

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. pursuant to
Section 36(1) of the *Ontario Energy Board Act, 1998*, S.O. 1998, for an order or
orders approving its Demand Side Management Plan for 2022-2027.

**APPLICATION FOR APPROVAL OF PROPOSED DSM FRAMEWORK
AND
DSM PROGRAM PLAN 2022-2027**

**INTERROGATORIES FROM
ENERGY PROBE RESEARCH FOUNDATION**

October 19, 2021

**APPLICATION FOR APPROVAL OF PROPOSED DSM FRAMEWORK
DSM PROGRAM PLAN 2022-2027
INTERROGATORIES FROM
ENERGY PROBE RESEARCH FOUNDATION**

- 5. Does Enbridge Gas's 2023-2027 DSM Framework and DSM Plan adequately respond to previous OEB direction and guidance on future DSM activities (e.g., DSM Mid-Term Review Report, 2021 DSM Decision, OEB's post-2021 DSM guidance letter)?**

5.Energy Probe.1

Ref.: Exhibit B Tab 1 Schedule 1 Page 13 Table 1: 2023-2027 Five-Year DSM Budget Envelope; Exhibit F Tab 1 Schedule 2

Preamble: Report of the Board Demand Side Management Framework for Natural Gas Distributors (2015-2020), December 22, 2014 Page 17 states as follows:

“Based on a \$2.00/month cost impact to a typical residential customer and considering the general historic program mix and the relative size of each utility, the Board has estimated total annual DSM amounts of \$85M for Enbridge and \$70M for Union (these amounts are inclusive of the maximum annual shareholder incentive).”

- (a) Please describe how Enbridge calculated the bill impact figures that it included in the notice of hearing for this matter.
- (b) Please provide the proposed 2023 budgets based on the ~\$2.00/ month for typical residential customer, with the other classes prorated based on average consumption
- (c) Please complete the following Table for the residential sector -one for EGI Rate 1 and one for Union South Rate M1.

Average Annual Residential Gas Bill and DSM Costs EGD (Union South) Rate Zone			
	2020	2023	2027
1. Variable rate (\$/m3)			
2. Variable costs (\$)			
3. Fixed costs			
4. Annual carbon Cost			
5. Total bill			
6. # of customers			
7.Total annual residential gas costs (5*6)			
Allocated DSM Budget \$/yr			
% DSM allocation			

- (d) Please complete the following table.

TOTAL Annual Gas Consumption and Estimated Costs			
	2020	2023	2027
Total Ontario gas consumption (m3) ¹			
Estimated Annual Cost \$m			

6. Does Enbridge Gas's 2023-2027 DSM Framework and DSM Plan adequately support energy conservation and energy efficiency in accordance with the policies of the Government of Ontario, including having regard to consumers' economic circumstances?

6.Energy Probe.2

Ref.: Exhibit D Tab 1Schedule 1Page 9 Table 1:

Please provide the following Metrics
Historic 2017-2021:

- Program Budget Actuals
- Portfolio Admin Evaluation and R&D
- Percentage of PAEER&D to Budget

6.Energy Probe.3

Ref.: Exhibit D Tab 1Schedule 1 Page 9 Table 2

- Please Provide the Portfolio Budget Percentages for the 8 Major Programs
- Compare to the 2021 Portfolio

6.Energy Probe.4

Ref.: Exhibit D Tab 1 Schedule 1Page 22 of 26 Plus Attachment

Please provide a version of the Table [EB-2020-0271 Exhibit I STAFF 4 Attachment 1] that shows:

- 2015-2023 FTE
- DSM Compensation Actual/Forecast
- Average Cost/FTE
- Total Budget/Spend
- FTE/\$ Budget/Spend
- Overheads included in Budget

- Overheads as a % Budget
- FTE /Overhead cost

8. Are Enbridge Gas's proposed shareholder incentives appropriate?

8a. Is Enbridge Gas's proposed annual maximum shareholder incentive, including structure, and amount appropriate?

8a. Energy Probe. 5

Ref.: Exhibit D Tab 1 Schedule 2 Table1 Max Annual Shareholder Incentive

- Please provide the historic maximum and actual Shareholder Incentives for Legacy Union and EGD and Post merger 2017-2021E
- Provide the Incentive as a % Budget/Spend

8b. Is Enbridge Gas's proposed Long Term shareholder incentives appropriate?

8b. Energy Probe.6

Exhibit D Tab 1 Schedule 2 Page 4 Table 2

Preamble: 4. Enbridge Gas proposes allocating \$1.4 million each year, or \$7.0 million over the five-year term, toward the two longer term objectives outlined below, specifically the Low Carbon Transition Program and the Long Term GHG Reduction target. Table 2 below illustrates how the \$2M for the Low Carbon Transition Scorecard and the \$5M for the Long Term GHG Reduction Target accrues each year.

- Confirm ratepayers are paying
 - The FCCP charge in Rates
 - The Carbon charge for EGI facilities
 - The Costs of EGI Administering the FCCP.
- Why should ratepayers provide EGI an additional incentive for reducing GHG? Is this not part of EGI's mandate under the Act? Please discuss.
- What other jurisdictions have supplementary incentives similar to the EGI proposal?

8c. Is Enbridge Gas's Annual Net Benefits Shared Savings proposal appropriate?

8d. Are there any other incentive mechanisms that should be included in addition to or to replace those proposed by Enbridge Gas?

8c/d.Energy Probe.7

Ref.: Exhibit D Tab 1 Schedule 2 Page 12 Tables 10 & 11 Annual Net Benefits Shared Savings (NBSS)

- a) Has the OEB approved the NBSS Scheme?
- b) Does the NBSS apply to both RA and MT programs or RA only?
- c) Provide a schedule that shows the forecast savings and shared savings if the annual savings in 2023 met target for all RA programs, if RA programs exceeded target by 10 and 20%.
- d) Did EGI consider mirroring a traditional Earnings Sharing Mechanism scheme? For example if the RA programs in aggregate exceeded target and EGI earned >110% DSMI, the excess (>110% to max DSMI) would be shared with ratepayers 50:50 either as rebate contribution to next years' Budget? Please discuss

9. Are Enbridge Gas's proposed scorecards, including performance metrics, metric weightings, and targets appropriate?

9.Energy Probe.8

Refs.: Exhibit D Tab 1 Page 7 Table 5: 2023 Annual Scorecards; Exhibit D Tab 1 Schedule 3

- a) In designing the 2023-2027 Portfolio Scorecards how did EGI establish
 - The Metric Weights
 - DSMI Allocation and DSMI Range
- b) Please discuss and illustrate the process and criteria used for each of the RA and MT programs
- c) Please provide the 2021 Scorecard and provide a variance report to 2023.
- d) Confirm the DSMI amount (\$) EGI receives is a direct function of the target achievement and the weighting of the DSMI? Please illustrate the calculation.

9a. Is Enbridge Gas's proposed annual target adjustment mechanism TAM appropriate?

9b. Is Enbridge Gas's proposed Residential Program Scorecard, including targets and performance metrics appropriate?

9a/b.Energy Probe.9

Ref.: Exhibit D Tab 1 Schedule 3 Pages 2-4 Table 3

Preamble: 2. The annual scorecards are divided into categories:

i. Scorecards whose base year 2023 targets have been proposed by Enbridge Gas, with consideration for the inputs described above. Subsequent, 2024-2027 year-over-year targets will be determined by way of a formulaic Target Adjustment Mechanism (“TAM”). These scorecards are based on Resource Acquisition type programs who metrics are primarily natural gas savings reductions (m3). Base year, 2023 targets have been proposed by Enbridge Gas. The TAM methodology will be applied to determine subsequent year targets. The TAM approach is detailed in the Proposed Framework, Exhibit C, Tab 1, Schedule 1, Section 5.2

- a) Has the TAM Methodology been reviewed by the EAC?
- b) Has the TAM Methodology been approved by the OEB? Please provide references.
- c) If a Target, for example the Residential Sector Programs, is/is not met please provide illustrative examples of the TAM for 2023/2024.

9b.Energy Probe.10

Ref.: Exhibit E, Tab 4, Schedule 7, Attachment 1, Page 19 of 62 Posterity Report

Preamble: 15. The 2019 APS has proven useful as a reference tool for a high-level comparison of targets, and it has provided some confidence in the relative weighting of Enbridge Gas’s sector targets. Enbridge Gas and Posterity have worked together to improve the PG model so it can begin to represent real world market realities, through updates to measure characterization, measure adoption and sector definitions. Despite these best efforts, there remains a fundamental disconnect between the theoretical achievable potential and costs represented in the model, and how DSM programs operate in the Ontario market.

- a) Please confirm that Posterity used the following EGI assumptions for the Air Sealing Measure:
 - Savings 315 m3/household
 - Added Electricity Savings (specify) for inclusion in the TRC calculation;
- b) Please provide the Working Papers for the basis of these assumptions
- c) Please confirm that Posterity used the following EGI assumptions for the Whole Home Envelope Measure:
 - Lifetime 30 years
 - Savings 447 m3/yr

-Average Incentive Payment \$1800

Please provide the Working Papers for the basis of these assumptions

- d) Please confirm that Posterity used the following EGI assumptions for the Attic Insulation:

-Adjusted Savings 296 m3/ home

Please provide the Working Papers for the basis of these assumptions

9b.Energy Probe.11

Ref.: Exhibit E Tab 5 Schedule 1 Page 1

Preamble: For measures that do not exist in the TRM, for example, for commercial custom projects or *residential whole home projects* (excluding the new measures described below), Enbridge Gas used best available input assumptions at the time of the submission of this Application for the purposes of forecasting DSM results and proposing targets. In order to claim energy savings results, Enbridge Gas will use project specific input assumptions to estimate savings.

- a) Please provide the complete list of assumptions and supporting Working Papers for the Residential Whole Home Program/projects.
- b) How much does this program contribute to the residential Sector Targets in 2023?
- c) Provide a breakdown by Program of the Residential Sector 2023 Targets and the contribution of each to the Targets M3 and %
- d) Provide the Working Papers that support the proposed Residential Sector 2023 Targets

9d. Is Enbridge Gas's proposed Commercial Program Scorecard, including targets and performance metrics appropriate?

9d.Energy Probe.12

Refs.: Exhibit D Tab 1 Schedule 3 Pages 2-4 Table 3; Exhibit E Tab 1 Schedule 4: Commercial Custom-Prescriptive Downstream and Direct Install Prescriptive Midstream Offers

Preamble: Energy Probe has previously made several submissions critical of the effectiveness of certain Market Transformation programs Run it Right and MT offers. EGI has responded to

these submissions that this was a matter to be addressed in this EB-2021-0002 Proceeding. The Board agreed with EGI in its EB-2020-0072 Decision.

- a) Please provide a complete response that addresses the reasons that these two MT programs have been dropped and replaced by the proposed prescriptive offers.
- b) Who was consulted in preparing these offers?
- c) Has EGI piloted these new offers? If so please provide the results.
- d) Will EGI focus delivery using ESAs? Are ESAs EGI employees? If so, how many full and part time. If not, how many ESA consultants are qualified by EGI?
- e) Will EGI pay ESAs a fee or commission? Please provide details.

10. Has Enbridge Gas proposed an optimal suite of program offerings that will maximize natural gas savings and provide the best value for ratepayer funding?
10a. Are Enbridge Gas's proposed program offers for residential customers appropriate?

10a.Energy Probe.13

Ref.: Exhibit D Tab 1 Schedule 3Page 4 Table 2

- a) For the Residential RA Programs please provide a schedule that shows the targets and achievement for 2017-2019 legacy and merged 2020-21 DSM Programs (unaudited).Include the DSMI amounts earned in each year.
- b) Specifically show how COVID-19 has affected participation rates and delivery in 2020/2021 for each program and # measures implemented
- c) For 2023 please provide the % change in targets to historical average and historical minimum to maximum achievement. Provide with and without 2020/2021 data
- d) For 2023 has EGI increased # Residential Programs/measures? (please specify)
- e) For 2023 has EGI increased/reduced customer incentives? Please specify

10a.Energy Probe.14

Ref.: Exhibit E Tab 1Schedule 2 Page 12 Table 1

- a) Confirm the Ontario Building Code now requires R60 attic insulation, so any homeowner undertaking renovations under a Municipal Building permit must install added insulation to R 60 How does EGI make the incentive appropriate for these circumstances?
- b) For each of the listed retrofit measures, please provide the calculations that underpin the incentive, list input assumptions for example area of wall insulation type/thickness R value and Output measure e.g. m3 savings.
- c) Provide the Estimated customer cost to complete each measure.
- d) For each measure List the incentive % based on Cost to customer and M3 gas saved per year and total m3 over life of measure.
- e) For Air Sealing. What is the historic range of improvement, without adding any exterior insulation (such as Silverboard). Is there a correlation with the age and size of the house?
- f) Is the amount listed in para 53 (average participant incentive of approximately \$450 per home or \$2.25/m3 saved) based on historic data or modelling? Please **discuss**.

10. Energy Probe.15

Ref.: Exhibit E, Tab 1, Schedule 2, Page 12

Preamble: Enbridge's evidence includes this table:

Water Heater	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 0.87 UEF or higher tankless ENERGY STAR qualified natural gas water heater.	\$400
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- (a) Please provide the TRC ratio and net benefits for this measure. Please provide all assumptions and calculations.
- (b) What is assumed as the average lifetime of a natural gas water heater (tank and tankless) for the purposes of estimating measure cost-effectiveness?
- (c) For a typical home, what is the annual m3 consumption for a gas water heater
 - i) that meets minimum standards versus

- ii) one that meets the above criteria (please provide the answer for tank and tankless)?
- d) Please provide the efficiency level of gas water heaters:.
 - i) an approximate average efficiency of customer gas water heaters,
 - ii) the number of customers with gas water heaters,
 - iii) the approximate number of customers with gas water heaters within the efficiency ranges (80-85%, 85-90%, 90-95%).
- e) Please provide an approximate water heater breakdown by housing type if possible (single family, duplex townhouse etc).
- f) Please provide an estimate of # combo units
- g) Provide the estimated annual residential water heater gas consumption for each Rate Zone (if this differs) and the Total for the franchise.

10a.Energy Probe.16

Ref.: Exhibit E Tab 1Schedule 2 Page 12 Table 1

- a) How much of Ontario housing stock is detached homes, semi-detached homes, row house, townhouse? Show estimates for pre '60, 70-2000 and post 2000.
- b) How many in each Vintage, are Owned and Rented/leased?
- c) How much of the stock has <R3.8 exterior wall insulation?
- d) If EGI was to upgrade the <R3.8 exterior wall housing stock how many units would be involved?
- e) What would be the cost /unit to reach R12?
- f) Does the Exterior Wall Insulation incentive include any sharing of the cost of the installation of new wall finish such as Stucco/Siding? Please Discuss.
- g) Has EGI or EGI and/or Ministry of Energy discussed an Ontario “House Wrap/Blanket” exterior insulation Program with the Federal Government under the Greener Homes Initiative? If not, why not?

10.Energy Probe.17

Ref.: Exhibit E, Tab 2, Schedule 2 & Exhibit E, Tab 3, Schedule 1

(a) Please complete the following table:

Typical Customer – Average Annual Gas Consumption (m3)				
	Total	Space Heating	Water Heating	Other Gas
Union Rate Zone - Typical Single-Family Residential Customer				
Enbridge Rate Zone – Typical Single-Family Residential Customer				
Enbridge - Typical Single-Family Residential Customer				

10 c. Are Enbridge Gas's proposed program offerings for commercial customers appropriate?

10c.Energy Probe.18

Refs.: Exhibit D Tab 1 Schedule 3 Pages 2-4 Table 3; Exhibit E Tab 1 Schedule 4: Commercial Custom-Prescriptive Downstream and Direct Install Prescriptive Midstream Offers

Preamble: Energy Probe has previously made several submissions critical of the effectiveness of certain Market Transformation programs Run it Right and xxx offers. EGI has responded to these submissions that this was a matter to be addressed in this EB-2021-0002 Proceeding. The Board agreed with EGI in its EB-2020-0072 Decision.

- Please provide a complete response that addresses the reasons that these two MT programs have been dropped and replaced by the proposed prescriptive offers.
- Who was consulted in preparing these offers?
- Has EGI piloted these new offers? If so please provide the results.
- Will EGI focus delivery using ESAs? Are ESAs EGI employees? If so, how many full and part time. If not, how many ESA consultants are qualified by EGI?
- Will EGI pay ESAs a fee or commission? Please provide details.

10 j. Is Enbridge Gas's proposed low carbon transition program appropriate?

10j.Energy Probe.19

Ref.: Exhibit D Tab 1 Schedule 3 Page 11 Table 7 Low Carbon Transition Program Targets

Preamble: 5. The proposed targets for the Low Carbon Transition Program are outlined in Table 7 below. These targets have been informed by a number of inputs including, but not limited to:

- Consultation with HVAC manufacturers, distributors and contractors;
- Jurisdictional scans to determine how key program elements compared to similar jurisdictions;
- Prior and current experience with the demonstration and deployment of heat pumps through the Energy Leader offer, demonstration projects and pilot programs; and
- Consideration of the OEB's guidance with respect to the primary objective of DSM, "assisting customers in making their homes and businesses more efficient in order to help better manage their energy bills."

- a) Confirm EGI has not had an LCTP in the past.
- b) Do any other jurisdictions have a similar Program? Please provide references.
- c) Has EGI Piloted the LCTP program to determine the level of supplier and customer interest? If so please provide the results.
- d) What is the range of installed costs for a gas air source heat pump?
- e) Please provide details of the LCTP incentives for supplier/installers and customers

10.Energy Probe.20

Ref.: Exhibit E, Tab 2, Schedule 2 ; Exhibit E, Tab 3, Schedule 1

(a) Please complete the following table showing the Savings from installation of an Air-Source heat pump:

	Base Case: Standard Home Average Annual Gas Consumption (m3)			Post Retrofit Average Annual Gas Consumption (m3)			Average Annual Electricity Consumption (ASHP & HPWP, HSPF Region 5=10 ²) (kWh)		
	Total – Space/ Water	Space Heating	Water Heating	Total – Space/ Water	Space Heating	Water Heating	Total – Space/ Water	Space Heating	Water Heating
Enbridge RZ									

Typical Single-Family home									
Installed Cost \$000									
Simple Payback Yrs	-	-	-						

13. Are Enbridge Gas’s proposed updates to the treatment of input assumptions, cost-effectiveness screening, and avoided costs appropriate?

13.Energy Probe.21

Ref.: Exhibit C, Tab 1, Schedule 1, Page 48

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

- Avoided natural gas commodity costs
- Avoided natural gas upstream transportation and third-party services costs
- Avoided natural gas seasonal storage costs.
- Avoided unaccounted for natural gas fuel losses.
- Avoided natural gas downstream infrastructure costs³
- Avoided costs, other resources (electricity, heating fuel oil, propane, and/or water)
- Avoided carbon costs”

- (a) Please provide a live excel workbook (or spreadsheets) containing a full breakout of all of the prices and inputs for the avoided cost calculations underlying Enbridge’s application (e.g. \$/m3, \$/kWh, etc.). Include the forecast carbon price for avoided carbon costs for each year both as \$/tonne CO2e and as \$/m3 of gas.
- (b) Please describe Enbridge’s forecast avoided carbon price in 2031 and beyond.
- (c) Please provide the basis of the proposed EGI Discount Rate of 6.08% for calculating DSM Avoided Costs.

13.Energy Probe.22

Ref.: Exhibit E Tab 5 Schedule 1 Attachment 3 Attachment 4- Guidehouse DSM Avoided Costs Study

- a) Please provide a Comparison of the Ontario/EGI Avoided Cost for the *Residential DSM Programs* to US jurisdiction's reviewed by Guidehouse.
- b) Provide the Ranges (\$ Canadian)
- c) What does the IESO use for electricity CDM?

13.Energy Probe.23

Ref.: Exhibit E Tab 5 Schedule 1 Page 2 Attachment 1 Pages 5 and 6

Preamble: As has been outlined in Section 9.0 of the Proposed Framework, Enbridge Gas will use the NTG and EULs provided in Attachment 1 and Attachment 2 in order to determine actual results, until such time as NTG and EUL values are re-evaluated through the OEB led EM&V planning process.

- a) Justify the Net to Gross NTG values for the Residential Sector Measures for Residential Space Heating Whole House and Air-Sealing Measures for non-low income homes.
- b) Why are the NTG values of 95% reasonable? In the latter case many homeowners do Air-sealing, for example if new doors and windows are installed. Please discuss and provide the basis for the 95% NTG
- c) Are the other Residential NTG values based on verified/audited results? If so provide the references. If not, please provide the working Papers for each of the NTG values.

13.Energy Probe.24

Ref.: Exhibit E, Tab 4, Schedule 2, Attachment 2, Page 19 SeeLine Group Ltd- Conclusion

Preamble: Lessons from Ontario and other jurisdictions support the concept of revising the regulatory framework as it pertains to the NTG application to remove disputes that can be burdensome on the regulators and challenging for rate-payers when associated delays create a bottleneck for financial clearances. Furthermore, having clearly defined evaluation processes and protocols would similarly avoid confusion and contention. The effectiveness of the various evaluation processes will largely be determined by the clarity in the roles and protocols established that guide them.

- a) Confirm how NTG ratios are set/confirmed under the OEB Gas DSM Framework.
- b) Does EGI agree with the SeeLine Conclusion? Please discuss
- c) What changes does EGI propose to NTG for RA programs?
- d) How are ratepayers and utilities rewarded/penalized based on NTG ratios. Please Discuss

16. Has Enbridge Gas proposed a reasonable approach to ensure natural gas DSM programs are effectively coordinated with electricity conservation programs and other energy conservation and greenhouse gas reduction programs applicable in its service territory?

16.Energy Probe.25

Ref.: Exhibit E Tab 4 Schedule 4 Page 6

Preamble: 13. Throughout the term of the DSM Plan, Enbridge Gas is anticipating opportunities to work with other external parties, including government agencies, municipalities and consumer organizations to optimize funding, resourcing, administration and marketing of complimentary programming to drive incremental participation and leverage efficiencies. Discussions on some of these potential efforts have already been initiated, however Enbridge Gas is not yet able to make details of any arrangements public as they are not final.

- a) Please provide an update for the IESO/LDCs
- b) Please provide an Update for the Federal Government Agencies
- c) Please provide an Update for Ontario Municipalities.

17. Is Enbridge Gas's stakeholder engagement proposal reasonable, including its engagement with Indigenous communities?

17.Energy Probe.26

No Reference:

- a) Please provide details of the 2023 Stakeholder Engagement Process and Program.
- b) Specifically highlight the residential sector program

