



Rakesh Torul
Technical Manager
Regulatory Applications
Regulatory Affairs

tel 416-495-5499
EGIRegulatoryProceedings@enbridge.com

Enbridge Gas Inc.
500 Consumers Road
North York, Ontario M2J 1P8
Canada

VIA RESS and EMAIL

September 8, 2022

Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Nancy Marconi:

**Re: Enbridge Gas Inc. (Enbridge Gas or EGI)
Ontario Energy Board (OEB) File No.: EB-2022-0133
2023 Rates (Phase 1) – Interrogatory Responses**

In accordance with the OEB's Letter of Direction dated August 18, 2022, enclosed please find the interrogatory responses of Enbridge Gas filed in the above noted proceeding.

Please contact the undersigned if you have any questions.

Yours truly,

(Original Digitally Signed)

Rakesh Torul
Technical Manager,
Regulatory Applications

cc: David Stevens, Aird and Berlis LLP
EB-2022-0133 Intervenors

ENBRIDGE GAS INC.

Answer to Interrogatory from
Ontario Energy Board Staff (STAFF)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, p. 6 of 17, Table 3

Preamble:

On May 5, 2021, Enbridge Gas filed its proposed 2022-2027 DSM Plan (EB-2021-0002). Enbridge Gas's 2023 Rates application reflects the proposed 2023 DSM budget and rate class allocations as filed in EB-2021-0002 (Exhibit F, Tab 1, Schedule 2). The 2023 DSM budget for the EGD rate zone is \$76.9 million and \$65.3 million for the Union rate zones. Enbridge Gas expects to have an OEB decision on the 2022-2027 DSM Plan before a final rate order is issued in this application. Enbridge Gas will update any difference between the DSM budget included in 2023 Rates and the OEB approved DSM budget for 2023 in the final rate order.

UNION RATE ZONES
2022 and 2023 DSM Budget Allocation by Rate Class

Line No.	Particulars (\$000s)	Board-Approved 2022 DSM Budget (1) (a)	2023 DSM Budget (2) (b)	Change (c) = (b - a)
<u>Union North</u>				
1	Rate 01	6,625	6,030	(595)
2	Rate 10	3,127	3,264	137
3	Rate 20	1,753	1,852	99
4	Rate 25 (3)	-	75	75
5	Rate 100	1,147	1,184	37
6	Total Union North	12,652	12,405	(247)

Question(s):

- a) Please explain the decrease in DSM budget allocation by rate class between the 2022 OEB-approved DSM budget and 2023 DSM budget in the Union North rate zone (i.e. from \$6.625 million to \$6.03 million).

Response:

The decrease in DSM budget allocation between the 2022 OEB-approved DSM budget and 2023 DSM budget in the Union North for Rate 01 (i.e., from \$6.625 million to \$6.03 million) is driven by the harmonized allocation approach that combines the Low Income budgets from the EGD and Union rate zones. In 2022 the Low Income budgets were separate and the allocation of the budgets was separately allocated to the respective rates in each rate zone using the respective OEB-approved distribution revenues less DSM budget costs. In 2023, the Low Income budget was allocated to rates based on a single Low Income budget that covered all of EGI and aggregated distribution revenues less DSM budget costs of the EGD and Union rate zones. This resulted in a higher allocation to the EGD rate zone and a lower allocation to the Union rate zone because prior to combining the budget, the EGD rate zone had a smaller Low Income budget relative to the Union rate zone in 2022.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Ontario Energy Board Staff (STAFF)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, p. 6 of 17, Table 3

Preamble:

Table 3
Annual % Change in GDP IPI FDD
Effective January 1, 2023

Line No.	Particulars	Annual % Change in GDP IPI FDD (1) (a)
1	January - March 2021	2.47%
2	April - June 2021	3.44%
3	July - September 2021	4.30%
4	October - December 2021	5.32%
5	Inflation Factor (Average % Change)	3.88%
6	Inflation Factor (Average % Change), rounded to one decimal place ⁴	3.9%

Question(s):

- a) Given that the inflation rate as reported by StatsCan showed a substantial rate of increase in 2021 as compared to previous years, does Enbridge Gas anticipate there to be similar (or greater) increases for 2022?

Response:

Enbridge Gas does not forecast inflation rate and, therefore, cannot anticipate inflation rate increases for 2022.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Ontario Energy Board Staff (STAFF)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, pp. 12-13

Preamble:

As outlined in EB-2019-0294 Decision and Order, Enbridge Gas is to review the hydrogen gas rate rider (Rider M) annually and request an update if there is a material change in the price of natural gas. The OEB noted the definition of “material” is in relation to the change in the commodity cost of natural gas as an increase or decrease of 25% or more. Enbridge Gas has reviewed the hydrogen gas rate rider calculation based on the most recent approved rates (EB-2022-0089, April 1, 2022 QRAM) for Rate 1 and Rate 6 and confirms the change in the rate rider exceeds 25%. As a result, Enbridge Gas is proposing to increase the Rate 1 rate rider credit from \$10 to \$16 annually. The Rate 6 rate rider credit will increase from \$86 to \$138 annually.

Question(s):

- a) Please provide an overview of the calculations used to determine that the increase in the hydrogen gas rate rider (Rider M) exceeded the OEB definition of “material” (i.e. 25% or more).
- b) Please provide detailed calculations supporting the Rider M credit amounts of \$16 and \$138 for Rate 1 and Rate 6 respectively.
- c) Please advise whether Enbridge Gas intends to update Rider M to reflect the most up to date OEB approved commodity rates available at the time of the draft rate order stage of the proceeding.

Response:

- a) The purpose of the Rider M – Hydrogen Gas Rider is to compensate customers located in the Hydrogen Blended Gas area for the additional costs associated with the increase in volumetric consumption for blended gas as compared to standard gas. Blended gas has a lower heat content, therefore, the customer must consume additional blended gas compared to standard gas to achieve the same amount of energy per m³. A typical residential customer in the EGD rate zone consumes

approximately 2,400 m³ per year. To achieve the same amount of energy, a typical residential customer consumes approximately 2,433 m³ annually with blended gas. Rider M compensates customers for the cost associated with the additional 33 m³ of additional consumption required annually. The annual credit amount is determined by comparing a typical customer's annual bill using 2,400 m³ per year compared to 2,433 m³ per year. For a typical Rate 6 customer, the annual volume using standard gas is 22,606 m³ as compared to 22,918 m³ for blended gas. The change in the annual bill is derived using the same unit rates applied to the two sets of volumes. The change in the annual bill amount is a base to set the Rider M amounts. The original Rider M amounts of \$10.00 for Rate 1 and \$86.00 for Rate 6 were based on the January 1, 2020 (EB-2019-0193) rates. Please note the exact change in the annual bills yielded a change for Rate 1 of \$8.99 annually which was rounded upward to \$10.00. For Rate 6 the exact calculation was \$76.77 which was rounded upward to \$86.00.

As part of the Company's annual rates application, the Company reviews the Rider M calculation using current rates to determine if there has been a material change¹ that would warrant an update to the rider. The Company updates the annual bill comparisons for the two sets of volumes for Rates 1 and 6 by applying the QRAM rates in effect at the time the application is being prepared. If the difference in the annual bill amount calculated using blended gas and standard gas volumes exceeds 25% compared to the current level of the Rider M annual amounts then the Company will propose a change to the new level of the Rider M annual amounts.

- b) The proposed Rider M annual amounts were calculated by applying the April 1, 2022 QRAM rates (EB-2022-0089) to the two sets of volumes (blended and standard) for Rate 1 and Rate 6. As can be seen in Table 1, the change in the annual bills exceed the 25% threshold for Rate 1 and Rate 6. Consistent to the setting of the original Rider M amount, the Company has rounded the Rate 1 \$14.38 annual amount upward to \$16.00 annually and the Rate 6 \$128.11 annual amount upward to \$138.00.

¹ A change is considered "material" if there has been an increase or decrease of 25% or more.

Table 1

RATE 1 - ANNUAL RESIDENTIAL BILL

(A) Blended Gas vs (B) Standard Gas

		<u>(A)</u>	<u>(B)</u>	<u>Difference</u>
				(A) - (B)
VOLUME	m ³	2,433	2,400	33
CUSTOMER CHG.	\$	253.44	253.44	0.00
DISTRIBUTION CHG.	\$	219.42	216.56	2.86
LOAD BALANCING AND TRANSPORT	\$	126.59	124.87	1.72
SALES COMMODITY	\$	447.05	440.98	6.07
FEDERAL CARBON CHARGE	\$	238.86	235.13	3.73
TOTAL SALES	\$	1,285.36	1,270.98	14.38
CURRENT RIDER M	\$			10.00
RIDER M IMPACT				44%

RATE 6 - ANNUAL COMMERCIAL BILL

(A) Blended Gas vs (B) Standard Gas

		<u>(A)</u>	<u>(B)</u>	<u>Difference</u>
				(A) - (B)
VOLUME	m ³	22,918	22,606	312
CUSTOMER CHG.	\$	886.98	886.98	0.00
DISTRIBUTION CHG.	\$	1,704.17	1,684.48	19.69
LOAD BALANCING AND TRANSPORT	\$	1,172.79	1,156.83	15.96
SALES COMMODITY	\$	4,216.22	4,158.83	57.39
FEDERAL CARBON CHARGE	\$	2,249.78	2,214.71	35.07
TOTAL SALES	\$	10,229.94	10,101.83	128.11
CURRENT RIDER M	\$			86.00
RIDER M IMPACT				49%

- c) No, the Company does not intend to update the Rider M amount based on the QRAM rates in effect at the time of the draft rate order.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Ontario Energy Board Staff (STAFF)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, pp. 14-17

Preamble:

In the 2022 Rates proceeding (EB-2021-0147), the parties supported Enbridge Gas's continuing efforts to identify and implement cost-effective alternatives to addressing Dawn-Parkway capacity constraints. Parties supported the exchange service identified by Enbridge Gas as a cost-effective means to potentially reduce the current PDO by allowing PDO obligated customers to shift, in aggregate, up to an additional 37 TJ/day of Parkway obligated deliveries to Dawn at a cost to Enbridge Gas below that of the current PDCI paid on those Parkway obligated volumes.

Enbridge Gas offered the 37,000 GJ/day Market Based Solution (Firm exchange contract between Dawn-Parkway) to all 497 customers with a current Parkway Delivery Obligation. There were 140 customers that chose to accept the move back to Dawn, totaling 26,514 GJ/day.

Question(s):

- a) Does Enbridge Gas have additional information on why certain customers chose to accept the move back to Dawn and others did not? If so, please provide additional explanation.
- b) Enbridge Gas has stated it will re-offer the remaining capacity (10,486 GJ/Day) to Parkway obligated customers on a first come first served basis over the next several months. Enbridge Gas noted that it will report on the results through interrogatory responses or an evidence update.
 - i. If available, please provide an update on the results of the offering for the remaining capacity.

Response:

- a) Enbridge Gas does not have any additional information regarding customers' decisions to move back to Dawn.
- b) Enbridge Gas did re-offer the remaining capacity available to customers with a PDO. Four additional customers chose to accept the move back to Dawn. The total incremental capacity moved is 59 GJ/Day.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1 Page 10/11 Plus Appendices;
Exhibit D, Tab 1, Rate Order, Working Papers, Schedule 10;
Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 13;
EB-2021-0147 Exhibit I.EP.1 Response

Preamble:

“Rate 1 and Rate 6 average uses include the incremental impact of planned DSM for 2023 and have been normalized to the 2023 forecast degree days for each region as determined by OEB-Approved degree day methodologies.”

Question(s):

- a) Please provide updates to the tables and charts in EB-2021-0147 Exhibit I.EP.1 showing 2021 actuals 2022 E and 2023 forecast
- b) Please provide a discussion for each rate class
 - i. Changes in 2021 actuals
 - ii. 2022 YTD trends
 - iii. 2023 forecast
 - iv. Specifically, the drivers for -2.4% AU decrease for EGD Rate 1, -4.7 % for Union RZ Rate 01 and -3.6% for Union RZ M1.
 - v. Adjustment for DSM
- c) Please provide trend lines in the charts requested in part a)

Response:

EGD Rate Zone:

- a) For its 2023 rate application, Enbridge Gas used the same average use models as in EGD's 2014 to 2022 rate applications (with the addition of 2021 actual data to the estimation period). The key factor used to evaluate the accuracy of the General Service average use forecast is the percentage variance between normalized actual and normalized forecast average use per customer. As seen in the Actual to OEB Approved Percentage variance table (Table 1) below, the average percentage variance from forecast over the last 10 years is 0.6% for Rate 1 and -0.4% for Rate 6.

Besides tracking historical accuracy through the percentage variances, the models also have been subject to a battery of tests. Please see the models' estimation and test results for the 2023 forecast in Tables 5 and 8 and the diagnostic test results in Tables 6 and 9 below. The results show that the models continued to have high R-squared, and to generate small forecast errors while passing the key statistical specification tests. Based on the updated results, no statistics alert as 'out of norm'.

TABLE 1
 GENERAL SERVICE AVERAGE USE

FISCAL YEAR	Test Year	Rate Classes	Col. 1	Col. 2	Col. 3	Col. 4
			Actual Normalized Average Use (m ³)	OEB Approved Normalized Average Use (m ³)	Variance Normalized Average Use (1-2)	%Variance Normalized Average Use (3/2)*100
YEAR	2004*	Rate 1	2,843	2,857	(14)	-0.5%
		Rate 6	21,472	21,612	(140)	-0.6%
	2005	Rate 1	2,890	2,953	(63)	-2.1%
		Rate 6	22,241	22,507	(266)	-1.2%
	2006	Rate 1	2,796	2,850	(54)	-1.9%
		Rate 6	22,272	21,999	273	1.2%
	2007	Rate 1	2,726	2,687	39	1.5%
		Rate 6	22,783	21,010	1,773	8.4%
	2008	Rate 1	2,636	2,647	(11)	-0.4%
		Rate 6	24,869	24,204	665	2.7%
	2009	Rate 1	2,604	2,637	(33)	-1.3%
		Rate 6	27,281	28,165	(884)	-3.1%
	2010	Rate 1	2,579	2,622	(43)	-1.6%
		Rate 6	29,106	27,949	1,157	4.1%
	2011	Rate 1	2,594	2,643	(49)	-1.8%
		Rate 6	29,471	28,029	1,442	5.1%
	2012	Rate 1	2,529	2,510	18	0.7%
		Rate 6	28,941	30,122	(1,182)	-3.9%
	2013	Rate 1	2,547	2,568	(22)	-0.8%
		Rate 6	29,878	29,878	(0)	0.0%
2014	Rate 1	2,475	2,433	41	1.7%	
	Rate 6	28,634	28,383	251	0.9%	
2015	Rate 1	2,427	2,419	9	0.4%	
	Rate 6	28,600	28,341	259	0.9%	
2016	Rate 1	2,401	2,480	(79)	-3.2%	
	Rate 6	28,203	28,753	(550)	-1.9%	
2017	Rate 1	2,485	2,472	13	0.5%	
	Rate 6	29,462	29,058	404	1.4%	
2018	Rate 1	2,456	2,358	98	4.2%	
	Rate 6	29,377	28,656	721	2.5%	
2019	Rate 1	2,463	2,412	51	2.1%	
	Rate 6	29,348	29,154	194	0.7%	
2020	Rate 1	2,445	2,383	62	2.6%	
	Rate 6	28,409	28,610	(202)	-0.7%	
2021	Rate 1	2,404	2,452	(48)	-1.9%	
	Rate 6	27,794	28,889	(1,094)	-3.8%	
	Rate 1	Average % variance		2004-2021	-0.1%	
	Rate 1	Average % variance		2012-2021	0.6%	
	Rate 6	Average % variance		2004-2021	0.7%	
	Rate 6	Average % variance		2012-2021	-0.4%	

* 2004 Bridge Year Estimate from RP-2003-0203 was reported at column 2 because OEB Approved numbers are not available since there was no 2004 OEB Approved Volumes Budget due to the nature of the 2004 Rate Application. Please see RP-2003-0048, Exhibit A, Tab 3, Schedule 1 for the rationale for implementing this new approach.

TABLE 5 - RATE 1 REVENUE CLASS 20 REGRESSION EQUATIONS

Metro Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.54	6.06	0.00
LOG(CDD)	0.71	13.45	0.00
LOG(REALCRCRPG)	-0.03	-1.15	0.26
LOG(MET20VINT)	0.67	7.31	0.00
DUM2008	0.01	0.49	0.63
DUM2010	-0.02	-0.74	0.47
R-squared	0.98		
Adjusted R-squared	0.97		
S.E. of regression	0.02		
F-statistic	278.99		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	-0.04	0.97
DLOG(CDD)	0.76	19.41	0.00
DLOG(MET20VINT)	0.69	1.94	0.06
DUM2008	0.00	0.09	0.93
ECM_MET20(-1)	-0.84	-4.39	0.00
R-squared	0.93		
Adjusted R-squared	0.92		
S.E. of regression	0.02		
F-statistic	96.55		0.00

Western Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.74	2.10	0.04
LOG(CDD)	0.65	11.04	0.00
LOG(REALCRCRPG)	-0.08	-2.12	0.04
LOG(WES20VINT)	0.44	2.01	0.05
LOG(CENTEMP)	0.01	0.04	0.97
DUM2008	-0.03	-1.15	0.26
DUM2010	-0.05	-1.88	0.07
R-squared	0.97		
Adjusted R-squared	0.96		
S.E. of regression	0.03		
F-statistic	145.09		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.01	-0.97	0.34
DLOG(CDD)	0.72	16.79	0.00
DLOG(REALCRCRPG)	-0.03	-0.74	0.47
DUM2008	0.00	-0.10	0.92
ECM_WES20(-1)	-0.92	-4.97	0.00
R-squared	0.90		
Adjusted R-squared	0.89		
S.E. of regression	0.03		
F-statistic	73.66		0.000

Central Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.729	2.22	0.03
LOG(CDD)	0.665	9.70	0.00
LOG(REALCRCRPG)	-0.001	-0.04	0.97
LOG(CEN20VINT)	0.687	3.49	0.00
LOG(CENTEMP)	0.001	0.01	0.99
DUM2008	-0.052	-2.18	0.04
R-squared	0.96		
Adjusted R-squared	0.96		
S.E. of regression	0.03		
F-statistic	159.61		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.01	0.59	0.56
DLOG(CDD)	0.71	14.16	0.00
DLOG(REALCRCRPG)	0.01	0.26	0.79
DUM2008	-0.01	-0.70	0.49
DLOG(CEN20VINT)	1.12	1.53	0.14
ECM_CEN20(-1)	-0.85	-4.63	0.00
R-squared	0.88		
Adjusted R-squared	0.86		
S.E. of regression	0.03		
F-statistic	43.59		0.000

TABLE 5 CONTINUED - RATE 1 REVENUE CLASS 20 REGRESSION EQUATIONS

Northern Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	3.82	2.93	0.01
LOG(CDD)	0.65	9.67	0.00
LOG(REALCRCRPG)	-0.05	-1.24	0.22
LOG(NOR20VINT)	0.52	2.54	0.02
LOG(CENTEMP)	-0.11	-0.77	0.44
DUM2009	-0.07	-2.67	0.01
R-squared	0.97		
Adjusted R-squared	0.96		
S.E. of regression	0.03		
F-statistic	190.42		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	0.03	0.98
DLOG(CDD)	0.70	14.20	0.00
DLOG(REALCRCRPG)	-0.01	-0.16	0.88
DLOG(NOR20VINT)	0.82	1.40	0.17
ECM_NOR20(-1)	-0.87	-4.76	0.00
R-squared	0.87		
Adjusted R-squared	0.86		
S.E. of regression	0.03		
F-statistic	53.68		0.000

Eastern Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.13	3.30	0.00
LOG(EDD)	0.72	9.11	0.00
LOG(REALCRCRPG)	-0.02	-0.52	0.61
LOG(ERC20VINT)	0.75	7.52	0.00
DUM2008	-0.03	-1.05	0.30
DUM2010	-0.07	-2.43	0.02
R-squared	0.97		
Adjusted R-squared	0.96		
S.E. of regression	0.03		
F-statistic	194.38		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	-0.51	0.62
DLOG(EDD)	0.82	13.60	0.00
DLOG(ERC20VINT)	0.60	1.01	0.32
ECM_ERC20(-1)	-0.87	-2.30	0.03
AR(1)	-0.07	-0.17	0.87
R-squared	0.87		
Adjusted R-squared	0.85		
S.E. of regression	0.03		
F-statistic	50.71		0.000

Niagara Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.50	4.06	0.00
LOG(NDD)	0.68	8.80	0.00
LOG(REALNRCRPG)	-0.07	-1.81	0.08
LOG(NRC20VINT)	0.87	5.88	0.00
DUM2008	0.01	0.22	0.82
DUM2010	-0.03	-0.76	0.45
R-squared	0.96		
Adjusted R-squared	0.95		
S.E. of regression	0.04		
F-statistic	152.07		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.01	-2.05	0.05
DLOG(NDD)	0.74	13.97	0.00
ECM_NRC20(-1)	-0.61	-3.65	0.00
R-squared	0.86		
Adjusted R-squared	0.85		
S.E. of regression	0.03		
F-statistic	102.73		0.000

TABLE 6 - RATE 1
Model Diagnostic Tests

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.
Test		Metro Region	Western Region	Central Region	Northern Region	Eastern Weather Zone	Niagara Weather Zone
Breusch-Godfrey Serial Correlation LM Test	Test Statistic	1.14	0.30	0.01	0.01	1.48	1.08
	P Value	0.29	0.58	0.92	0.94	0.22	0.30
ARCH Test	Test Statistic	0.97	0.36	0.04	0.20	0.33	0.00
	P Value	0.33	0.55	0.84	0.66	0.57	0.95
Chow Forecast Test	Test Statistic	4.38	2.15	3.16	3.75	3.64	0.06
	P Value	0.06	0.15	0.09	0.06	0.07	0.81
Ramsey RESET Test	Test Statistic	0.00	0.01	0.01	0.01	1.05	1.45
	P Value	0.97	0.93	0.94	0.92	0.31	0.24

TABLE 8 - RATE 6 REVENUE CLASS 12 REGRESSION EQUATIONS

Central Revenue Class 12 (Apartment)

Single Equation Model

Variable	Coefficient	t-Statistic	p-Value
C	1.81	1.01	0.32
LOG(CDD)	0.54	4.15	0.00
LOG(CENTEMP)	0.68	4.25	0.00
DUM1996	-0.11	-2.83	0.01
DUM2008	0.22	3.54	0.00
AR(1)	0.40	2.38	0.02
R-squared	0.95		
Adjusted R-squared	0.94		
S.E. of regression	0.06		
F-statistic	104.502		0.000

Eastern Revenue Class 12 (Apartment)

Single Equation Model

Variable	Coefficient	t-Statistic	p-Value
C	4.79	2.66	0.01
LOG(EDD)	0.47	5.09	0.00
LOG(TIME)	-0.05	-2.53	0.02
DUMERC12	0.26	7.43	0.00
DUM2011	-0.12	-3.39	0.00
LOG(REALRCCPG)	-0.12	-2.06	0.05
LOG(EASTEMP)	0.36	1.50	0.14
DUM2014	0.11	4.63	0.00
R-squared	0.95		
Adjusted R-squared	0.94		
S.E. of regression	0.03		
F-statistic	82.80		0.000

Niagara Revenue Class 12 (Apartment)

Single Equation Model

Variable	Coefficient	t-Statistic	p-Value
C	5.97	4.73	0.00
LOG(NDD)	0.47	6.05	0.00
LOG(TIME)	-0.02	-1.44	0.16
LOG(NIAGEMP)	0.19	1.06	0.30
LOG(REALNRCCPG)	-0.03	-0.75	0.46
DUMNRC12	-0.05	-2.13	0.04
DUM2011	-0.07	-2.48	0.02
AR(1)	0.03	0.16	0.87
R-squared	0.86		
Adjusted R-squared	0.82		
S.E. of regression	0.03		
F-statistic	24.20		0.000

TABLE 8 CONTINUED - RATE 6 REVENUE CLASS 48 REGRESSION EQUATIONS

Central Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-3.70	-2.24	0.03
LOG(CDD)	0.76	9.03	0.00
LOG(TIME)	-0.19	-7.62	0.00
LOG(CRCCOMM/A/C)	-0.03	-1.31	0.20
LOG(ONTGDP)	0.60	5.43	0.00
LOG(REALCRCCPG)	-0.11	-3.15	0.00
DUM2008	0.07	2.78	0.01
R-squared	0.88		
Adjusted R-squared	0.86		
S.E. of regression	0.04		
F-statistic	38.23		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.01	1.13	0.27
DLOG(CDD)	0.83	14.28	0.00
DLOG(TIME)	-0.10	-2.06	0.05
DLOG(CRCCOMM/A/C)	-0.06	-2.26	0.03
DLOG(REALCRCCPG)	-0.05	-0.93	0.36
ECM_CRC48(-1)	-0.88	-4.77	0.00
R-squared	0.88		
Adjusted R-squared	0.86		
S.E. of regression	0.03		
F-statistic	42.77		0.000

Eastern Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-3.47	-1.87	0.07
LOG(EDD)	0.72	6.18	0.00
LOG(TIME)	-0.23	-8.88	0.00
LOG(ONTGDP)	0.60	5.10	0.00
LOG(REALRCCPG)	-0.15	-3.77	0.00
DUM2008	0.12	4.06	0.00
R-squared	0.87		
Adjusted R-squared	0.85		
S.E. of regression	0.04		
F-statistic	42.65		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.01	1.01	0.32
DLOG(EDD)	0.76	8.85	0.00
DLOG(TIME)	-0.14	-2.43	0.02
DLOG(REALRCCPG)	-0.07	-1.17	0.25
ECM_ERC48(-1)	-0.75	-3.88	0.00
R-squared	0.75		
Adjusted R-squared	0.72		
S.E. of regression	0.04		
F-statistic	23.01		0.000

Niagara Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.51	-0.28	0.78
LOG(NDD)	0.72	8.02	0.00
LOG(TIME)	-0.08	-3.30	0.00
LOG(REALNRCCPG)	-0.14	-3.17	0.00
LOG(ONTGDP)	0.34	2.84	0.01
DUM2009	0.04	1.32	0.20
R-squared	0.79		
Adjusted R-squared	0.76		
S.E. of regression	0.04		
F-statistic	23.65		0.000

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	0.15	0.88
DLOG(NDD)	0.79	11.57	0.00
DLOG(REALNRCCPG)	-0.09	-1.50	0.14
ECM_NRC48(-1)	-0.79	-3.97	0.00
R-squared	0.82		
Adjusted R-squared	0.81		
S.E. of regression	0.04		
F-statistic	50.18		0.000

TABLE 8 CONTINUED - RATE 6 REVENUE CLASS 73 REGRESSION EQUATIONS

Central Revenue Class 73 (Industrial)				Eastern Revenue Class 73 (Industrial)				Niagara Revenue Class 73 (Industrial)			
Long Run Equation				Single Equation Model				Single Equation Model			
Variable	Coefficient	t-Statistic	p-Value	Variable	Coefficient	t-Statistic	p-Value	Variable	Coefficient	t-Statistic	p-Value
C	0.89	0.30	0.77	C	-72.968	-0.46	0.65	C	-1.20	-0.39	0.70
LOG(CDD)	0.56	3.03	0.00	EDD	21	0.83	0.42	LOG(NDD)	0.74	3.95	0.00
LOG(TIME)	-0.15	-3.51	0.00	DUM2003	61,001	1.74	0.09	DUM2002	-0.37	-4.47	0.00
LOG(ONTGDP)	0.45	2.60	0.01	DUM2004	-171,562	-3.73	0.00	DUM2007	0.49	5.07	0.00
DUM2008	0.51	11.48	0.00	DUM2009	143,706	6.70	0.00	DUM2010	0.42	4.15	0.00
				EASTEMP	207	0.80	0.43	LOG(NIAGEMP)	1.28	2.72	0.01
				TIME	-853	-0.42	0.68	AR(1)	0.70	4.71	0.00
R-squared	0.91			R-squared	0.88			R-squared	0.97		
Adjusted R-squared	0.90			Adjusted R-squared	0.86			Adjusted R-squared	0.97		
S.E. of regression	0.08			S.E. of regression	32,128.38			S.E. of regression	0.10		
F-statistic	78.71	0.000		F-statistic	36.55	0.000		F-statistic	187.65	0.000	
Short Run Equation											
Variable	Coefficient	t-Statistic	p-Value								
C	-0.03	-1.99	0.06								
DLOG(CDD)	0.63	7.13	0.00								
DLOG(ONTGDP)	0.95	2.52	0.02								
DUM2008	0.24	4.28	0.00								
DUM2009	-0.21	-3.72	0.00								
ECM_CRC73(-1)	-0.51	-4.00	0.00								
R-squared	0.74										
Adjusted R-squared	0.70										
S.E. of regression	0.05										
F-statistic	17.16	0.000									

TABLE 9-RATE 6
 Model Diagnostic Tests

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.	Col 9.	Col 10.	Col 11.
Revenue Class 12 (Apartment) Model Diagnostic Tests			Revenue Class 48 (Commercial) Model Diagnostic Tests			Revenue Class 73 (Industrial) Model Diagnostic Tests				
Test		Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone	Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone	Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone
Breusch-Godfrey Serial Correlation LM Test	Test Statistic	0.00	0.14	0.15	0.04	0.69	1.88	2.13	0.00	2.13
	P Value	0.97	0.71	0.70	0.84	0.41	0.17	0.14	0.96	0.14
ARCH Test	Test Statistic	0.03	0.54	3.74	0.23	0.30	0.17	0.46	0.20	2.95
	P Value	0.86	0.46	0.05	0.63	0.58	0.68	0.49	0.65	0.09
Chow Forecast Test	Test Statistic	0.02	0.20	0.01	0.18	1.54	1.49	6.66	0.66	0.09
	P Value	0.89	0.66	0.92	0.68	0.22	0.23	0.02	0.42	0.76
Ramsey RESET Test	Test Statistic	0.25	1.48	0.17	1.43	0.17	0.14	2.77	0.89	3.12
	P Value	0.62	0.23	0.68	0.24	0.68	0.71	0.11	0.35	0.09

b) i. - iv)

The 2.4% decrease in average use for Rate 1 customers represents the percentage change in average use from the 2022 OEB-Approved forecast (normalized to 2022 to the 2023 Forecast).

The 2022 OEB-Approved forecast was developed in an earlier proceeding using the actuals to 2020 and the assumptions from the 2021 Spring Economic Outlook while the 2023 forecast has been developed using the actuals to 2021 and the assumptions from the 2022 Spring Economic Outlook. As a result, a 2.4% decrease in Rate 1 average use is not reflective of the actual average use trend.

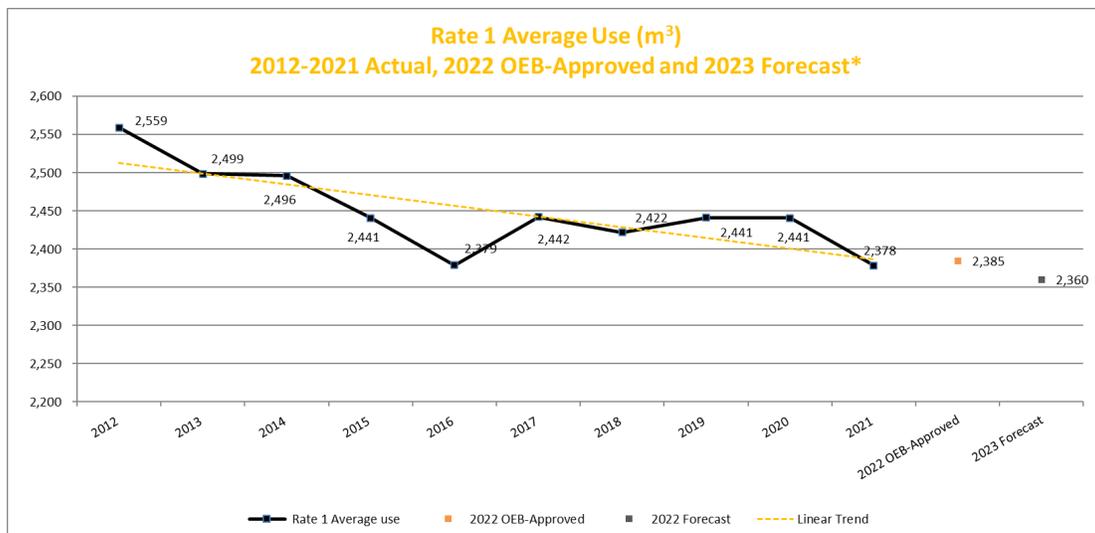
The following charts illustrate the actual average use trend for Rate 1 and Rate 6 for the last 10 years¹, 2022 OEB-Approved and the Forecast for 2023. These figures have all been normalized to 2023 Budget degree days for comparability. The average annual decline in actual average use for the last 10 years is 0.8% for Rate 1 (0.6% when data for pandemic years are excluded). Over the same period, Rate 6 shows an average annual decrease of 0.7% (0.04% when data for pandemic years are excluded).

Both Rate 1 and Rate 6 normalized average use in 2021 has been lower than expected due to the pandemic which impacted customers and their consumption patterns through the economic conditions and production levels that are often difficult to predict.

Year to date, 2022 normalized Rate 1 average use has been approximately 1.3% higher than the budgeted average use while normalized Rate 6 average use has been around 4.2% above the budgeted use. However, end-of-year results might change significantly depending on the consumption that occurs in the coming heating season.

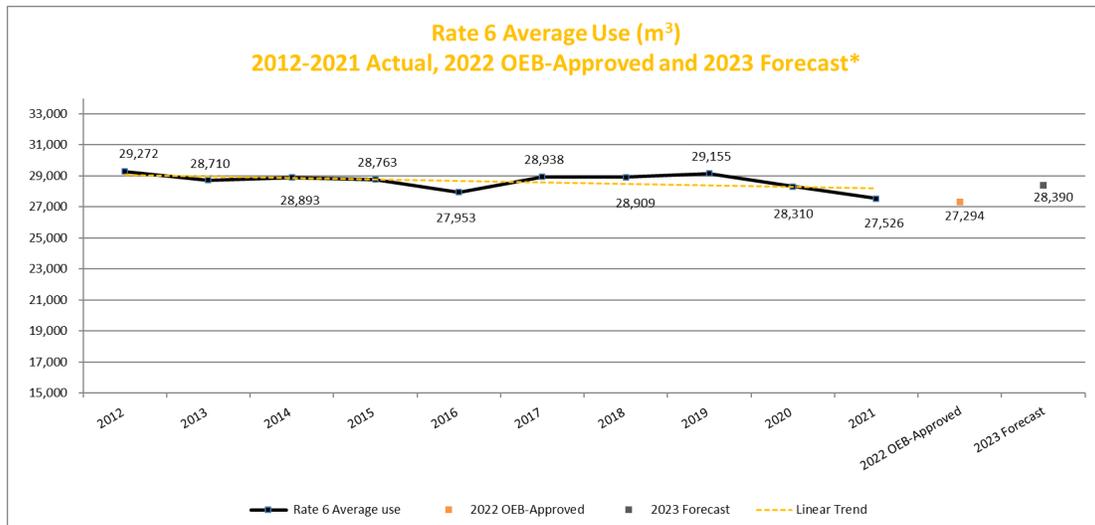
In 2023, Rate 1 average use is expected to continue its historical declining trend and be 0.8% lower than 2021 actual average use. Rate 6 average use is expected to stay in line with its pre-pandemic historical trend.

Figure 1
Rate 1 Average USE



¹ Please note that 10 years trend line has been provided for representation purpose only. The forecast has been developed using longer historical data and regression methodology (not trend model) which driven by driver variables in the model and the long-term trend.

Figure 2
Rate 6 Average USE



*All normalized to 2023 forecast degree days (using OEB-Approved methodology)

b) v)

Incremental partially effective DSM volumes were reduced from the Rate 1 and Rate 6 forecasted volumes, respectively. Due to DSM adjustment, Rate 1 average use was reduced by approximately 2 m³, while Rate 6 usage was reduced by 61 m³.

Union Rate Zones:

a) Charts and tables for the actual Normalized Average Consumption (NAC) at 2023 Normal Degree Day and target NAC for 2022 and 2023 for Rate M1, Rate M2, Rate 01 and Rate 10 are shown below:

Figure 1
Rate M1 Average USE

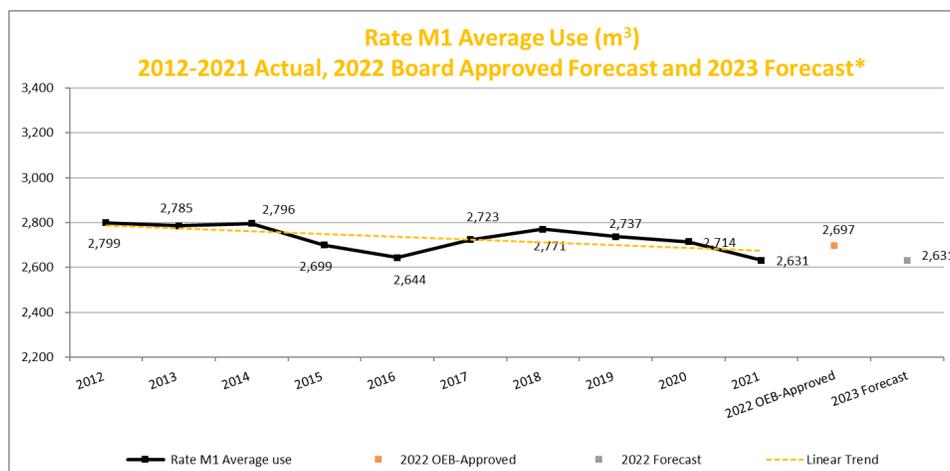


Figure 2
Rate M2 Average USE

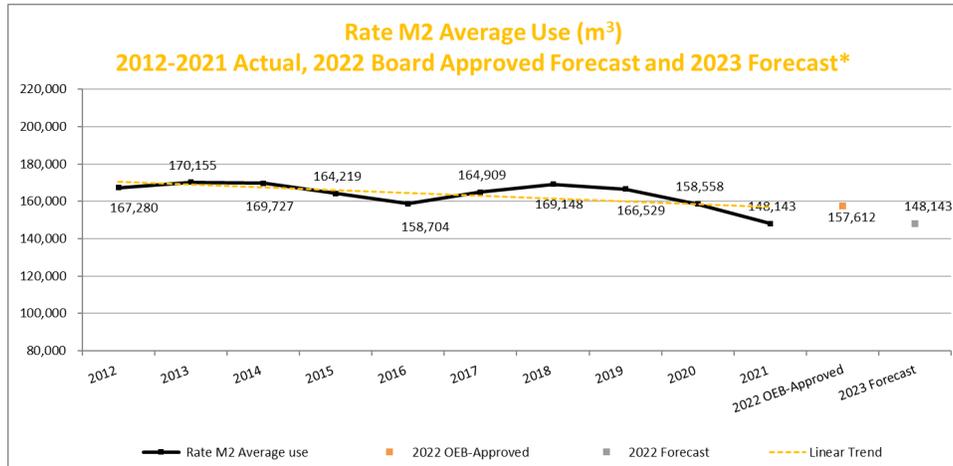


Figure 3
Rate 01 Average USE

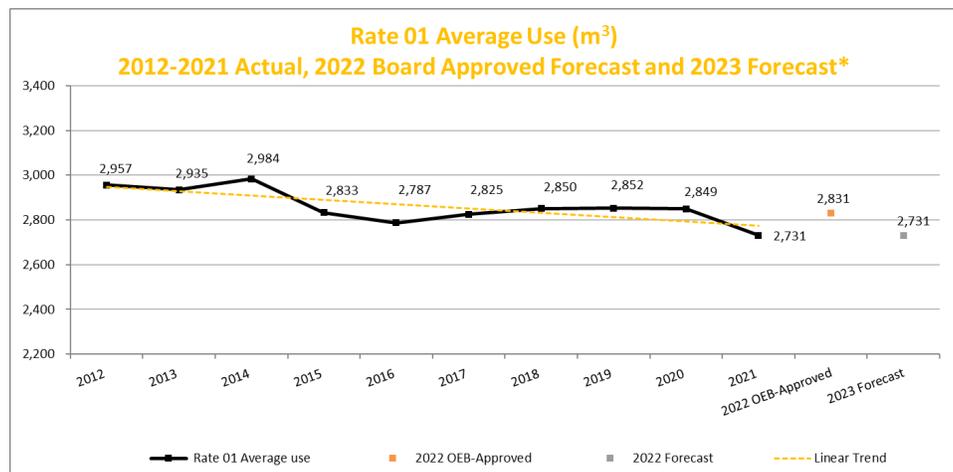
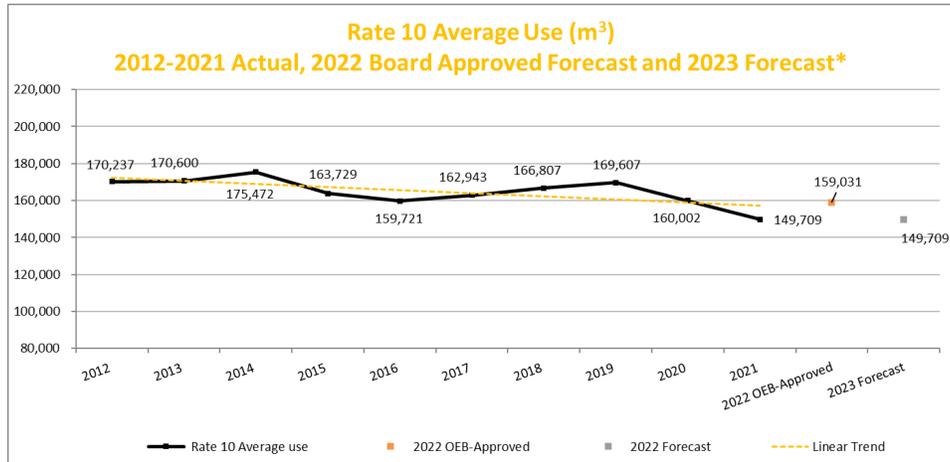


Figure 4
Rate 10 Average USE



*All normalized to 2023 forecast degree days (using OEB-Approved methodology)

Table 1
Rate M1 & Rate M2 Average USE - Actual vs Target

Year	Rate M1		Actual vs Target	Rate M2		Actual vs Target
	Actual	Target	% variance	Actual	Target	% variance
2013	2,768	2,778	-0.4%	169,422	143,867	17.8%
2014	2,748	2,751	-0.1%	167,537	165,085	1.5%
2015	2,676	2,761	-3.1%	163,129	169,121	-3.5%
2016	2,667	2,852	-6.5%	159,933	172,694	-7.4%
2017	2,764	2,738	0.9%	166,969	166,297	0.4%
2018	2,810	2,654	5.9%	171,248	159,319	7.5%
2019	2,780	2,767	0.5%	168,624	167,039	0.9%
2020	2,746	2,817	-2.5%	160,140	171,679	-6.7%
2021	2,668	2,776	-3.9%	149,840	168,419	-11.0%
Average			-1.0%			-0.1%

Table 2
Rate 01 & Rate 10 Average USE - Actual vs Target

Year	Rate 01		Actual vs Target	Rate 10		Actual vs Target
	Actual	Target	% variance	Actual	Target	% variance
2013	2,900	2,765	4.9%	168,975	157,381	7.4%
2014	2,923	2,898	0.9%	172,516	167,443	3.0%
2015	2,799	2,901	-3.5%	162,078	169,025	-4.1%
2016	2,788	3,015	-7.5%	159,855	177,214	-9.8%
2017	2,835	2,844	-0.3%	163,483	164,329	-0.5%
2018	2,864	2,771	3.3%	167,467	158,894	5.4%
2019	2,880	2,853	1.0%	171,056	164,301	4.1%
2020	2,875	2,893	-0.6%	161,276	168,964	-4.6%
2021	2,766	2,889	-4.3%	151,411	171,540	-11.7%
Average			-0.7%			-1.2%

b) i) and c)

Target NAC for 2021 is the actual 2019 use weather normalized at the 2021 normal weather. The 2021 actual NAC was below the target NAC for all Union rate classes, ranging from -3.9% to -11.7%. The average percentage variance since 2013 is close to zero percent in Rate M2 (-0.1%), 1.0% in Rates M1, -0.7% in Rate 01 and -1.2% in Rate 10.

For comparison purposes, actual NAC shown in Figures 1 to 4 are weather normalized at 2023 weather normal. A simple trend line placed over the last 10 years suggests that NAC in all rate classes is declining since 2012 at the average annual rates of 0.7% in Rate M1, 0.9% in Rate 01 and 1.3% in Rate M2 and Rate 10.

b) ii)

For the first seven months of 2022, Actual NAC is occurring lower than Target NAC in Rate M2, Rate 01 and Rate 10. Rate M1 Actual NAC is coming very close to Target NAC.

Table 3
July 2022 Year to Date Actual NAC to Target NAC Percentage Variance

Rate Class	% Variance
Rate M1	0%
Rate M2	-3%
Rate 01	-3%
Rate 10	-18%

b) iii)

Based on the OEB-Approved methodology, the 2023 Target NAC for Rate M1, Rate M2, Rate 01 and Rate 10 are the actual 2021 NAC weather normalized using the 2023 normal weather. Visual inspection suggests that target NAC is line with the historical trend.

b) iv)

The -4.7% for Union RZ Rate 01 represents the change from the 2022 target NAC to the 2023 target NAC which is based on the 2020 to 2021 actual NAC weather normalized at the 2022 and 2023 OEB-Approved weather normal, respectively.

Based on OEB-approved methodology, Enbridge Gas uses the latest available NAC (2021) as 2023 forecasts in the Union rate zones. There are no regression equations or regression statistics as a result, and no 'out of norm' comment can be made.

b) v)

There are no DSM adjustments being made when calculating the target NAC for the Union RZ rate classes.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, Page 11 para. 26&27
Exhibit D, Tab 1, Rate Order, Working Papers, Schedule 10.
Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 13.
EB-2021-0147 Exhibit I.EP.2 Attachment 1

Preamble:

“Rate 1 and Rate 6 average uses include the incremental impact of planned DSM for 2023 and have been normalized to the 2023 forecast degree days for each region as determined by OEB-Approved degree day methodologies. The Union rate zones general service storage and delivery rates have been adjusted to reflect the 2021 actual NAC, using the 2023 OEB-approved weather normal methodology blend of 50:50 (30-year average and 20-year declining trend).”

Question(s):

- a) Please update EB-2021-0147 Exhibit I.EP.2 Attachment 1 to show the derivation of the 2022 forecast Budget Degree Days for each of the 3 DD Zones.
- b) Discuss if each of the Preferred DD Methodologies still produce the best result compared to the other options.

Response:

- a) Please see Attachment 1 for the updated ‘Budget Degree Days’ evidence.
- b) During the IR terms (including deferred rebasing), the Company continues to use the previously approved degree day (DD) forecasting methodologies for each rate zone. The Company evaluates the rankings and performance of DD forecasting methodologies only in its rebasing applications and continues to use the OEB-approved methodologies during the related IR (or deferred rebasing) period. As

stated in the 2020 rate application (EB-2019-0194, Exhibit JT1.5), the Company will provide evidence about the appropriate DD forecasting methodologies to be used on a go-forward basis in the 2024 Rebasing application that will be filed later in fall 2022.

2023 BUDGET DEGREE DAYS

1. The purpose of this evidence is to provide the forecast of degree days for the 2023 test year.
2. The 2023 degree day forecasts were prepared in accordance with the Ontario Energy Board’s (OEB) EB-2012-0459 Decision with Reasons dated July 17, 2014. The OEB has approved the use of the 50:50 Hybrid method for the Central weather zone, the de Bever with Trend method for the Eastern weather zone and the 10-year moving average method for the Niagara weather zone. Table 1 displays the 2023 degree day forecasts that were generated according to the approved methodologies for each weather zone within the franchise using Environment Canada degree days. Conversions to Gas Supply degree days are depicted in the latter part of this evidence.

Table 1
 Forecast of 2023 Environment Canada Degree Days

<i>Region</i>	<i>Methodology</i>	<i>Forecast</i>
Central	50:50 Hybrid	3,604
Eastern	De Bever with Trend	4,339
Niagara	10-year moving average	3,368

Degree Day Forecast Methodology

3. The degree day forecast for the Central weather zone was prepared using the 50:50 Hybrid method which is an average of the 10-year Moving Average and the 20-year Trend forecast. Table 2 provides the actual Environment Canada degree day data for the Central weather zone and the resultant 10-year moving average, 20-year Trend, and 50:50 Hybrid forecast. The 10-year moving average is calculated using data covering the period 2012 to 2021¹, while 20-year Trend model is estimated for the period 2002 to 2021. The 20-year Trend model results are provided in Table 3.

¹ The 10 year moving average for year t is calculated as $(DD_{t-2}+DD_{t-3}+ \dots +DD_{t-10}+DD_{t-1})/10$ where DD is the actual degree day value.

Table 2
 Environment Canada Degree Day Forecast – Central

<i>Col. 1</i>	<i>Col. 2</i>
Calendar Year	Actual ¹
2002	3,630
2003	3,982
2004	3,798
2005	3,797
2006	3,378
2007	3,722
2008	3,837
2009	3,836
2010	3,501
2011	3,648
2012	3,215
2013	3,775
2014	4,103
2015	3,766
2016	3,462
2017	3,502
2018	3,758
2019	3,927
2020	3,512
2021	3,338
2023 Forecast (10-year Moving average)	3,636
2023 Forecast (20-year Trend) ²	3,572
2023 Forecast (50:50 Hybrid) ³	3,604

¹Environment Canada heating degree day observations from Pearson Int'l Airport until June 2013. Effective June 13th, 2013 Environment Canada is no longer able to provide degree day data for Pearson Int'l Airport. Data from June 12th, 2013 and thereafter are obtained from the Toronto Int'l A

²Calculated using the 20-year Trend regression equation from Table 3.

³Average of 10-year Moving average and 20-year Trend forecasts.

Table 3
 Model Results & Test Statistics: Central_20-year Trend Methodology

Sample: 2002 2021

Included observations: 20

<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>	<i>Col. 4</i>	<i>Col. 5</i>
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3,767.7	106.45	35.40	0.000
TREND	-8.9026	8.89	-1.00	0.330
R-squared	0.053	F-statistic	1.00	
		F-prob	0.330	

Environment Canada Central Degree Day= 3,767.7-8.9026*TREND

The trend variable takes the values of 1 through 20 for each of the years from 2002 to 2021. The value of 22 is used for 2023 to generate 2022 degree day forecast.

4. The degree day forecast for the Eastern weather zone was prepared using the de Bever with Trend method. This method regresses actual Environment Canada degree days on a constant, a 5-year weighted average of Environment Canada degree days² and a trend. The 5-year weighted averages are lagged two years. Table 4 displays the actual Environment Canada degree day data for the Eastern weather zone, the 5-year weighted averages used to estimate the model, and the resultant degree day forecast for 2023. The model is estimated over the period 1950 to 2021 for a total of 72 years which is determined by the cycle length with smallest variance. Estimation results are provided in Table 5.

² The five-year weighted average for year t is calculated as $(5*DD_{t-2}+4*DD_{t-3}+3*DD_{t-4}+2*DD_{t-5}+DD_{t-6})/15$ where DD is the actual degree day value.

Table 4
 Environment Canada Degree Day Forecast – Eastern

Col. 1	Col. 2	Col. 3
Calendar Year	Actual ¹	5-year Weighted MA ²
1950	4,824	4,665
1951	4,587	4,594
1952	4,404	4,661
1953	4,059	4,641
1954	4,707	4,556
1955	4,689	4,385
1956	4,799	4,465
1957	4,405	4,523
1958	4,736	4,626
1959	4,718	4,584
1960	4,451	4,652
1961	4,586	4,669
1962	4,826	4,596
1963	4,921	4,584
1964	4,569	4,667
1965	4,810	4,753
1966	4,683	4,709
1967	4,882	4,755
1968	4,780	4,735
1969	4,698	4,775
1970	4,899	4,778
1971	4,797	4,762
1972	5,014	4,805
1973	4,420	4,808
1974	4,725	4,876
1975	4,514	4,736
1976	5,008	4,723
1977	4,597	4,637
1978	4,939	4,741
1979	4,589	4,695
1980	4,920	4,790
1981	4,438	4,735
1982	4,647	4,798
1983	4,536	4,674
1984	4,535	4,658
1985	4,659	4,601
1986	4,501	4,570
1987	4,328	4,585
1988	4,640	4,564
1989	4,931	4,482
1990	4,250	4,524
1991	4,303	4,657
1992	4,861	4,537
1993	4,780	4,461
1994	4,730	4,585
1995	4,585	4,646
1996	4,603	4,681
1997	4,786	4,680
1998	3,828	4,664
1999	4,137	4,689
2000	4,543	4,399
2001	4,115	4,276
2002	4,381	4,328
2003	4,715	4,240
2004	4,637	4,273
2005	4,421	4,444
2006	4,037	4,531
2007	4,447	4,511
2008	4,488	4,373
2009	4,534	4,376
2010	3,973	4,388
2011	4,144	4,430
2012	4,055	4,293
2013	4,402	4,242
2014	4,632	4,155
2015	4,486	4,209
2016	4,322	4,346
2017	4,378	4,428
2018	4,547	4,421
2019	4,777	4,420
2020	4,231	4,454
2021	4,077	4,556
2023 Forecast (de Bever with Trend) ³	4,339	4,341

¹Environment Canada heating degree day observations from MacDonald-Cartier Airport until December 2011. Effective December 15th, 2011, Environment Canada is no longer able to provide degree day data for MacDonald-Cartier Airport. Data from December 15th, 2011 and thereafter are obtained from the Ottawa Int'l A station.

²5-year weighted average lagged 2 years.

³Calculated using the de Bever with Trend regression equation from Table 5.

Table 5
 Model Results & Test Statistics: Eastern_De Bever with Trend Methodology

Sample: 1950 2021

Included observations: 72

Col. 1 Variable	Col. 2 Coefficient	Col. 3 Std. Error	Col. 4 t-Statistic	Col. 5 Prob.
C	4,087.35	1,028.78	3.97	0.00
ECEDD5WA	0.1417	0.22	0.65	0.51
DBWT_TREND	-4.9175	1.74	-2.83	0.01
R-squared	0.20	F-statistic	8.52	
		F-prob	0.00	

Environment Canada Eastern Degree Day= 4,087.35+0.1417*ECEDD5WA-4.9175*TREND

5-year weighted average of 4,465.5 is used for 2022 to generate 2022 degree day forecast.

Trend variables takes the values from 1 to 71 for the period of 1950-2020. 73 is used for 2022 to generate 2022 degree day forecast.

5. The degree day forecast for the Niagara weather zone was prepared using the 10-year Moving Average method. Table 6 displays the actual Environment Canada degree day data for the Niagara weather zone and the resultant degree day forecast which is calculated using data covering the period 2012 to 2021³.

Table 6
 Environment Canada Degree Day Forecast – Niagara

Col. 1 Calendar Year	Col. 2 Actual ¹
2012	3,021
2013	3,527
2014	3,832
2015	3,450
2016	3,100
2017	3,258
2018	3,488
2019	3,649
2020	3,205
2021	3,152
2023 Forecast (10-yr Moving average)	3,368

¹Environment Canada heating degree day observations from St. Catherines Airport until August 2008. Effective September 2008 Environment Canada is no longer able to provide degree day data for St.Catherines Airport. Data from September 2008 and thereafter are obtained from the Vineland Climate Station.

³ The 10 year moving average for year t is calculated as $(DD_{t-2}+DD_{t-3}+ \dots +DD_{t-10}+DD_{t-11})/10$ where DD is the actual degree day value.

Gas Supply Degree Day Conversion

6. The final step in the degree day forecast involves the conversion of Environment Canada degree days to Gas Supply degree days. Environment Canada degree days are calculated as the average of degree days related to the daily minimum and maximum temperatures within a 24-hour period. On the other hand, Gas Supply degree days are determined relative to average hourly temperatures within a 24-hour period. The latter is used by Enbridge Gas's Gas Control as it is perceived to be more representative of temperature variations within a given day. Although there are differences between the two measurements, the data sets are highly correlated.

7. The conversion leverages the correlation between both series and is carried out by regressing actual Gas Supply degree days onto actual Environment Canada degree days. The resultant equation (one for each weather zone) is used to convert the Environment Canada degree day forecast to the Gas Supply degree day forecast. Tables 7, 8 and 9 display actual Environment Canada degree days, actual Gas Supply degree days and the resultant Gas Supply degree day forecasts for the 2023 for each of the Central, Eastern, and Niagara regions, respectively. Each conversion model uses a sample that is consistent with the prescribed approved methodology to generate the forecasts. The sample for the Eastern region utilizes all the historical data available for Gas Supply degree days.

Table 7
 Determination of Gas Supply Equivalent Degree Days - Central

<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
2002	3,630	3,597
2003	3,982	3,949
2004	3,798	3,766
2005	3,797	3,750
2006	3,378	3,355
2007	3,722	3,659
2008	3,837	3,801
2009	3,836	3,767
2010	3,501	3,466
2011	3,215	3,597
2012	3,775	3,194
2013	4,103	3,746
2014	4,103	4,044
2015	3,766	3,710
2016	3,462	3,412
2017	3,502	3,499
2018	3,927	3,728
2019	3,512	3,887
2020	3,338	3,459
2021	3,636	3,301
2023 Forecast (10-year Moving average) ¹		3,598
2023 Forecast (20-year Trend) ²		3,535
2023 Forecast (50:50 Hybrid) ³		3,566

¹2023 forecast (10-year Moving average) is calculated using the following regression equation:
 Gas Supply degree day = 60.9502 + 0.9728 * (Environment Canada degree day)
 R-squared = 0.9957, Adjusted R-squared = 0.9955, F-statistic = 4169.66, Prob(F-statistic) = 0.000000

²2023 forecast (20-year Trend) is calculated using the following regression equation:
 Gas Supply degree day = 61.6678 + 0.9723 * (Environment Canada degree day)
 R-squared = 0.9965, Adjusted R-squared = 0.9961, F-statistic = 2278.64, Prob(F-statistic) = 0.000000

³2023 forecast (50:50 Hybrid) is an average of 10-year Moving average and 20-year Trend.

Table 8
 Determination of Gas Supply Equivalent Degree Days - Eastern

<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
1970	4,899	5,018
1971	4,797	4,584
1972	5,014	4,816
1973	4,420	4,480
1974	4,725	4,858
1975	4,514	4,229
1976	5,008	4,901
1977	4,597	4,604
1978	4,939	4,920
1979	4,589	4,550
1980	4,920	4,853
1981	4,438	4,361
1982	4,647	4,617
1983	4,536	4,515
1984	4,535	4,504
1985	4,659	4,648
1986	4,501	4,507
1987	4,328	4,268
1988	4,640	4,601
1989	4,931	4,883
1990	4,250	4,225
1991	4,303	4,270
1992	4,861	4,746
1993	4,780	4,715
1994	4,730	4,700
1995	4,585	4,530
1996	4,603	4,561
1997	4,786	4,711
1998	3,828	3,802
1999	4,137	4,112
2000	4,543	4,506
2001	4,115	4,071
2002	4,381	4,317
2003	4,715	4,663
2004	4,637	4,598
2005	4,421	4,397
2006	4,037	4,012
2007	4,447	4,411
2008	4,488	4,431
2009	4,534	4,472
2010	3,973	3,947
2011	4,144	4,108
2012	4,055	4,048
2013	4,402	4,484
2014	4,632	4,552
2015	4,486	4,397
2016	4,322	4,231
2017	4,378	4,318
2018	4,547	4,459
2019	4,777	4,682
2020	4,231	4,200
2021	4,077	4,009
2023 Forecast ¹		4,299

¹2023 forecast is calculated using the following regression equation:
 Gas Supply degree days = 139.9614+0.9586*(Environment Canada degree days)
 R-squared=0.9424, Adjusted R-squared=0.9413, F-statistic=818.27, Prob(F-statistic)=0.000000

Table 9
 Determination of Gas Supply Equivalent Degree Days - Niagara

<i>Col. 1</i>	<i>Col. 2</i>	<i>Col. 3</i>
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
2012	3,021	3,013
2013	3,527	3,537
2014	3,832	3,814
2015	3,450	3,548
2016	3,100	3,233
2017	3,258	3,282
2018	3,488	3,537
2019	3,649	3,670
2020	3,205	3,224
2021	3,152	3,126
2023 Forecast ¹		3,398

¹2023 forecast is calculated using the following regression equation:
 Gas Supply degree days = 141.6035+0.9669*(Environment Canada degree days)
 R-squared=0.9625, Adjusted R-squared=0.9578, F-statistic=205.43, Prob(F-statistic)=0.0000

2023 Degree Day Forecasts:

Table 10
 Summary of 2023 Degree Days Forecast

<i>Region</i>	<i>Environment Canada Degree Days</i>	<i>Gas Supply Degree Days</i>
Central	3,604	3,566
Eastern	4,339	4,299
Niagara	3,368	3,398

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit B, Tab 1 Schedule 1, para. 44

Preamble:

Parties supported the exchange service identified by Enbridge Gas as a cost-effective means to potentially reduce the current PDO by allowing PDO obligated customers to shift, in aggregate, up to an additional 37 TJ/day of Parkway obligated deliveries to Dawn at a cost to Enbridge Gas below that of the current PDCI paid on those Parkway obligated volumes.

Question(s):

- a) Please provide details of PDO volumes shifted to Dawn during 2022 YTD, by month.
- b) Please provide the monthly and total payments to Direct Customers in 2022 YTD.
- c) Compare the costs of the exchange service and PDCI on a volumetric basis.
- d) Please provide the monthly forecast of volumes for 2022 and for 2023.
- e) Please provide the forecast of Exchange and PDCI costs for 2023.

Response:

- a) There have been no PDO volumes shifted to Dawn for the current year to date. The only PDO volume shift to Dawn for the current year is forecast to occur in November 2022 for 26,517 GJ/d as a result of the exchange service contract.
- b) The Company made PDCI payments of \$8.7 million to direct purchase customers for the January to July period of 2022. Please see Table 1 for the 2022 year to date monthly breakdown of PDCI payments.

Table 1
2022 YTD PDCI Payments

Line No.	Particulars (\$000's)	Direct Purchase Customers (1)	Sales Service Customers	Total
		(a)	(b)	(c)
1	January	1,259	54	1,313
2	February	1,139	49	1,188
3	March	1,286	54	1,340
4	April	1,225	53	1,278
5	May	1,261	55	1,316
6	June	1,220	53	1,273
7	July	1,272	55	1,327
8	Total YTD	8,662	372	9,034

Note:

(1) PDCI payments to direct purchase customers are made in the month following the month the payment relates to.

c) The cost of the exchange service contract is \$0.11/GJ/day. The approved cost of the PDCI payment for 2022 is:

January to March \$0.159/GJ/day
 April to December \$0.160/GJ/day

d) The 2022 and 2023 forecast PDO volumes are included in Table 2. The actual PDO volumes for the current year to date are also provided.

Table 2
PDO Forecast Volumes (1)

Line No.	Particulars (TJ/day)	2022		2023
		Actual (a)	Forecast (2)	Forecast (b)
1	January	266	275	275
2	February	267	275	275
3	March	272	275	275
4	April	266	260	260
5	May	265	260	260
6	June	265	260	260
7	July	268	260	260
8	August		260	260
9	September		260	260
10	October		260	260
11	November		275	275
12	December		275	275
13	Annual Average (3)		266	266

Note:

- (1) PDO forecast volumes includes direct purchase and sales service customers.
- (2) 2022 annual average PDO forecast per EB-2021-0147, Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 11, Pages 6 and 7.
 The 2022 PDO forecast did not include the 26.5 TJ/day PDO shift to Dawn provided through the exchange service contract beginning November 1, 2022.
- (3) 2023 annual average PDO forecast volumes per Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 11, Pages 6 and 7.

e) The 2023 forecast cost of the exchange service contract is \$1.065 million. The 2023 forecast cost of the PDCI payments is \$15.548 million. The cost of the exchange service contract and PDCI payments can be found at Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 11, page 2.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, page 12

Preamble:

“Enbridge Gas has reviewed the hydrogen gas rate rider calculation based on the most recent approved rates (EB-2022-0089, April 1, 2022, QRAM) for Rate 1 and Rate 6 and confirms the change in the rate rider exceeds 25%. As a result, Enbridge Gas is proposing to increase the Rate 1 rate rider credit from \$10 to \$16 annually.”

Question(s):

- a) Please provide an update on the number of customers (by class) receiving blended H2 gas.
- b) Please provide the calculations that support the proposed increased rate rider credit for Rate 1 and Rate 6.

Response:

- a) There are 3,621 customers receiving blended gas in the EGD rate zone: 3,590 customers in Rate 1 and 31 customers in Rate 6.
- b) Please see the response at Exhibit I.STAFF.3.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, Appendix B

Preamble:

Normalized Average Consumption, Average Use and Lost Revenue Adjustment Mechanism: File a proposal addressing Average Use/Normalized Average Consumption at the next rebasing application with supporting evidence for the approach. This proposal should address an LRAM mechanism that includes general service customers.

Question(s):

- a) Please provide the detailed scope of the proposed approach.
- b) Will EGI discuss the scope with interested parties prior to issuing the RFP?

Response:

a - b)

Detailed scope of the Enbridge Gas's Average Use proposal will be filed as part of the 2024 Rebasing application later in fall 2022.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit D, Tab 1, Rate Order, Appendix A, pages 1 to 4

Preamble:

Column 3 of the exhibit includes escalated base rates combined with the total of ICM amounts approved in previous OEB decisions.

Question(s):

Please break out Col.3 into two columns, Col 3a showing base rates, and Col. 3b showing the total of previously approved ICM amounts.

Response:

Please see Exhibit D, Tab 1, Rate Order, Working Papers, Schedule 6, pages 1 to 3 for the 2023 proposed unit rates broken down by the base rate, the DSM unit rate and ICM unit rates approved by the OEB in previous decisions.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Energy Probe Research Foundation (EP)

Interrogatory

Reference:

Exhibit D, Tab 2, Rate Order, Appendix A, pages 1 to 17

Preamble:

Column (a) of the exhibit includes escalated base rates combined with the total of ICM amounts approved in previous OEB decisions.

Question(s):

Please break out Col. (a) into two columns, Col. (a-1) showing base rates, and Col. (a-2) the total of ICM amounts approved in previous OEB decisions.

Response:

Please see Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 6, pages 1 to 4 for the 2023 proposed unit rates broken down by the base rate, the DSM unit rate, the PDO unit rate and ICM unit rates approved by the OEB in previous decisions.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, p. 10 and Schedule 10

Preamble:

EGL evidence states: *Driver variables have remained unchanged and coefficients of existing models are re-estimated to include the most recent year of actual data. Rate 1 and Rate 6 average uses include the incremental impact of planned DSM for 2023, and have been normalized to the 2023 forecast degree days for each region as determined by OEB-Approved degree day methodologies*

Question(s):

We would like to understand better how the coefficients are re-estimated and how the DSM forecasts are included.

Please provide the last 4 years of NAC for both Rates 1 and 6.

- a) Please describe the coefficients of the existing models and how the values are re-estimated.
- b) How is the incremental impact of planned DSM included.

Response:

a - b)

Please see the response at Exhibit I.EP.1, EGD Rate Zone b) v.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, p. 10-11 and Schedule 13 including Notes.

Preamble:

EGL evidence states: *The Union rate zones general service storage and delivery rates have been adjusted to reflect the 2021 actual NAC, using the 2023 OEB-approved weather normal methodology blend of 50:50 (30-year average and 20-year declining trend). For 2023, the NAC adjustment is the variance between 2020 actual NAC and 2021 actual NAC, as shown at Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 13*

Question(s):

We would like to understand better the determination of this adjustments using the weather normal methodology

Please provide the last 4 years of NAC for Rates M1, M2, 1 and 10

Response:

Please see the response at Exhibit I.EP.1, Union Rate Zones a). Figure 1 and 2 show both Actual NAC and Target NAC for the last ten years from 2012 to 2021 for the Union Rate Zones.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, p. 10-11 and Schedule 13 including Notes.

Preamble:

EGL evidence states: *The Union rate zones general service storage and delivery rates have been adjusted to reflect the 2021 actual NAC, using the 2023 OEB-approved weather normal methodology blend of 50:50 (30-year average and 20-year declining trend). For 2023, the NAC adjustment is the variance between 2020 actual NAC and 2021 actual NAC, as shown at Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 13.*

Question(s):

We would like to understand better the determination of this adjustments using the weather normal methodology.

For this year's proposed adjustments, the Notes to Schedule 13 describe using 2022 and 2023 weather normal.

- a) Please provide the 30 and 20-year data used.
- b) Please provide a description of how the 2020 and 2021 NAC's are determined and adjusted to determine 2022 and 2023 values.
- c) Please provide the Excel spreadsheets that perform the adjustments and determine the 2023 NAC's for Rates M1 and M2.

Response:

- a) The 30 and 20-year data used to produce the Union South RZ and Union North RZ normal weather is provided in Table 1 below.

Table 1

Union South RZ and Union North RZ Actual Heating Degree Days

Particulars	Year	Union South RZ	Union North RZ
		Annual Htg. Deg.Days	Annual Htg. Deg.Days
	1992	4,030.7	5,488.9
	1993	4,104.9	5,460.3
	1994	4,054.8	5,293.6
	1995	3,987.0	5,357.8
	1996	4,152.5	5,550.0
	1997	4,005.1	5,384.1
	1998	3,174.9	4,457.4
	1999	3,553.5	4,754.0
	2000	3,791.6	5,065.1
	2001	3,468.6	4,612.9
	2002	3,652.1	5,006.5
	2003	3,988.1	5,146.5
	2004	3,806.6	5,216.2
	2005	3,837.5	4,865.8
	2006	3,407.4	4,472.7
	2007	3,699.9	4,887.8
	2008	3,869.1	5,039.7
	2009	3,824.1	5,049.0
	2010	3,573.6	4,461.5
	2011	3,695.1	4,741.0
	2012	3,274.2	4,367.3
	2013	3,874.6	5,130.6
	2014	4,221.1	5,360.7
	2015	3,834.2	4,912.0
	2016	3,509.8	4,627.9
	2017	3,562.4	4,828.3
	2018	3,839.0	5,072.0
	2019	3,929.2	5,230.6
	2020	3,556.7	4,725.8
	2021	3,420.0	4,458.2
30 Yr Average		3,756.6	4,967.5
20 Yr Trend	2023	3,652.4	4,786.6
2023 Normal		3,704.4	4,877.0

b) The 2020 and 2021 actual average consumption is the sum of the monthly calculation of the total volume divided by the total customer count reported for each rate class in each respective year.

The 2022 target NAC is the 2020 actual average consumption that was weather normalized at the 2022 OEB-approved weather normal. The weather normalization is calculated by applying the weather normalization factors to the actual average consumption by rate class and service class. The weather normalization factors are composed by the 2013 OEB-approved weather elasticities¹ and the percentage weather variance between the 2020 actual and the 2022 OEB-approved normal. The weather normalized average consumption by rate class and service class is then multiplied by the actual customer count to obtain the weather normalized volumes by rate class and service class. The weather normalized volumes by rate class and service class are rolled up at the rate class level, then it is divided by the actual customer count also rolled up by rate class to obtain the 2022 weather normalized consumption (NAC) by rate class.

The 2023 target NAC is the 2021 actual average consumption that was weather normalized at the 2023 Board-approved weather normal. The weather normalization is calculated by applying the weather normalization factors to the actual average consumption by rate class and service class. The weather normalization factors are composed by the 2013 OEB-approved weather elasticities and the percentage weather variance between the 2021 actual and the 2023 Board-approved normal. The weather normalized average consumption by rate class and service class is then multiplied by the actual customer count to obtain the weather normalized volumes by rate class and service class. The weather normalized volumes by rate class and service class are rolled up at the rate class level, then it is divided by the actual customer count also rolled up by rate class to obtain the 2023 weather normalized consumption (NAC) by rate class.

An excel spreadsheet that performs the adjustments and determine the 2023 NAC's for Rates M1 and M2 is provided in Attachment 1.

¹ Weather elasticity is the percentage change in consumption resulting from a 1% change in actual weather to normal.

Union South Rate Zone															
2023 Target NAC calculation for Rate M1 and Rate M2															
Line No.	Particulars	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
<u>2023 Normal Weather (HDD)</u>															
1	Union South RZ	696	624	531	328	151	31	6	11	70	243	420	595	3,704	
<u>2021 Actual Weather (HDD)</u>															
2	Union South RZ	640	669	449	307	167	14	5	2	53	153	444	517	3,420	
3	Variance to 2023 Normal Weather (HDD) Union South RZ	-	56	45	- 83	- 21	17	- 17	0	- 8	- 17	90	24	- 78	284
4	% Union South RZ	-8%	7%	-16%	-6%	11%	-56%	-7%	-78%	-25%	-37%	6%	-13%	-8%	
<u>2013 OEB-Approved Weather Elasticity</u>															
5	Rate M1 Residential	0.980	0.983	0.984	0.963	0.910	-	-	-	-	0.895	0.948	0.975		
6	Commercial	0.902	0.890	0.873	0.790	0.597	-	-	-	0.214	0.712	0.834	0.885		
7	Tobacco	-	-	-	-	-	-	-	-	-	-	-	-		
8	Industrial	0.772	0.772	0.772	0.376	0.376	-	-	-	-	0.674	0.674	0.674		
9	Rate M2 Residential	0.980	0.983	0.984	0.963	0.910	-	-	-	-	0.895	0.948	0.975		
10	Commercial	0.899	0.888	0.872	0.793	0.608	-	-	-	0.222	0.721	0.836	0.884		
11	Tobacco	-	-	-	-	-	-	-	-	-	-	-	-		
12	Industrial	0.772	0.772	0.772	0.376	0.376	-	-	-	-	0.674	0.674	0.674		
<u>2021 Actual Average Use per Customer (m3)</u>															
13	Rate M1 Residential	345	345	244	167	115	74	58	58	60	87	219	296	2,068	
14	Commercial	1,320	1,379	952	566	370	153	140	156	169	389	896	1,036	7,526	
15	Tobacco	-	3,068	1,985	666	974	224	528	-	-	-	-	-	1,309	
16	Industrial	2,152	3,138	1,545	980	500	128	123	74	238	400	1,722	2,074	13,073	
17	Rate M2 Residential	17,005	8,779	10,909	6,780	2,231	6,770	1,677	974	3,377	5,081	4,083	5,897	60,023	
18	Commercial	18,714	21,198	15,006	9,356	7,940	3,623	2,180	4,130	4,643	7,614	14,206	14,282	122,892	
19	Tobacco	-	14,839	5,750	4,776	7,277	1,485	3,725	-	-	-	-	-	8,175	
20	Industrial	34,014	34,452	26,417	21,339	14,228	15,844	4,305	10,543	11,088	15,359	16,505	32,236	236,330	
21	Total Rate M1	418	427	297	198	134	80	64	65	68	109	271	353	2,483	
22	Total Rate M2	20,722	23,128	16,747	11,304	8,803	5,671	2,543	5,219	5,725	8,912	14,554	17,265	140,593	
<u>2021 Actual Customers</u>															
23	Rate M1 Residential	1,077,566	1,079,700	1,079,297	1,081,788	1,083,531	1,083,725	1,083,004	1,081,102	1,082,485	1,081,734	1,083,416	1,085,457		
24	Commercial	81,199	81,245	81,218	81,141	81,008	80,847	82,381	81,203	81,407	81,120	81,167	81,574		
25	Tobacco	540	538	540	538	528	526	-	-	-	-	-	-		
26	Industrial	3,747	3,765	3,749	3,750	3,725	3,719	3,804	3,721	3,734	3,710	3,713	3,732		
27	Rate M2 Residential	21	20	20	20	115	20	30	30	30	30	30	31		
28	Commercial	6,370	6,435	6,387	6,557	6,326	6,391	6,622	6,552	6,571	6,541	6,567	6,588		
29	Tobacco	137	136	137	136	138	134	-	-	-	-	-	-		
30	Industrial	1,335	1,331	1,332	1,337	1,331	1,337	1,376	1,364	1,338	1,335	1,331	1,336		
31	Total Rate M1	1,163,052	1,165,248	1,164,804	1,167,217	1,168,792	1,168,817	1,169,189	1,166,026	1,167,626	1,166,564	1,168,296	1,170,763		
32	Total Rate M2	7,863	7,922	7,876	8,050	7,910	7,882	8,028	7,946	7,939	7,906	7,928	7,955		
<u>2023 Target NAC (m3)</u>															
33	Rate M1 Residential	375	322	288	178	104	74	58	58	60	130	207	340		
34	Commercial	1,423	1,295	1,101	596	347	153	140	156	179	529	855	1,172		
35	Tobacco	-	3,068	1,985	666	974	224	528	-	-	-	-	-		
36	Industrial	2,293	2,972	1,756	1,005	480	128	123	74	238	533	1,657	2,275		
37	Rate M2 Residential	18,453	8,196	12,879	7,230	2,026	6,770	1,677	974	3,377	7,593	3,870	6,763		
38	Commercial	20,166	19,918	17,360	9,861	7,436	3,623	2,180	4,130	4,912	10,381	13,547	16,159		
39	Tobacco	-	14,839	5,750	4,776	7,277	1,485	3,725	-	-	-	-	-		
40	Industrial	36,256	32,627	30,021	21,871	13,655	15,844	4,305	10,543	11,088	20,452	15,883	35,366		
41	Total Rate M1	453	399	349	210	122	80	64	65	69	159	257	404	2,631	
42	Total Rate M2	22,283	21,780	19,271	11,806	8,300	5,671	2,543	5,219	5,947	12,071	13,903	19,348	148,143	

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, Section 3,
Exhibit D, Tab 2, Rate Order Working Papers Schedule 11 and
EB-2020-0095 Exhibit I.FRPO.3, .5 and .6
EB-2019-0159 Exhibit A, Tab 7, Schedule 1

Preamble:

We would like to understand better the evolution of the Dawn-Parkway system, the impact of PDO and capital builds and the resulting impact on rates.

Question(s):

Please update to current and provide Attachments 3 and 4 provided in EB-2020-0095 Exhibit I.FRPO.3

Response:

Please see Attachment 1 and Attachment 2. For purposes of this response, Enbridge Gas has assumed the question is referring to EB-2021-0147, Exhibit I.FRPO.3, Attachments 3 and 4.

UNION RATE ZONES
Dawn to Parkway System Capacity and Demand, PDO Shift Details, and PDO Demand Revenue Difference

Line No.	Particulars (TJ/d)	2013 Forecast									
		W13/14 (a)	W14/15 (b)	W15/16 (c)	W16/17 (d)	W17/18 (e)	W18/19 (f)	W19/20 (g)	W20/21 (h)	W21/22 (i)	W22/23 (j)
<u>Dawn-Parkway System</u>											
Included in Rates											
1	2013 Cost of Service (EB-2011-0210) Capacity	6,803	6,803	6,803	6,803	6,803	6,803	6,803	6,803	6,803	6,803
2	Incremental Dawn-Parkway Capacity (1)	-	-	433	876	1,332	1,332	1,332	1,332	1,332	1,332
3	Total	6,803	6,803	7,236	7,678	8,135	8,135	8,135	8,135	8,135	8,135
Other Changes (No Impact to Rates)											
4	Other Dawn-Parkway Capacity Changes	-	(2)	(222)	(170)	(246)	(262)	(256)	(219)	(169)	(160)
Annual Forecast											
5	Total Forecasted Dawn-Parkway Capacity (line 3 + line 4)	6,803	6,801	7,014	7,508	7,889	7,873	7,878	7,915	7,966	7,975
6	Total Forecasted Dawn-Parkway Demands	6,593	6,643	7,049	7,443	7,783	7,759	7,905	7,911	8,038	7,992
7	Forecast Dawn-Parkway Excess/(Shortfall) (line 5 - line 6) (2)	210 (3)	158	(35)	65	106 (4)	114	(27)	4	(72)	(17)

Notes:

- (1) W15/16 - Incremental capacity resulting from the Brantford-Kirkwall / Parkway D Project of 433 TJ/d.
W16/17 - Incremental capacity resulting from the Dawn Parkway 2016 System Expansion Project of 443 TJ/d.
W17/18 - Incremental capacity resulting from the 2017 Dawn Parkway Project of 457 TJ/d.
- (2) The PDO shift was reflected in Dawn-Parkway excess/(shortfall) beginning W15/16.
- (3) The W13/14 forecast filed in Union's 2013 Cost of Service proceeding (EB-2010-0210) included 210 TJ/d of excess Dawn-Parkway capacity. In the EB-2011-0210 Decision, the Board accepted Union's forecast and regulatory treatment. Union's 2013 cost allocation study allocates Dawn-Parkway demand costs in proportion to distance weighted design day demands. The 2013 allocation resulted in approximately 84% of costs allocated to Union's ex-franchise rate classes and 16% to Union's in-
- (4) As part of the 2017 Dawn-Parkway Project (EB-2015-0200), Union had forecast a surplus of 30,393 GJ/d on the Dawn-Parkway System following the completion of the project. As part of the EB-2015-0200 Settlement Agreement, Union agreed to market the surplus capacity in accordance with the Storage and Transportation Access Rule ("STAR") and credit the revenues to the project deferral account.

UNION RATE ZONES
Dawn Parkway Forecast Usage for Rate-Setting

Line No.	Particulars (GJ)	EGD Rate Zone (a)	Other Ex-Franchise (b)	Total (c)	EGD as % of Total (d) = (a/c)
<u>2013 Forecast Usage (1)</u>					
Rate M12/C1					
1	Dawn to Parkway	23,486,076	19,566,524	43,052,600	54.6%
2	Dawn to Kirkwall	-	8,708,176	8,708,176	0.0%
3	Kirkwall to Parkway	-	1,411,468	1,411,468	0.0%
4	M12-X	2,400,000	2,292,132	4,692,132	51.1%
5	Parkway to Dawn	2,839,032	1,492,491	4,331,523	65.5%
6	Rate C1 Dawn-Parkway	-	84,780	84,780	0.0%
<u>Capital Pass-through Projects</u>					
Rate M12/C1					
7	Dawn to Parkway	6,650,319	5,299,461	11,949,780	55.7%
8	Dawn to Kirkwall	-	-	-	-
9	Kirkwall to Parkway	-	1,453,860	1,453,860	0.0%
10	M12-X	-	-	-	-
11	Parkway to Dawn	-	-	-	-
12	Rate C1 Dawn-Parkway	-	421,080	421,080	0.0%
<u>2023 Forecast Usage for Rate-Setting (2)</u>					
Rate M12/C1					
13	Dawn to Parkway	30,136,395	24,865,985	55,002,380	54.8%
14	Dawn to Kirkwall	-	8,708,176	8,708,176	0.0%
15	Kirkwall to Parkway	-	2,865,328	2,865,328	0.0%
16	M12-X	2,400,000	2,292,132	4,692,132	51.1%
17	Parkway to Dawn	2,839,032	1,492,491	4,331,523	65.5%
18	Rate C1 Dawn-Parkway	-	505,860	505,860	0.0%

Notes:

- (1) Total forecast usage per EB-2011-0210, Rate Order, Working Papers, Schedule 14, p. 11, column (a) expressed in GJ.
- (2) Total forecast usage per Exhibit D, Tab 2, Rate Order, Working Papers, Schedule 5, column (n) annualized.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, Section 3,
Exhibit D, Tab 2, Rate Order Working Papers Schedule 11 and
EB-2020-0095 Exhibit I.FRPO.3, .5 and .6
EB-2019-0159 Exhibit A, Tab 7, Schedule 1

Preamble:

In last year's proceeding in FRPO. 5, we asked:

Please provide the resulting design day simulation results for this applications Dawn-Parkway system assuming that Parkway deliveries moved to Dawn as a result of the PDO settlement agreement:

- a) *Were moved*
- b) *Were not moved (i.e., before and after application of existing PDO to show effect)*

While EGI provided a high-level answer, we did not receive the simulation results for that winter.

Question(s):

Please provide the resulting design day simulation results for this applications Dawn-Parkway system assuming that Parkway deliveries moved to Dawn as a result of the PDO settlement agreement:

- a) Were moved
- b) Were not moved (i.e., before and after application of existing PDO to show effect)
- c) Please provide the resulting pressures and flows on a schematic like the example referenced from EB-2019-0159 (even if the minimum inlet design pressure at Parkway is not achieved)
- d) Please provide the minimum inlet design pressure required at:
 - i) Parkway to compress to TCPL
 - ii) Inlet to legacy EGD facilities at Lisgar (entrance to EGD rate zone)

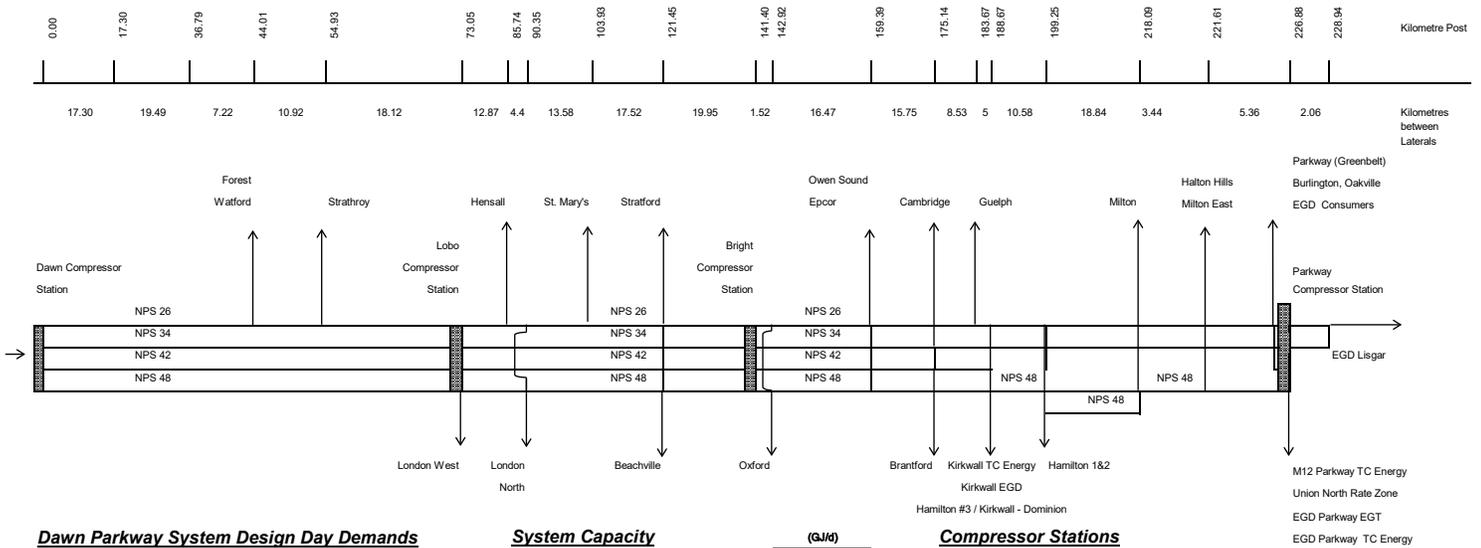
Response:

a - b)

Firm obligated deliveries at Parkway increase the Dawn Parkway System capacity by an equivalent amount. Assuming that firm obligated Parkway deliveries were shifted to Dawn, the Dawn Parkway System capacity would decrease by approximately 244 TJ/d in winter 2022/2023. The 244 TJ/d is equal to the PDO by direct purchase customers without M12 service provided at Exhibit B, Tab 1, Schedule 1, Appendix A, page 1, column (g), row 13. The schematic for Winter 2022/2023 is provided in Attachment 1.

- c) Under design day conditions, if the 244 TJ/d of PDO were moved to Dawn, the resulting Dawn Parkway System simulation would be infeasible and will not solve for the design day. The suction pressures at Parkway compressor station would drop below minimum requirements preventing the compressors from being operable. As a result, Parkway's discharge pressure would drop below contractual requirements.
- d) i) At Parkway the absolute minimum inlet design pressure to operate the compressors is 3,380 kPag.
- ii) The minimum inlet design pressure to legacy EGD facilities at Lisgar is 3,450 kPag.

Dawn Parkway System Demands Winter 2022/2023



Dawn Parkway System Design Day Demands Infranchise

	(GJ/d)
Union South Rate Zone	
Forest, Watford	10,804
Strathroy	19,058
London West	147,589
Hensall	46,115
London North	107,297
St. Mary's	8,972
Stratford	43,965
Beachville	60,153
Oxford	47,921
Owen Sound	288,308
Cambridge	84,065
Brantford	111,919
Kirkwall - Dominion	86,453
Guelph	98,693
Hamilton 3	63,779
Hamilton 1&2	288,788
Milton	71,757
Milton East	9,211
Halton Hills	136,834
Parkway (Greenbelt)	24,007
Burlington, Oakville	187,464
Total Union South Rate Zone	1,943,152
Union North Rate Zone	442,149
EGD Rate Zone	
Kirkwall	70,895
Parkway EGT	800,000
Consumers 1 and 2 / Lisgar	1,393,961
Parkway TC Energy	957,933
Total EGD Rate Zone	3,222,789
M12 Exfranchise	
Kirkwall	49,500
Parkway TC Energy	2,325,135
Total M12	2,374,635
M17 Exfranchise	
Epcor	8,863
Total M17	8,863
Total Design Day Demands	7,991,588

System Capacity

Total System Capacity	7,974,631
(Including Firm Service Receipts of 249,860 (GJ/d))	
Total Requirements	7,991,588
Total (Shortfall) Surplus	(16,957)

Compressor Stations

Operating Conditions at Peak Hour

STATION	LOBO	BRIGHT	PARKWAY
Power Available (MW)	102.9	129.0	88.1
Power Required (MW)	102.9	129.0	88.1
Pressure			
Suction (kPa)	3,725	3,482	3,592
Discharge (kPa)	5,518	5,930	6,453
Compression Ratio	1.48	1.70	1.80
Flow (GJ/d)	7,325,796	6,902,533	4,287,513
Daily Fuel (GJ/d)	34,529	28,403	18,267

**Winter Design Day
 Dawn Parkway System
 Winter 2022/2023**

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Exhibit B, Tab 1, Schedule 1, Section 3,
Exhibit D, Tab 2, Rate Order Working Papers Schedule 11 and
EB-2020-0095 Exhibit I.FRPO.3, .5 and .6
EB-2019-0159 Exhibit A, Tab 7, Schedule 1

Preamble:

In last year's proceeding in FRPO. 5, we asked:

*Please provide the resulting design day simulation results for this applications
Dawn-Parkway system assuming that Parkway deliveries moved to Dawn as a
result of the PDO settlement agreement:*

- a) Were moved*
- b) Were not moved (i.e., before and after application of existing PDO to
show effect)*

While EGI provided a high-level answer, we did not receive the simulation results for that winter

Question(s):

Please provide if there has been any Dawn-Parkway system turnback that would be returned in the second half of 2022 through to the end of 2023. Please note: we are asking Dawn-Parkway system not just Dawn-Kirkwall.

Response:

Enbridge Gas has received notice of Dawn-Parkway turnback effective September 1, 2022 for 128,316 GJ/d. For November 1, 2023, Enbridge Gas has received notice of Dawn-Parkway turnback of 13,182 GJ/d and Kirkwall-Parkway of 13,545 GJ/d.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Preamble:

In FRPO.6 in last year's proceeding, we asked about the determination of the fuel impact of the PDO. EGI's response included:

- a) *The allocation of forecast compressor fuel along the Dawn Parkway system is completed in accordance with the OEB Approved M12 Rate Schedule¹. The allocations are completed monthly, by compressor station based on forecast activity.*
- b) *The movement of obligated deliveries from Parkway to Dawn increase in-franchise easterly activity on the system. The ability to allow customers to shift their obligated deliveries results from M12 turnback capacity which reduces M12 activity on the Dawn Parkway system. The resulting impact is an increased share of the compressor fuel because in-franchise activity increases and M12 activity decreases. As an example, please see Attachment 1 for the allocation of compressor fuel at the Bright compressor station for the month of January.*

We would like to clarify the impact of the PDO shift as it relates to the determination of fuel gas requirements for the shift. The above EGI response provides the impact on peak months such as January.

Question(s):

Please describe how the monthly forecast is generated (i.e., daily, peak day for the month, etc.).

- a) Please provide a reconciliation between actual and forecasted incremental monthly needs generated by the PDO shift for the system on annualized basis (Apr. 2021 to Mar. 2022) described in the M12 rate schedule.

i) Please note: If EGI believes the response to this question resides more appropriately in the deferral account disposition proceeding (EB-2022-0110), we respectfully request that EGI prepare a response and submit to the Board with its requested September 2nd extension, if approved by the Board, prior to the settlement conference in that proceeding.

Response:

The compressor fuel budget estimates Dawn, Lobo, Bright and Parkway fuel required to meet physical Dawn Parkway flows. The required fuel is then allocated to in-franchise and ex-franchise customers based on a forecast of in-franchise and ex-franchise activity. In-franchise activity is driven by the Gas Supply Plan while ex-franchise activity is based on forecasted load factors applied to ex-franchise contracts. The compressor fuel budget is prepared monthly.

It is not possible to isolate the impact of PDO shift on an actual basis as there are numerous factors that impact actual compressor fuel usage, including but not limited to weather, changes in load factors assumed for ex-franchise activity, etc.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental Housing Providers of Ontario (FRPO)

Interrogatory

Preamble:

In FRPO.6 in last year's proceeding, we asked about the determination of the fuel impact of the PDO. EGI's response included:

- a) *The allocation of forecast compressor fuel along the Dawn Parkway system is completed in accordance with the OEB Approved M12 Rate Schedule¹. The allocations are completed monthly, by compressor station based on forecast activity.*
- b) *The movement of obligated deliveries from Parkway to Dawn increase in-franchise easterly activity on the system. The ability to allow customers to shift their obligated deliveries results from M12 turnback capacity which reduces M12 activity on the Dawn Parkway system. The resulting impact is an increased share of the compressor fuel because in-franchise activity increases and M12 activity decreases. As an example, please see Attachment 1 for the allocation of compressor fuel at the Bright compressor station for the month of January.*

We would like to clarify the impact of the PDO shift as it relates to the determination of fuel gas requirements for the shift. The above EGI response provides the impact on peak months such as January.

Question(s):

How is the shift treated for the purposes of the traditional non-heating season months (Apr.-Oct.)?

- a) Using the same comparison generated in the IR response for the month of January, please provide a comparison for the month of September.

Response:

The allocation of forecast compressor fuel is not dependent on season. The allocation of forecast compressor fuel along the Dawn Parkway system is completed in accordance with the OEB Approved M12 Rate Schedule¹. The allocations are completed monthly, by compressor station based on forecast activity.

¹ EB-2022-0133, Exhibit D, Tab 2, Rate Order, Appendix B, Rate M12 Schedule, page 3.

As an example of a non-heating month, please see Attachment 1 for the allocation of compressor fuel at the Bright compressor station for the month of September.

UNION GAS LIMITED
Estimated Fuel Impact of the Parkway Delivery Obligated Reduction at the Bright Compressor

Line No.	Particulars (GJ)	Allocation of Fuel (Updated for PDO)			Allocation of Fuel (as filed in EB-2011-0210)			Difference (p) = (e - j)
		Fuel (a)	Activity (b)	%	Fuel (f)	Activity (g)	%	
1	M12 Easterly	67	40,911,032	88%	67	41,471,702	89%	(0)
2	M12 Westerly	-	-		-	-		-
3	C1 LT Easterly	-	197,820	0%	-	197,820	0%	-
4	C1 ST Easterly	8	5,131,551	11%	8	5,131,551	11%	0
5	C1 LT Westerly	-	-		-	-		-
6	C1 ST Westerly	-	-		-	-		-
7	M16 to Pool	-	-		-	-		-
8	Infranchise - North	-	-	0%	-	-	0%	-
9	Infranchise - South	-	-	0%	-	-	0%	-
10	Total	76	46,240,404	100%	76	46,801,074	100%	(0)

Notes:

- (1) Sales of Dawn to Parkway transportation services were reduced by 151 TJ per day.
- (2) Compressor throughput was adjusted to account for a shift of 219 TJ of delivered supply from Parkway to Dawn and 151 TJ/d of M12 turnback.
- (3) Compressor fuel costs increased to reflect the change in flows outlined in note (2).
- (4) Based on contract quantities from 2013 Rates filing.
- (5) Allocation of fuel is consistent with YCR formula in the current M12 Rate Schedule.
- (6) The total fuel excludes C1 Dawn to Dawn-Vector and C1 Dawn to Dawn-TCPL fuel of 31,960 GJ.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Question(s):

Please provide a list of stakeholders, organizations, interest groups and municipalities consulted prior to filing the 2023 Rate Application.

Response:

As per the letter of direction, dated July 20, 2022 in this proceeding, the municipalities were served the OEB Notice and the Application. Enbridge Gas did not consult any stakeholders, organizations, interest groups and the municipalities served by Enbridge Gas prior to filing the 2023 Rates application.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Question(s):

Please indicate whether Enbridge has completed its annual IRP report (per EB-2020-0091) and where it has been (or will be) filed with the OEB.

Response:

As directed in the OEB Decision in EB-2020-0091¹, Enbridge Gas filed the 2021 IRP Annual Report in the 2021 Utility Earnings and Disposition of Deferral & Variance Account Balances Application and Evidence proceeding².

¹ EB-2020-0091 Decision and Order, page 84, dated 2021-07-22.

² EB-2022-0110, Exhibit H, Tab 1, dated 2022-05-31.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Question(s):

Enbridge indicated that it would update its processes, policies and procedures once it received the OEB's EB-2020-0091 Decision and related IRP Framework.

- a) Please provide a copy of all updated processes, policies and procedures made to align with effective internal Integrated Resource Planning (i.e. OEB's EB-2020-0091 Decision and related IRP Framework).
- b) Please identify any processes, policies and procedures updates still outstanding that are required to align with effective internal Integrated Resource Planning (i.e. OEB's EB-2020-0091 Decision and related IRP Framework). For each outstanding items, please indicate an estimated date of completion.

Response:

a - b)

Enbridge Gas declines to respond to this interrogatory as the requested information is not relevant to the relief being sought in this proceeding.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Reference:

[EB-2020-0091 Decision, page 88]

Question(s):

“Enbridge Gas indicated that it planned to engage with stakeholders and Indigenous groups before making a determination about what IRP pilot projects to pursue and also expected that the proposed Technical Working Group would provide input.

Enbridge Gas indicated that a reasonable timeline to identify, design, and deploy the IRP pilot projects would see initial steps beginning within three months of the issuance of the OEB’s IRP Framework, with deployment by the end of 2022.”

- a) Please provide an update on the two pilot projects proposed by Enbridge and whether these are on track for deployment by the end of 2022.
- b) Please identify any costs included in the 2023 Rate Application that would support the proposed IRP pilot projects in 2023.
- c) Please provide a list of which stakeholders and Indigenous groups (separate from the Technical Working Group) have been consulted.

Response:

The requested information is not relevant to the relief being sought in this proceeding. However, Enbridge Gas is prepared to provide a response because the information requested is readily available.

- a) Enbridge Gas continues to review potential IRP Pilot projects with the OEB established IRP Technical Working Group. Enbridge Gas expects to file IRP Plan applications for the two IRP Pilot projects by the end of 2022 but will not have them deployed. Please see the IRP Annual Report for additional information as noted in the response to Exhibit I.PP.2.

b) There are no IRP Pilot project costs included in the 2023 Rates Application.

c) Please see response to Exhibit.I.PP.6.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Reference:

[EB-2020-0091 Decision, page 94]

Question(s):

Enbridge indicated that it intended to file its “first version of the Asset Management Plan reflecting the updated IRP Assessment Process” in Fall 2022.

Is the 2023 Rate proceeding the proceeding where Enbridge will file its “first version of the Asset Management Plan reflecting the updated IRP Assessment Process” in Fall 2022. If yes, please provide a copy of the “first version of the Asset Management Plan reflecting the updated IRP Assessment Process”. If no, please indicate which proceeding will be used to file the document.

Response:

Enbridge Gas will file the Asset Management Plan reflecting the IRP assessment process as part of the 2024 Rebasing application later in fall 2022.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Reference:

EB-2020-0091 OEB IRP Framework, Page 15

Question(s):

The OEB IRP Framework implemented in 2021 requires Enbridge to hold annual Stakeholder Days and Targeted Engagement, including a record of comments from stakeholders and Indigenous groups participating.

- a) Please provide a list of Stakeholder Days and Targeted Engagement session held to-date.
- b) Please provide a copy of the record of comments related to the Stakeholder Days and Targeted Engagement.

Response:

The requested information is not relevant to the relief being sought in this proceeding. However, Enbridge Gas is prepared to provide a response because the information requested is readily available.

- a) The Enbridge Gas Regional Stakeholder Engagement sessions will commence once Enbridge Gas files its Asset Management Plan in its Rebasing application. It is anticipated these sessions will be held throughout Q4 of 2022 and Q1 of 2023. Geo-targeted stakeholder engagement sessions will be held when needed to support the development on either an Integrated Resource Planning Alternative or the IRP Pilots.
- b) Submitted comments and responses related to the stakeholder engagement sessions will be posted on the Enbridge Gas Regional Planning web site as indicated in Exhibit.I.PP.7.

ENBRIDGE GAS INC.

Answer to Interrogatory from
Pollution Probe (PP)

Interrogatory

Reference:

EB-2020-0091 OEB Decision, Page 7

Question(s):

“Enbridge Gas will also establish a website to facilitate the broad sharing of information on IRP stakeholdering efforts.”

- a) Please provide the url for the Enbridge IRP website.
- b) Please provide a summary of the stakeholder outreach and information collected via the IRP website.

Response:

The requested information is not relevant to the relief being sought in this proceeding. However, Enbridge Gas is prepared to provide a response because the information requested is readily available.

- a) The URL for the Enbridge IRP website is:
<https://www.enbridgegas.com/sustainability/regional-planning-engagement>
- b) Please see the response at Exhibit I.PP.6.