

April 28, 2018

BY EMAIL, COURIER & RESS

Ms. Kirsten Walli
 Board Secretary
 Ontario Energy Board
 Suite 2700, 2300 Yonge Street
 Toronto, Ontario
 M4P 1E4

RE: EB-2017-0255 – Union Gas Limited 2018 Cap-and-Trade Compliance Plan – Oral Hearing Undertaking Responses and Transcript Corrections

Dear Ms. Walli,

Please find attached Union Gas Limited's ("Union") responses to the undertakings received during the EB-2017-0255 oral hearing held on April 23 and 24, 2018. These will be filed on the RESS and copies will be sent to the Ontario Energy Board ("the Board").

Union has adjusted the undertaking wording, as required, to accurately reflect the substance of the requests accepted. A summary of the adjustments is provided in Appendix A.

Union's witnesses have also reviewed the EB-2017-0255 Volume 1 and Volume 2 transcripts and have noted the corrections listed below.

Volume	Page	Line(s)	As Stated	Correction
1 , 2	Appearances		ADAM SPIERS	ADAM STIERS
1	3	19	...Lauren Murray...	... Lawren Murray...
1	5	20	JT1.2	JT1.12
1	6	3	JT1.2	JT1.12
1	8	9	...the argument good morning that Mr. Elson is making...	...the argument this morning that Mr. Elson is making...
1	8	14	We received Mr. Elson's compendium and noticed...	We received Mr. Elson's compendium and notice ...
1	11	25	...about JT1.2 also.	...about JT1.12 also.
1	13	16	...Board as to why it was the practice direction.	...Board as to why it meets the practice direction.
1	15	17 , 28	Harris Ginis...	Haris Ginis
1	18	11	...important to understand the guiding principles with which...	...important to understand the guiding principles which...
1	18	23	...rate predictable, cost recovery, transparency that balances...	...rate predictability , cost recovery, transparency that balances...
1	20	22	...it is Union's an intent...	...it is Union's intent...

Volume	Page	Line(s)	As Stated	Correction
1	21	14-15	...available for Ontario; Ontario wins.	...available for Ontarians .
1	21	22	...related to oxygen...	...related to auction ...
1	29	6	MS. FLAMAN: [No audible response]	MS. FLAMAN: Correct
1	31	20	...and if the LCAF is approved...	...and if the LCIF is approved...
1	41	16	...implemented with a minimum invasion.	...implemented with a minimum investment .
1	44	13	...those experiments with catalytic...	...those experiments with electrolysis ...
1	44	15 - 16	...hydrogen in lieu of it.	...hydrogen as a result of it.
1	73	3	...in Union's trading cap-and-trade resources is incremental.	...in Union's treating cap-and-trade resources is incremental.
1	76	5	We do have to keep in mine...	We do have to keep in mind ...
1	84	17,21,24	MS. NEWBURY:	MS. FLAMAN:
1	85	1,4	MS. NEWBURY:	MS. FLAMAN:
1	86	18	The 4 million forecast in 2014...	The 4 million forecast in 2018 ...
1	88	15	MS. NEWBURY:	MS. FLAMAN:
1	89	25	...balance of how much technologies are out there.	...balance of how many technologies are out there.
1	96	17	...there is not a normal agreement...	...there is not a formal agreement...
1	116	23	...examples of grounds for speed-bumps...	...examples of ground-source heat pumps ...
1	128	13	It is pretty commercial...	It is pre commercial...
1	130	1	...would be the insulation requirements...	...would be the installation requirements...
1	132	11	...one winter they had minus...	... Windsor could be at minus...
1	133	23	...through the EPGA...	...through the PGVA ...
1	176	10	...where we compared the back opportunity...	...where we compared the MACC opportunity...
1	176	13 , 28	Staff 30	Staff 31
1	182	14 , 19	...WACG...	... WACOG ...
1	183	10	...forecast as expected to be in the material.	...forecast is expected to be immaterial .
2	17	12	There was no plans to use GreenON dollars...	There were no plans to use GreenON dollars...
2	17	17	Are you asking through your DSM programs?	Are you asking through our DSM programs?
2	18	18	...that 26 balances...	...that 2016 balances...
2	21	9	...it uses UCTS...	...it uses UCT ...
2	26	11 - 12	...we organized a design share ed (ph)...	...we organized a design charrette ...
2	29	13	...MERBs through to residential.	... MURBs through to residential.
2	34	22	...does that compare...	...does that impair ...
2	63	2 , 23	Ms. Bing	Ms. Byng
2	66	26	...to option C, the option for a price increasing annually.	...to auctions, the auction floor prices increase annually .

Volume	Page	Line(s)	As Stated	Correction
2	68	4	Again in Canada, we also have effects impacts...	Again in Canada, we also have FX impacts...
2	102	19	...like in the CNI markets...	...like in the C&I markets...
2	106	15	...about any cross subsidiary...	...about any cross subsidy ...
2	128	5	...energy conservation. B we have also done a number...	...energy conservation. We have also done a number...
2	141	12 , 13	...CNI programs...	... C&I programs...
2	152	2	...undertaking 4, the attribution agreements.	...undertaking for the attribution agreements.
2	156	3	...Lauren...	... Lawren ...
2	161	1	MR. MURRAY: We have not.	[Remove]
2	171	27	...typically do you this...	...typically you do this...
2	177	8	Approving the ICF will...	Approving the LCIF will...
2	182	10	(WAWWCC)	(WACC)

Yours truly,

[Original signed by]

Adam Stiers
Manager, Regulatory Initiatives

c.c.: EB-2017-0255 Parties (*by email*)
Myriam Seers, Torys (*by email*)
Valerie Bennett, OEB (*by email*)
Ljuba Djurdjevic, OEB (*by email*)
Lawren Murray, OEB (*by email*)
Josh Wasylyk, OEB (*by email*)

Appendix A - Undertaking Adjustments

Undertaking	Per Transcript	Adjusted
J1.1	TO UPDATE THE BUDGET TO INCLUDE THE 11.25	TO UPDATE THE BUDGET TO REFLECT THE CHANGE FROM 12.5 FTES TO 11.25 FTES
J1.2	TO FURTHER EXPAND AS TO THE APPROVALS BEING SOUGHT IN THIS PROCEEDING AND THE APPROVALS THAT WILL BE SOUGHT IN A DISPOSITION PROCEEDING.	TO FURTHER EXPAND AS TO THE APPROVALS BEING SOUGHT IN THIS PROCEEDING AND THE APPROVALS THAT WILL BE SOUGHT IN A DISPOSITION PROCEEDING AND WHAT TESTS WOULD BE APPLIED.
J1.3	FOR EACH OF THE THREE RELATED GAS USES SHOWN IN THE RESPONSE, WHICH ARE UNACCOUNTED FOR GAS, COMPRESS FUEL AND BLOWDOWNS AND BUILDINGS AND LINE HEATERS, TO INDICATE IF THERE IS A DEFERRAL OR VARIANCE ACCOUNT ASSOCIATED WITH THE COST OF GAS; TO PROVIDE THE ESTIMATED ANNUAL VOLUME FOR EACH OF THE THREE GAS USES SHOWN THAT TOTAL THE 3.5 PETAJOULES FOR ITS FACILITY-RELATED FUEL REQUIREMENTS.	FOR EACH OF THE THREE RELATED GAS USES SHOWN IN THE RESPONSE TO JT1.21, WHICH ARE UNACCOUNTED FOR GAS, COMPRESSOR FUEL AND BLOWDOWNS AND BUILDINGS AND LINE HEATERS, TO INDICATE IF THERE IS A DEFERRAL OR VARIANCE ACCOUNT ASSOCIATED WITH THE COST OF GAS; TO PROVIDE THE ESTIMATED ANNUAL VOLUME FOR EACH OF THE THREE GAS USES SHOWN THAT TOTAL THE 3.5 PETAJOULES FOR ITS FACILITY-RELATED FUEL REQUIREMENTS.
J2.2	TO UPDATE THE TABLE USING THE SAME INFLATION FACTOR THAT THEY HAVE POST-2028.	TO UPDATE THE TABLE AT EXHIBIT JT1.2, ATTACHMENT A, USING THE SAME INFLATION FACTOR THAT ENBRIDGE HAS POST-2028.
J2.3	TO PROVIDE AN EQUIVALENT TO ENBRIDGE'S RESPONSE TO JT2.4 ON A BEST EFFORTS BASIS AND WITH APPROPRIATE CAVEATS AND, IF NECESSARY, USING 2015	TO PROVIDE AN EQUIVALENT TO ENBRIDGE'S RESPONSE TO JT2.4 ON A BEST EFFORTS BASIS FOR THE YEAR 2015, WITH APPROPRIATE CAVEATS
J2.7	ON A BEST EFFORTS BASIS, TO PROVIDE IN RESPECT OF 2016 AND 2017 THE TOTAL SAVINGS AMOUNTS ACHIEVED THROUGH DSM PROGRAMS AS A PERCENTAGE BY END USE SEGMENT ON AN UNAUDITED BASIS FOR COMMERCIAL / INDUSTRIAL, AND THEN TO APPLY THOSE RESULTS TO THE 2018 MACC	ON A BEST EFFORTS BASIS, TO PROVIDE IN RESPECT OF 2016 AND 2017 THE TOTAL SAVINGS AMOUNTS ACHIEVED THROUGH DSM PROGRAMS AS A PERCENTAGE BY END USE SEGMENT ON AN UNAUDITED BASIS FOR COMMERCIAL / INDUSTRIAL, AND THEN TO APPLY THOSE RESULTS TO THE 2018 DSM FORECAST
J2.8B	TO PROVIDE THE 2016/'17 TOTAL SAVINGS AMOUNT THROUGH DSM PROGRAMS.	N/A - This exchange was confirming the contents of undertaking J2.7 (please see p. 179, lines 17-19, 27-28 and p.180, line 1).

UNION GAS LIMITED

Undertaking of Mr. Dantzer

To Mr. Wolnik

Reference: Tr.1, p.79

TO UPDATE THE BUDGET TO REFLECT THE CHANGE FROM 12.5 FTES TO 11.25 FTES

Response:

The 2018 Compliance Plan outlook for Salary & Wages, based on a forecast of 11.25 FTEs, is provided below.

Salaries & Wages: \$1,288,000
+ Loadings: \$1,040,000
Total: \$2,328,000

This is \$270,000 lower than the 2018 Compliance Plan forecast of \$2,598,000.¹

¹ EB-2017-0255, Exhibit 3, Tab 5, Schedule 2

UNION GAS LIMITED

Undertaking of Mr. Trofim-Breuer
To Mr. Rubenstein

Reference: Tr.1, p. 123

TO FURTHER EXPAND AS TO THE APPROVALS BEING SOUGHT IN THIS
PROCEEDING AND THE APPROVALS THAT WILL BE SOUGHT IN A DISPOSITION
PROCEEDING AND WHAT TESTS WOULD BE APPLIED.

Response:

This response is in relation to the approvals sought related to the Low Carbon Initiative Fund (“LCIF”).

Consistent with the approval granted in EB-2016-0296, Union requests a determination from the Board that the cost consequences of its 2018 Compliance Plan are just and reasonable, including up to \$2 million in cost consequences associated with the LCIF in Union’s Greenhouse Gas Emissions Impact Deferral Account (“GGEIDA”) (Account No. 179-152). Union expects that the actual cost consequences associated with the LCIF would be subject to a final review by the Board as part of a future proceeding when Union applies to dispose of the resulting balance in its GGEIDA.

Union submits, as it submitted in its Reply Argument in EB-2016-0296, that it would be inappropriate for the Board to determine that the cost consequences of the 2018 Compliance Plan are just and reasonable, only to then disallow those costs at disposition absent a change in circumstances.

Thus, Union expects that the nature of the Board’s review at disposition will be to determine: a) whether the costs sought to be recovered are the consequence of the approved plan, and b) whether there were any change in circumstances that rendered compliance with the approved plan unreasonable.

UNION GAS LIMITED

Undertaking of Ms. Newbury
To Ms. Girvan

Reference: Tr.1, pp. 134 - 135

FOR EACH OF THE THREE RELATED GAS USES SHOWN IN THE RESPONSE TO JT1.21, WHICH ARE UNACCOUNTED FOR GAS, COMPRESSOR FUEL AND BLOWDOWNS AND BUILDINGS AND LINE HEATERS, TO INDICATE IF THERE IS A DEFERRAL OR VARIANCE ACCOUNT ASSOCIATED WITH THE COST OF GAS; TO PROVIDE THE ESTIMATED ANNUAL VOLUME FOR EACH OF THE THREE GAS USES SHOWN THAT TOTAL THE 3.5 PETAJOULES FOR ITS FACILITY-RELATED FUEL REQUIREMENTS.

Response:

The 2018 forecast annual volumes associated with the each of the facility-related gas uses are provided in Exhibit 2, Schedule 1.

For clarity, in the response at Exhibit B.LPMA.14 b), Union indicated the total facility-related volume forecast for 2018 is 255,182,195 m³ (approximately 9.9 PJ). Of the total facility requirement, a portion is provided by customers (customer supplied fuel). Of the 9.9 PJ, Union only purchases approximately 3.4 PJ for facility related fuel requirements.

A forecast breakdown of Union's purchases for facility-related gas uses is provided in Table 1 below.

Table 1

Facility-related gas use	2018 Forecast (PJ)
UFG	3.2
Own Use (Blowdowns / Building & Line Heaters)	0.4
Compressor Fuel	6.2
Customer Supplied Fuel	(6.4)
Total	3.4

The gas cost variance for UFG is recorded in the Unaccounted for Gas ("UFG") Price Variance Account (Deferral Account No. 179-141). All other gas cost variances are accounted for in the following deferral accounts for each delivery zone:

- South Purchase Gas Variance Account (No. 179-106)
- Union North West Purchase Gas Variance Account (179-147)
- Union North East Purchase Gas Variance Account (179-148)

UNION GAS LIMITED

Undertaking of Ms. Flaman
To Ms. Girvan

Reference: Tr.1, p. 139

TO PROVIDE THE NUMBER OF FTES AT UNION GAS PRIOR TO THE MERGER
BETWEEN ENBRIDGE INC. AND SPECTRA AND THE CURRENT NUMBER OF FTES
TODAY.

Response:

Please see the response at EB-2017-0306 / EB-2017-0307, Exhibit C.CCC.7 Updated.

UNION GAS LIMITED

Undertaking of Ms. Flaman
To Dr. Higgin

Reference: Tr.1, p. 173

TO PROVIDE THE FORECAST OF THE DSM APPROVED PROGRAMS, WITHOUT THE GIF OR ANY ENHANCEMENTS, THE BASELINE, AND THEN ADD AN ESTIMATE FROM THAT USING THE CONVERSION FACTORS OF THE GREENHOUSE GAS EMISSIONS EQUIVALENT; TO HAVE THE RESIDENTIAL SECTOR AMOUNTS TO DATE AND FORECAST AND FORECAST FOR THE WHOLE SIX YEARS, 2015 TO 2020, SHOWING THE RESIDENTIAL SECTOR M-CUBEDS LIFETIME SAVINGS; TO PROVIDE THE GREENHOUSE GAS EMISSIONS ESTIMATE BASING ON THE USUAL CONVERSION FACTOR, ACCEPTED CONVERSION FACTOR.

Response:

Please see Table 1 below for Union's 2015-2020 DSM lifetime natural gas savings (billion m³) estimates for its entire DSM portfolio and the related estimated lifetime greenhouse gas emissions (million tonnes CO₂e). The 2015 figures use actual "audit-adjusted" 2015 DSM program year results.¹ Forecast figures are used for 2016 to 2020 DSM program years.² The forecasts represent Union's total forecasted 100% DSM targets.

Table 1

Year	2015	2016	2017	2018	2019	2020	TOTAL
DSM lifetime natural gas savings (billion m ³)	1.8	2.4	2.6	2.8	2.9	2.9	15.3
Estimated lifetime greenhouse gas emissions (million tonnes CO ₂ e) ³	3.3	4.5	4.8	5.3	5.4	5.4	28.8

Please see Table 2 below for Union's 2015-2020 DSM lifetime natural gas savings (million m³) estimates for its residential DSM programs and offerings (residential and low-income single-family) and the related estimated lifetime greenhouse gas emissions (million tonnes CO₂e). The 2015 figure uses actual "audit-adjusted" 2015 DSM program year results.⁴ Forecast figures are used for 2016 to 2020 DSM program years.⁵ For 2016 to 2020, the forecasts represent Union's

¹ EB-2017-0323

² 2016 and 2017 DSM program year audits have not concluded.

³ ON.400 conversion factor of 0.001875 tonnes CO₂e/m³

⁴ EB-2017-0323

⁵ 2016 and 2017 DSM program year audits have not concluded.

total forecasted 100% DSM targets provided in Table 1, adjusted for the percentage of savings expected to be driven by residential DSM programs and offerings.

Table 2

Year	2015	2016	2017	2018	2019	2020	TOTAL
DSM lifetime natural gas savings (million m ³)	108	149	160	174	178	180	950
Estimated lifetime greenhouse gas emissions (million tonnes CO ₂ e) ⁶	0.2	0.3	0.3	0.3	0.3	0.3	1.8

⁶ ON.400 conversion factor of 0.001875 tonnes CO₂e/m³

UNION GAS LIMITED

Undertaking of Ms. Flaman
To Ms. Grice

Reference: Tr.2, p. 15

TO UPDATE THE GREEN INVESTMENT FUND FORECAST AT EXHIBIT 2,
SCHEDULE 1.

Response:

The forecasted natural gas savings from Union's customers driven by the initial GIF funding is 7,035,000 m³ for 2017 and 2018. Subsequent to the development of this forecast, Union refined the estimated savings to be 8,820,000 m³.¹

In 2018, \$15 million of additional GIF funding was added to Union's GIF program, resulting in an additional 4,000 homes added to the forecasted participation for the 2018 year. This results in the following savings calculation:

- 14,500 participants × 84% estimated participation from Union's customers = 12,180 forecasted Union customer participants (homes) driven by funding from the GIF in 2017 and 2018
- 12,180 participants × 1,000 m³ = 12,180,000 m³ saved by Union customer participants (homes) driven by funding from the GIF in 2017 and 2018
- 12,180,000 m³ × 0.001875 tonnes CO₂e/m³ = 22,837.50 tonnes CO₂e

Union did not update the GIF forecast found in its 2018 Cap-and-Trade Compliance Plan as the impacts from the change were not material on Union's overall forecast.

¹ EB-2017-0255, Response at Exhibit B.LPMA.25

UNION GAS LIMITED

Undertaking of Mr. Ginis
To Mr. Elson

Reference: Tr.2, p. 50

TO UPDATE THE TABLE AT EXHIBIT JT1.2, ATTACHMENT A, USING THE SAME INFLATION FACTOR THAT ENBRIDGE HAS POST-2028.

Response:

Please see Attachment A.

The attachment has been updated to include the following:

- For the carbon cost post-2028, the same escalation factor was used as in EGD's response in the Attachment at EB-2017-0224, Exhibit JT2.1 (5% Carbon + 1.8% CPI = 6.8%).
- Union has adjusted its original application of information from the response at Exhibit B.ED.24 to reflect inflation.
- The natural gas costs for residential and commercial/industrial are weighted 50% baseload and 50% weather-sensitive, based on draft 2017 DSM avoided costs and are subject to change.
- A discount rate of 4% per year has been applied for all benefit calculations to determine a net present value.

	2018 Total DSM Forecasts																									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total Lifetime Savings
Forecast annual gas savings (m3)	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	163,085,869	79,536,539	79,536,539	79,536,539	79,536,539	79,536,539	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	2,413,898,486
Forecast annual GHG reduction (t co2e)	305,786	305,786	305,786	305,786	305,786	305,786	305,786	305,786	305,786	305,786	305,786	305,786	149,131	149,131	149,131	149,131	149,131	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	4,526,060,060
Value of natural gas reduction (Not discounted)	\$ 21,211,638	\$ 21,143,360	\$ 21,522,184	\$ 20,524,743	\$ 21,731,576	\$ 21,282,891	\$ 21,486,949	\$ 22,661,168	\$ 24,177,866	\$ 23,683,609	\$ 23,385,386	\$ 23,835,386	\$ 12,853,105	\$ 13,314,417	\$ 13,910,941	\$ 15,329,165	\$ 16,425,768	\$ 1,255,469	\$ 1,268,046	\$ 1,280,623	\$ 1,293,200	\$ 1,305,777	\$ 1,319,094	\$ 1,332,410	\$ 1,345,727	\$ 345,161,672
Value of natural gas reduction (Discounted @ 4%/year)	\$ 21,211,638	\$ 20,589,769	\$ 19,926,205	\$ 18,246,422	\$ 18,576,548	\$ 17,492,985	\$ 18,981,448	\$ 17,120,625	\$ 17,666,530	\$ 16,643,302	\$ 16,362,583	\$ 15,483,012	\$ 8,028,011	\$ 9,396,294	\$ 8,033,222	\$ 7,512,265	\$ 7,168,127	\$ 644,524	\$ 625,943	\$ 607,838	\$ 590,200	\$ 573,019	\$ 556,599	\$ 540,594	\$ 524,997	\$ 259,762,497
Value of GHG reduction (Not discounted)	\$ 5,198,362	\$ 5,504,148	\$ 5,504,148	\$ 5,089,934	\$ 6,115,720	\$ 6,421,506	\$ 9,479,366	\$ 11,008,296	\$ 13,148,798	\$ 15,289,300	\$ 17,429,802	\$ 18,615,029	\$ 9,695,837	\$ 12,355,154	\$ 11,059,305	\$ 11,811,338	\$ 12,614,508	\$ 1,253,139	\$ 1,338,352	\$ 1,429,360	\$ 1,526,557	\$ 1,630,363	\$ 1,741,227	\$ 1,859,631	\$ 1,986,086	\$ 187,825,267
Value of GHG reduction (Discounted @ 4%/year)	\$ 5,198,362	\$ 5,292,450	\$ 5,088,894	\$ 5,165,010	\$ 5,227,743	\$ 6,278,010	\$ 9,479,681	\$ 8,365,400	\$ 9,607,698	\$ 10,742,060	\$ 11,774,950	\$ 12,091,968	\$ 6,055,991	\$ 6,219,337	\$ 6,386,473	\$ 6,558,416	\$ 6,734,989	\$ 643,328	\$ 660,648	\$ 678,435	\$ 696,701	\$ 715,458	\$ 734,720	\$ 754,501	\$ 774,815	\$ 128,937,265
Value of GHG reduction from non-capped customers (Not discounted)	\$ 2,396,217	\$ 2,537,171	\$ 2,537,171	\$ 2,678,125	\$ 2,819,079	\$ 2,960,033	\$ 4,369,573	\$ 5,074,342	\$ 6,061,020	\$ 7,047,698	\$ 8,034,375	\$ 8,580,713	\$ 6,617,948	\$ 7,067,969	\$ 7,548,590	\$ 8,061,895	\$ 8,610,103	\$ 1,253,139	\$ 1,338,352	\$ 1,429,360	\$ 1,526,557	\$ 1,630,363	\$ 1,741,227	\$ 1,859,631	\$ 1,986,086	\$ 105,766,737
Value of GHG reduction from non-capped customers (Discounted @ 4%/year)	\$ 2,396,217	\$ 2,439,588	\$ 2,345,757	\$ 2,380,843	\$ 2,409,761	\$ 2,432,931	\$ 3,453,337	\$ 3,856,083	\$ 4,428,728	\$ 4,951,619	\$ 5,427,736	\$ 5,573,868	\$ 4,133,551	\$ 4,244,839	\$ 4,359,123	\$ 4,476,484	\$ 4,597,005	\$ 643,328	\$ 660,648	\$ 678,435	\$ 696,701	\$ 715,458	\$ 734,720	\$ 754,501	\$ 774,815	\$ 69,566,075
Value of GHG reduction from non-capped customers + Value of natural gas reduction (Not discounted)	\$ 23,607,855	\$ 23,950,531	\$ 24,089,355	\$ 23,202,868	\$ 24,550,657	\$ 24,242,924	\$ 25,856,522	\$ 27,735,510	\$ 30,238,886	\$ 30,736,306	\$ 32,195,933	\$ 32,416,099	\$ 19,471,053	\$ 20,382,385	\$ 21,459,531	\$ 21,591,060	\$ 22,035,871	\$ 2,508,608	\$ 2,606,399	\$ 2,709,984	\$ 2,819,757	\$ 2,936,140	\$ 3,060,321	\$ 3,192,041	\$ 3,331,813	\$ 450,928,410
Value of GHG reduction from non-capped customers + Value of natural gas reduction (Discounted @ 4%/year)	\$ 23,607,855	\$ 23,029,357	\$ 22,121,963	\$ 20,627,265	\$ 20,986,005	\$ 19,925,917	\$ 20,434,785	\$ 21,076,708	\$ 22,095,258	\$ 21,594,921	\$ 21,750,419	\$ 21,056,880	\$ 12,161,562	\$ 12,241,132	\$ 12,392,344	\$ 11,988,749	\$ 11,765,132	\$ 1,287,852	\$ 1,286,592	\$ 1,286,273	\$ 1,286,900	\$ 1,288,477	\$ 1,291,319	\$ 1,295,095	\$ 1,299,812	\$ 329,323,530
Total Forecast DSM Costs	\$ 63,272,305	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 63,272,305

UNION GAS LIMITED

Undertaking of Mr. Ginis

To Mr. Elson

Reference: Tr.2, p. 54

TO PROVIDE AN EQUIVALENT TO ENBRIDGE'S RESPONSE TO JT2.4 ON A BEST EFFORTS BASIS FOR THE YEAR 2015, WITH APPROPRIATE CAVEATS

Response:

The below figures are based on Union's actual "audit-adjusted" 2015 DSM program year results for its entire DSM portfolio,¹ and are subject to change. For figures that include the cost of carbon, it should be noted that for simplicity, the cost of carbon was applied to all DSM results including those that may not incur the cost of carbon (i.e. capped customers).

TRC-Plus Net Benefits = \$264 Million

TRC-Plus + Cost of Carbon (OEB LTCPF Mid-Range) Net Benefits = \$336 Million

TRC (no plus) + Cost of Carbon (OEB LTCPF Mid-Range) Net Benefits = \$280 Million

PAC Net Benefits = \$261 Million

PAC + Cost of Carbon (OEB LTCPF Mid-Range) Net Benefits = \$324 Million

¹ EB-2017-0323

UNION GAS LIMITED

Undertaking of Mr. Ginis
To Mr. Elson

Reference: Tr.2, p. 78

TO PROVIDE A TABLE EQUIVALENT TO ENBRIDGE'S UNDERTAKING JT2.5.

Response:

Please see the table equivalent to Enbridge's JT2.5 below.

Table 1

	Union Gas	OEB CPS Scenarios		
	2018 DSM Forecast	Constrained	Semi-constrained	Unconstrained
CPS – Aggregate Annual Savings, Ontario 2015-2020 (million m³)¹	N/A	1,187	1,338	1,869
CPS – Average Annual Savings, Ontario 2015-2020 (million m³/year)²	N/A	198	223	312
CPS – Annual Program Spending, Ontario (\$ million)³	N/A	111	149	550
CPS – Union Gas % of Total⁴	N/A	58%	58%	58%
CPS – Union Gas Annual Gross Savings (million m³/year)	N/A	114	129	181
CPS –Net to Gross (NTG) Adjustment Factor⁵	N/A	0.70	0.70	0.70
CPS vs Union Gas – Annual Net Savings (million m³/year)	163 ⁶	80	90	127
CPS vs Union Gas – Annual Program Spending (\$ million/year)	63 ⁷	64	86	319

¹ CPS Report, Exhibit ES 3, Page iv

² Aggregate annual savings divided by 6 years (2015-2020)

³ CPS Report, Exhibit ES 4, Page v

⁴ Weighted average, based on franchise-area adjustment using savings identified in CPS Constrained Scenario for 2018-2020 (38% for Residential, 42% for Commercial, 66% for non-Large Volume Industrial, and 100% for Large Volume Industrial)

⁵ Weighted average, based on DSM NTG adjustment factors using savings identified in CPS Constrained Scenario for 2018-2020 (0.95 for Residential, 0.90 for Commercial, 0.46 for non-Large Volume Industrial, and 0.46 for Large Volume Industrial)

⁶ Exhibit J2.2, Attachment A

⁷ Exhibit J2.2, Attachment A

UNION GAS LIMITED

Undertaking of Mr. Ginis
To Mr. Elson

Reference: Tr.2, p. 82

TO PRODUCE TABLES EQUIVALENT TO THOSE APPEARING AT PAGE 48 OF THE ENVIRONMENTAL DEFENCE COMPENDIUM.

Response:

Please see the tables below.

Table 1

	Union Gas	OEB CPS Scenarios		
	2018 DSM Forecast	Constrained	Semi-constrained	Unconstrained
CPS – Union Gas Annual Gross Savings (million m³/year)	N/A	114	129	181
CPS – Net to Gross (NTG) Adjustment Factor¹	N/A	0.70	0.70	0.70
CPS vs Union Gas – Annual Net Savings (million m³/year)	163 ²	80	90	127
CPS vs Union Gas – Annual Program Spending (\$ million/year)	63 ³	64	86	319
Spending per m³ of Gas Savings (\$/m³)	\$0.39	\$0.80	\$0.96	\$2.51
Increase/Decrease in Savings vs. 2018 DSM Forecast	N/A	-51%	-45%	-22%

¹ Weighted average, based on DSM NTG adjustment factors using savings identified in CPS Constrained Scenario for 2018-2020 (0.95 for Residential, 0.90 for Commercial, 0.46 for non-Large Volume Industrial, and 0.46 for Large Volume Industrial)

² Exhibit J2.2, Attachment A

³ Exhibit J2.2, Attachment A

Assume no NTG Adjustments Needed to Potential Study Figures

Table 2

	Union Gas	OEB CPS Scenarios		
	2018 DSM Forecast	Constrained	Semi-constrained	Unconstrained
CPS vs Union Gas – Annual Net Savings (million m³/year)	163 ⁴	114	129	181
CPS vs Union Gas – Annual Program Spending (\$ million/year)	63 ⁵	64	86	319
Spending per m³ of Gas Savings (\$/m³)	\$0.39	\$0.59	\$0.67	\$1.76
Increase/Decrease in Savings vs. 2018 DSM Forecast	N/A	-30%	-21%	+11%

⁴ Exhibit J2.2, Attachment A

⁵ Exhibit J2.2, Attachment A

UNION GAS LIMITED

Undertaking of Ms. Newbury
To Mr. Elson

Reference: Tr.2, p. 91

TO FILE THE BOARD'S DIRECTION TO UNION DIRECTING THAT THE FILING BE POSTPONED; TO PRODUCE ALL COMMUNICATIONS TO AND FROM THE BOARD RELATING TO THIS TOPIC.

Response:

Please see below for a summary of the correspondence related to the filing date of Union's 2018 Compliance Plan.

- July 27, 2017: Letter from Board to gas utilities
 - Stated the gas utilities may file their 2018 Compliance Plans three weeks following the issuance of the OEB's Decision and Order on the 2017 Compliance Plans in order to allow the gas utilities to consider the OEB's findings on the 2017 Compliance Plans as part of their respective 2018 Compliance Plans.
 - Stated that in the event a gas utility requires additional time prior to filing its 2018 Compliance Plan, it may request a further extension.Link: <http://www.rds.oeb.ca/HPECMWebDrawer/Record/580243/File/document>
- September 21, 2017: 2017 Compliance Plan Decision and Order issued
Link: <http://www.rds.oeb.ca/HPECMWebDrawer/Record/584370/File/document>
- October 3, 2017: Letter from Union to Board
 - Requested a filing date extension to November 9, 2017 in order to consider and reflect the OEB's findings on its 2017 Compliance Plan as well as changes within the Ontario Cap-and-Trade landscape that have occurred since August 2017 appropriately in its 2018 Compliance Plan.Link: <http://www.rds.oeb.ca/HPECMWebDrawer/Record/585932/File/document>
- October 11, 2017: Letter from Board to Union
 - Granted Union's extension to file its 2018 Compliance Plan by November 9, 2017.Link: <http://www.rds.oeb.ca/HPECMWebDrawer/Record/586552/File/document>
- November 9, 2017: 2018 Compliance Plan filed with the Board

UNION GAS LIMITED

Undertaking of Mr. Ginis
To Mr. Murray

Reference: Tr.2, p. 170

ON A BEST EFFORTS BASIS, TO PROVIDE IN RESPECT OF 2016 AND 2017 THE TOTAL SAVINGS AMOUNTS ACHIEVED THROUGH DSM PROGRAMS AS A PERCENTAGE BY END USE SEGMENT ON AN UNAUDITED BASIS FOR COMMERCIAL / INDUSTRIAL, AND THEN TO APPLY THOSE RESULTS TO THE 2018 DSM FORECAST

Response:

The table below provides Union's 2018-2020 DSM natural gas savings forecasts for its commercial/industrial programs and offerings, estimated to match the commercial and industrial end-use segments provided in Table 1 of the MACC at p. 11, based on the percentage of Union's 2016 DSM results by those same end-use segments.¹ 2016 results are unaudited and are subject to change.

These figures are estimates only and match the MACC's end-uses on a best-efforts basis. Please note that while the 2016 end-use percentage breakdown can be used as a proxy for 2018-2020 results, changes may occur for actual 2018-2020 results.

Table 1

MACC End-Use Category	End-use percentage breakdown from Union's 2016 commercial / industrial pre-audited DSM results	Union's estimated 2018-2020 DSM natural gas savings forecast, using end-use percentage breakdown from Union's 2016 pre-audited DSM results (million m3)
Industrial Gas Turbine	0%	0
Industrial Steam Turbine	0%	0
Industrial HVAC	24%	47
Industrial Direct Heating	15%	28
Industrial Steam Hot Water System	40%	77
Commercial Food Service	<1%	<1
Commercial Systems	4%	8
Commercial Service Water Heating	2%	3
Commercial Space Heating	15%	29
Commercial Other	0%	0
TOTAL	100%	193

¹ 2017 DSM program year data has not yet been finalized, therefore 2016 information has been used.

UNION GAS LIMITED

Undertaking of Mr. Trofim - Breuer
To Mr. Murray

Reference: Tr.2, p. 178

TO PROVIDE FURTHER INFORMATION, IF AVAILABLE, REGARDING WHY THE PROJECTS BEING PROPOSED FOR THE LCIF AT THIS STAGE WERE SELECTED.

Response:

As noted in the response at Exhibit B.SEC.8, the subsequent submissions identified below and in Union's testimony during the oral hearing, Union has no additional internal documents or information regarding the Abatement Construct or LCIF. It is important to consider that Union's Initiatives Funnel was conceived and implemented less than a year ago.

Union indicated that it has identified the proposed initiatives for evaluation in Stages 1 and 2 of the Initiatives Funnel using the selection and project management approach described at Exhibit B.Staff 21 a). The selection of the initiatives included in evidence considers the Guiding Principles of the Cap-and-Trade Framework and was based on pre-screening against criteria including technical performance, GHG emissions reduction potential, energy efficiency, and applicable market segments. These criteria support the Cap-and-Trade Framework and the Abatement Construct guiding principles and are enforced through the Initiatives Funnel and the LCIF. For instance, both the Initiatives Funnel and the LCIF enable the identification and advancement of new technologies over the long-term in alignment with government targets. This long-term perspective provides stability and flexibility in developing diverse initiatives, and predictability for rate payers in terms of establishing a consistent maximum cost of investment in new technologies.

Undertakings JT1.17 and JT1.31 provide insight on project descriptions, work plans, project budgets, deliverables, year-to-date spend and schedules that Union is currently using. Furthermore, consistent with the principle of continuous improvement, Union has indicated that it will continue to improve its selection approach, its project management approach and reporting available in relation of LCIF initiatives going forward as appropriate.