.
31. Exhibit C, Tab 2, Schedule 1, Appendices A6 to A9 provide details of the derivation of proposed unit rates:
- Appendix A6 determine the balances (principal and interest) to be cleared for each DSM deferral and variance account for the 2019 DSM program year;
 - Appendix A7 show account balance allocations by rate class for the 2019 DSM program year; and
 - Appendixes A8 and A9 illustrate the derivation of unit rates for the 2019 DSM program year, based on the balances and actual 2019 consumption volumes for each rate class.

ENBRIDGE GAS INC.
UNION RATE ZONES
2019 LRAM Deferral Account Balance

| Line | | <u>Amounts by DSM Plan Year</u> | | | |
|------------|-------------------------|---------------------------------|----------------------------|----------------------------|------------------------------|
| <u>No.</u> | <u>Particulars (\$)</u> | <u>2017 ⁽¹⁾</u> | <u>2018 ⁽²⁾</u> | <u>2019 ⁽³⁾</u> | <u>Total</u> |
| | | <u>(a)</u> | <u>(b)</u> | <u>(c)</u> | <u>(d) = (a) + (b) + (c)</u> |
| | <u>South</u> | | | | |
| 1 | M4 | 283,757 | 283,989 | 143,379 | 711,124 |
| 2 | M5 | 93,479 | 18,323 | 7,666 | 119,468 |
| 3 | M7 | 11,657 | 18,029 | 21,646 | 51,332 |
| 4 | T1 | 6,459 | 2,386 | 512 | 9,357 |
| 5 | T2 | 1,617 | 1,524 | 621 | 3,762 |
| 6 | | <u>396,969</u> | <u>324,251</u> | <u>173,823</u> | <u>895,043</u> |
| | <u>North</u> | | | | |
| 7 | Rate 20 | 4,673 | 11,838 | 10,939 | 27,449 |
| 8 | Rate 100 | 3,829 | 395 | 1,724 | 5,947 |
| 9 | | <u>8,502</u> | <u>12,232</u> | <u>12,662</u> | <u>33,396</u> |
| 10 | Total | <u>405,471</u> | <u>336,483</u> | <u>186,485</u> | <u>928,440</u> |

Notes:

⁽¹⁾ EB-2021-0072, Exhibit C, Tab 3, Schedule 1, Appendix A2, column (e)

⁽²⁾ EB-2021-0072, Exhibit C, Tab 3, Schedule 1, Appendix A3, column (e)

⁽³⁾ EB-2021-0072, Exhibit C, Tab 3, Schedule 1, Appendix A4, column (e)

ENBRIDGE GAS INC.
UNION RATE ZONES
2017 LRAM Audited Revenue Impacts

| Line No. | Particulars | 2017 Audited Volumes ⁽¹⁾ 10 ³ m ³ (a) | 2017 LRAM Volumes in 2019 Rates 10 ³ m ³ (b) | 2017 Net LRAM Volumes 10 ³ m ³ (c) = (a) - (b) | 2019 Delivery Rates \$/10 ³ m ³ (d) | Revenue Impact (\$) (e) = (c) x (d) |
|----------|--------------|--|--|--|---|---|
| | <u>South</u> | | | | | |
| 1 | M4 | 19,314 | - | 19,314 | 14.692 | 283,757 |
| 2 | M5 | 3,582 | - | 3,582 | 26.097 | 93,479 |
| 3 | M7 | 3,899 | - | 3,899 | 2.990 | 11,657 |
| 4 | T1 | 6,271 | - | 6,271 | 1.030 | 6,459 |
| 5 | T2 | 7,967 | - | 7,967 | 0.203 | 1,617 |
| 6 | | <u>41,032</u> | <u>-</u> | <u>41,032</u> | | <u>396,969</u> |
| | <u>North</u> | | | | | |
| 7 | Rate 20 | 706 | - | 706 | 6.617 | 4,673 |
| 8 | Rate 100 | 1,504 | - | 1,504 | 2.546 | 3,829 |
| 9 | | <u>2,210</u> | <u>-</u> | <u>2,210</u> | | <u>8,502</u> |
| 10 | Total | <u>43,242</u> | <u>-</u> | <u>43,242</u> | | <u>405,471</u> |

Notes:

⁽¹⁾ Volumes reflect 2017 audited volumes, not adjusted for month of install.

ENBRIDGE GAS INC.
UNION RATE ZONES
2018 LRAM Audited Revenue Impacts

| Line No. | Particulars | 2018 Audited Volumes ⁽¹⁾ 10 ³ m ³ (a) | 2018 LRAM Volumes in 2019 Rates 10 ³ m ³ (b) | 2018 Net LRAM Volumes 10 ³ m ³ (c) = (a) - (b) | 2019 Delivery Rates \$/10 ³ m ³ (d) | Revenue Impact (\$) (e) = (c) x (d) |
|----------|--------------|--|--|--|---|---|
| | <u>South</u> | | | | | |
| 1 | M4 | 19,329 | - | 19,329 | 14.692 | 283,989 |
| 2 | M5 | 702 | - | 702 | 26.097 | 18,323 |
| 3 | M7 | 6,030 | - | 6,030 | 2.990 | 18,029 |
| 4 | T1 | 2,316 | - | 2,316 | 1.030 | 2,386 |
| 5 | T2 | 7,509 | - | 7,509 | 0.203 | 1,524 |
| 6 | | <u>35,886</u> | <u>-</u> | <u>35,886</u> | | <u>324,251</u> |
| | <u>North</u> | | | | | |
| 7 | Rate 20 | 1,789 | - | 1,789 | 6.617 | 11,838 |
| 8 | Rate 100 | 155 | - | 155 | 2.546 | 395 |
| 9 | | <u>1,944</u> | <u>-</u> | <u>1,944</u> | | <u>12,232</u> |
| 10 | Total | <u>37,830</u> | <u>-</u> | <u>37,830</u> | | <u>336,483</u> |

Notes:

⁽¹⁾ Volumes reflect 2018 audited volumes, not adjusted for month of install.

ENBRIDGE GAS INC.
UNION RATE ZONES
2019 LRAM Audited Revenue Impacts

| Line No. | Particulars | 2019 Audited Volumes ⁽¹⁾ 10 ³ m ³ (a) | 2019 LRAM Volumes in 2019 Rates 10 ³ m ³ (b) | 2019 Net LRAM Volumes 10 ³ m ³ (c) = (a) - (b) | 2019 Delivery Rates \$/10 ³ m ³ (d) | Revenue Impact (\$) (e) = (c) x (d) |
|----------|--------------|--|--|--|---|---|
| | <u>South</u> | | | | | |
| 1 | M4 | 9,759 | - | 9,759 | 14.692 | 143,379 |
| 2 | M5 | 294 | - | 294 | 26.097 | 7,666 |
| 3 | M7 | 7,240 | - | 7,240 | 2.990 | 21,646 |
| 4 | T1 | 497 | - | 497 | 1.030 | 512 |
| 5 | T2 | 3,057 | - | 3,057 | 0.203 | 621 |
| 6 | | <u>20,847</u> | <u>-</u> | <u>20,847</u> | | <u>173,823</u> |
| | <u>North</u> | | | | | |
| 7 | Rate 20 | 1,653 | - | 1,653 | 6.617 | 10,939 |
| 8 | Rate 100 | 677 | - | 677 | 2.546 | 1,724 |
| 9 | | <u>2,330</u> | <u>-</u> | <u>2,330</u> | | <u>12,662</u> |
| 10 | Total | <u>23,177</u> | <u>-</u> | <u>23,177</u> | | <u>186,485</u> |

Notes:

⁽¹⁾ Volumes reflect 2019 audited volumes, adjusted for month of install.

ENBRIDGE GAS INC.
 Union Rate Zones
 Union North and Union South Combined Unit Rates - Delivery
2019 DSM Deferral Account Disposition

| Line | | Rate | 2019 |
|------|--------------------------------|-------|---|
| No. | Particulars | Class | Unit Rate (1) (cents/m ³) (a) |
| | <u>Union North</u> | | |
| 1 | Small Volume General Service | 01 | 0.0365 |
| 2 | Large Volume General Service | 10 | (0.3566) |
| 3 | Medium Volume Firm Service | 20 | (0.0891) |
| 4 | Large Volume High Load Factor | 100 | (0.0398) |
| 5 | Large Volume Interruptible | 25 | - |
| | <u>Union South</u> | | |
| 6 | Small Volume General Service | M1 | 0.3631 |
| 7 | Large Volume General Service | M2 | (0.1923) |
| 8 | Firm Com/Ind Contract | M4 | 0.2297 |
| 9 | Interruptible Com/Ind Contract | M5A | 0.2615 |
| 10 | Special Large Volume Contract | M7 | 0.3908 |
| 11 | Large Wholesale | M9 | - |
| 12 | Small Wholesale | M10 | - |
| 13 | Contract Carriage Service | T1 | (0.1543) |
| 14 | Contract Carriage Service | T2 | (0.0149) |
| 15 | Contract Carriage- Wholesale | T3 | - |

Notes:

(1) Exhibit C, Tab 2, Schedule 1, Appendix A8 and A9.

ENBRIDGE GAS INC.
Union Rate Zones
2019 DSM Deferral & Variance Account Balances

| <u>Line No.</u> | <u>Account Number</u> | <u>Account Name (\$000's)</u> | <u>Balance (a)</u> | <u>Interest (b)</u> | <u>Total (c)</u> |
|---------------------|------------------------------------|--------------------------------------|------------------------|-------------------------|----------------------|
| 1 | 179-111 | Demand Side Management VA | 2,336 | 41 | 2,377 |
| 2 | 179-126 | Demand Side Management Incentive DA | 5,950 | 109 | 6,060 |
| 3 | 179-75 | Lost Revenue Adjustment Mechanism VA | 928 | 15 | 943 |
| 4 | Total 2019 Union Rate Zones | | <u>9,214</u> | <u>165</u> | <u>9,379</u> |

ENBRIDGE GAS INC.
Union Rate Zones
Allocation of 2019 DSM Deferral Account Balances

| Line No. | Particulars (\$000's) | Acct No. | Union North | | | | | Union South | | | | | | | | | | Total (1) |
|---|--------------------------------------|----------|-------------|---------|---------|----------|---------|-------------|---------|-------|-----|-------|-----|-----|-------|-------|-----|-----------|
| | | | Rate 01 | Rate 10 | Rate 20 | Rate 100 | Rate 25 | M1 | M2 | M4 | M5 | M7 | M9 | M10 | T1 | T2 | T3 | |
| | | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) |
| <u>2019 DSM Deferral Account Balances</u> | | | | | | | | | | | | | | | | | | |
| <u>Delivery-Related Deferrals</u> | | | | | | | | | | | | | | | | | | |
| 1 | Demand Side Management VA (2) | 179-111 | (340) | (1,374) | (580) | (412) | - | 7,400 | (3,088) | 388 | 42 | 1,697 | - | - | (739) | (618) | - | 2,377 |
| 2 | Demand Side Management Incentive DA | 179-126 | 697 | 171 | 83 | - | - | 3,476 | 744 | 437 | 29 | 368 | - | - | 55 | - | - | 6,060 |
| 3 | Lost Revenue Adjustment Mechanism VA | 179-75 | - | - | 28 | 6 | - | - | - | 722 | 121 | 52 | - | - | 10 | 4 | - | 943 |
| 4 | Total Delivery-Related Deferrals | | 358 | (1,203) | (469) | (406) | - | 10,876 | (2,344) | 1,547 | 192 | 2,117 | - | - | (674) | (615) | - | 9,379 |

Notes:

- (1) Exhibit C, Tab 2, Schedule 1, Appendix A6, column (c).
(2) Demand Side Management Variance Account balances for Rate M4 and M5 are allocated based on 2019 actual volumes to derive a common unit rate for disposition for both rate classes, as illustrated below.

| Rate Class | 2019 Account Balances (i) (\$000s) | 2019 Interest (\$000s) | Total Account Balances (\$000s) | 2019 Actual Volume (10"m") | Pooled Account Balances (ii) (\$000s) | Unit Rate (cents/m") |
|------------|------------------------------------|------------------------|---------------------------------|----------------------------|---------------------------------------|----------------------|
| | (a) | (b) | (c) = (a + b) | (d) | (e) | (f)=(e/d) x 100 |
| M4 | 1,873 | 33 | 1,906 | 673,787 | 388 | 0.0576 |
| M5 | (1,449) | (25) | (1,475) | 73,541 | 42 | 0.0576 |
| Total | 423 | 7 | 431 | 747,328 | 431 | |

- (i) - Exhibit C, Tab 2, Schedule 1, Table 6.
(ii) - Allocated in proportion to column (a).

ENBRIDGE GAS INC.
 Union Rate Zones
 General Service Unit Rates for One-Time Adjustment - Delivery
2019 DSM Deferral Account Disposition

| Line No. | Particulars | Rate Class | Deferral Balance for Disposition (\$000's) (1) (a) | Actual Volume (10 ³ m ³) (2) (b) | Unit Rate (cents/m ³) (c) = (a / b) * 100 |
|-------------|------------------------------|---------------|--|--|---|
| | <u>Union North</u> | | | | |
| 1 | Small Volume General Service | 01 | 358 | 980,339 | 0.0365 |
| 2 | Large Volume General Service | 10 | (1,203) | 337,281 | (0.3566) |
| | <u>Union South</u> | | | | |
| 3 | Small Volume General Service | M1 | 10,876 | 2,995,204 | 0.3631 |
| 4 | Large Volume General Service | M2 | (2,344) | 1,219,012 | (0.1923) |
| 5 | Total General Service | | <u>7,687</u> | | |

Notes:

- (1) Exhibit C, Tab 2, Schedule 1, Appendix A7.
 (2) Actual volume for the period July 1, 2019 to June 30, 2020.

ENBRIDGE GAS INC.
 Union Rate Zones
 Contract Unit Rates for One-Time Adjustment - Delivery
2019 DSM Deferral Account Disposition

| Line No. | Particulars | Rate Class | Deferral Balance for Disposition (\$000's) (1) (a) | 2019 Actual Volume (10 ³ m ³) (b) | Unit Rate (cents/m ³) (c) = (a / b) * 100 |
|----------|--------------------------------|------------|---|---|--|
| | <u>Union North</u> | | | | |
| 1 | Medium Volume Firm Service | 20 | (469) | 527,023 | (0.0891) |
| 2 | Large Volume High Load Factor | 100 | (406) | 1,019,749 | (0.0398) |
| 3 | Large Volume Interruptible | 25 | - | 119,134 | - |
| | <u>Union South</u> | | | | |
| 4 | Firm Com/Ind Contract | M4 | 1,547 | 673,787 | 0.2297 |
| 5 | Interruptible Com/Ind Contract | M5 | 192 | 73,541 | 0.2615 |
| 6 | Special Large Volume Contract | M7 | 2,117 | 541,821 | 0.3908 |
| 7 | Large Wholesale | M9 | - | 103,774 | - |
| 8 | Small Wholesale | M10 | - | 391 | - |
| 9 | Contract Carriage Service | T1 | (674) | 437,245 | (0.1543) |
| 10 | Contract Carriage Service | T2 | (615) | 4,136,946 | (0.0149) |
| 11 | Contract Carriage- Wholesale | T3 | - | 283,374 | - |
| 12 | Total Contract Service | | <u>1,693</u> | | |

Notes:

(1) Exhibit C, Tab 2, Schedule 1, Appendix A7.

UNION RATE ZONES: ESTIMATED ANNUAL BILL IMPACT

1. For a Rate M1 residential customer in the Union South rate zone with annual consumption of 2,200 m³, the one-time billing adjustment is a charge of \$7.99.
2. For a Rate 01 residential customer in the Union North rate zone with annual consumption of 2,200 m³, the one-time billing adjustment is a charge of \$0.80.
3. Bill impacts of the proposed disposition for the Union rate zones are set out at Exhibit C, Tab 3, Schedule 1, Appendix A1 for general service customers and at Exhibit C, Tab 3, Schedule 1, Appendix A2 for contract customers.

ENBRIDGE GAS INC.
Union Rate Zones
Calculation of One-Time Adjustments for General Service Customers
2019 DSM Deferral Account Disposition

| Line No. | Particulars | Unit Rate (cents/m ³) (a) | Annual Volume (m ³) (b) | Bill Impact (\$)(1) (c) = (a x b) / 100 |
|-------------------------------|-------------|---|---|---|
| <u>Union North - Delivery</u> | | | | |
| 1 | Rate 01 | 0.0365 | 2,200 | 0.80 |
| 2 | Rate 10 | (0.3566) | 93,000 | (331.64) |
| <u>Union South - Delivery</u> | | | | |
| 3 | Rate M1 | 0.3631 | 2,200 | 7.99 |
| 4 | Rate M2 | (0.1923) | 73,000 | (140.38) |

Notes:

(1) One-time adjustment for sales service and direct purchase customers.

ENBRIDGE GAS INC.
Union Rate Zones
Calculation of One-Time Adjustments for Typical Small and Large Customers
2019 DSM Deferral Account Disposition

| Line No. | Particulars | Unit Rate (cents/m ³) (a) | Annual Volume (m ³) (b) | Bill Impact (\$ (1)) (c) = (a x b) / 100 |
|-------------------------------|-----------------------------|---|---|--|
| <u>Union North - Delivery</u> | | | | |
| 1 | Small Rate 20 | (0.0891) | 3,000,000 | (2,673) |
| 2 | Large Rate 20 | (0.0891) | 15,000,000 | (13,365) |
| 3 | Average Rate 25 | - | 2,275,000 | - |
| 4 | Small Rate 100 | (0.0398) | 27,000,000 | (10,746) |
| 5 | Large Rate 100 | (0.0398) | 240,000,000 | (95,520) |
| <u>Union South</u> | | | | |
| 6 | Small Rate M4 | 0.2297 | 875,000 | 2,010 |
| 7 | Large Rate M4 | 0.2297 | 12,000,000 | 27,564 |
| 8 | Small Rate M5 Interruptible | 0.2615 | 825,000 | 2,157 |
| 9 | Large Rate M5 Interruptible | 0.2615 | 6,500,000 | 16,998 |
| 10 | Small Rate M7 | 0.3908 | 36,000,000 | 140,688 |
| 11 | Large Rate M7 | 0.3908 | 52,000,000 | 203,216 |
| 12 | Small Rate M9 | - | 6,950,000 | - |
| 13 | Large Rate M9 | - | 20,178,000 | - |
| 14 | Rate M10 | - | 94,500 | - |
| 15 | Small Rate T1 | (0.1543) | 7,537,000 | (11,630) |
| 16 | Average Rate T1 | (0.1543) | 11,565,938 | (17,846) |
| 17 | Large Rate T1 | (0.1543) | 25,624,080 | (39,538) |
| 18 | Small Rate T2 | (0.0149) | 59,256,000 | (8,829) |
| 19 | Average Rate T2 | (0.0149) | 197,789,850 | (29,471) |
| 20 | Large Rate T2 | (0.0149) | 370,089,000 | (55,143) |
| 21 | Large Rate T3 | - | 272,712,000 | - |

Notes:

(1) One-time adjustment for sales service and direct purchase customers.