

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	Appe	earances	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	the argument this morning that
			Mr. Elson is making	Mr. Elson is making
1	8	14	We received Mr. Elson's	We received Mr. Elson's
			compendium and noticed	compendium and notice
1	11	25	about JT1.2 also.	about JT1.12 also.
1	13	16	Board as to why it was the	Board as to why it meets the
			practice direction.	practice direction.
1	15	17,28	Harris Ginis	Haris Ginis
1	18	11	important to understand the	important to understand the
			guiding principles with which	guiding principles which
1	1 18 23		rate predictable, cost recovery,	rate predictability , cost recovery,
			transparency that balances	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	available for Ontarians .
			wins.	
1	21	22	related to oxygen	related to auction
1	29	6	MS. FLAMAN: [No audible	MS. FLAMAN: Correct
			response]	
1	31	20	and if the LCAF is approved	and if the LCIF is approved
1	41	16	implemented with a minimum	implemented with a minimum
			invasion.	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	in Union's treating cap-and-trade
			resources is incremental.	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	balance of how many
			are out there.	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-	examples of ground-source heat
			bumps	pumps
1	128	13	It is pretty commercial	It is pre commercial
1	130	1	would be the insulation	would be the installation
			requirements	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	where we compared the MACC
			opportunity	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	forecast is expected to be
			material.	immaterial.
2	17	12	There was no plans to use GreenON	There were no plans to use
			dollars	GreenON dollars
2	17	17	Are you asking through your DSM	Are you asking through our DSM
			programs?	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	we organized a design
			share ed (ph)	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	to auctions, the auction floor
			increasing annually.	prices increase annually.

Volume	Page	Line(s)	As Stated	Correction
2	68	4	Again in Canada, we also have	Again in Canada, we also have FX
			effects impacts	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	energy conservation. We have
			also done a number	also done a number
2	141	12,13	CNI programs	C&I programs
2	152	2	undertaking 4, the attribution	undertaking for the attribution
			agreements.	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	TO UPDATE THE BUDGET TO REFLECT THE
	INCLUDE THE 11.25	CHANGE FROM 12.5 FTES TO 11.25 FTES
J1.2	TO FURTHER EXPAND AS TO	TO FURTHER EXPAND AS TO
	THE APPROVALS BEING SOUGHT IN THIS	THE APPROVALS BEING SOUGHT IN THIS
	PROCEEDING AND THE APPROVALS THAT	PROCEEDING AND THE APPROVALS THAT
	WILL BE SOUGHT IN A DISPOSITION	WILL BE SOUGHT IN A DISPOSITION
	PROCEEDING.	PROCEEDING AND WHAT TESTS WOULD
		BE APPLIED.
J1.3	FOR EACH OF THE THREE	FOR EACH OF THE THREE
	RELATED GAS USES SHOWN IN THE	RELATED GAS USES SHOWN IN THE
	RESPONSE, WHICH ARE UNACCOUNTED	RESPONSE TO JT1.21, WHICH ARE
	FOR GAS, COMPRESS FUEL AND	UNACCOUNTED FOR GAS, COMPRESSOR
	BLOWDOWNS AND BUILDINGS AND LINE	FUEL AND BLOWDOWNS AND BUILDINGS
	HEATERS, TO INDICATE IF THERE IS A	AND LINE HEATERS, TO INDICATE IF
	DEFERRAL OR VARIANCE ACCOUNT	THERE IS A DEFERRAL OR VARIANCE
	ASSOCIATED WITH THE COST OF GAS; TO	ACCOUNT ASSOCIATED WITH THE COST
	PROVIDE THE ESTIMATED ANNUAL	OF GAS; TO PROVIDE THE ESTIMATED
	VOLUME FOR EACH OF THE THREE GAS	ANNUAL VOLUME FOR EACH OF THE
	USES SHOWN THAT TOTAL THE 3.5	THREE GAS USES SHOWN THAT TOTAL
	PETAJOULES FOR ITS FACILITY-RELATED	THE 3.5 PETAJOULES FOR ITS FACILITY-
	FUEL REQUIREMENTS.	RELATED FUEL REQUIREMENTS.
J2.2	TO UPDATE THE TABLE USING THE SAME	TO UPDATE THE TABLE AT EXHIBIT JT1.2,
	INFLATION FACTOR THAT THEY HAVE	ATTACHMENT A, USING THE SAME
	POST-2028.	INFLATION FACTOR THAT ENBRIDGE HAS
		POST-2028.
J2.3	TO PROVIDE AN EQUIVALENT	TO PROVIDE AN EQUIVALENT
	TO ENBRIDGE'S RESPONSE TO JT2.4 ON A	TO ENBRIDGE'S RESPONSE TO JT2.4 ON A
	BEST EFFORTS BASIS AND WITH	BEST EFFORTS BASIS FOR THE YEAR 2015,
	APPROPRIATE CAVEATS AND,	WITH APPROPRIATE CAVEATS
	IF NECESSARY, USING 2015	
J2.7	ON A BEST EFFORTS BASIS, TO PROVIDE IN	ON A BEST EFFORTS BASIS, TO PROVIDE IN
	RESPECT OF 2016 AND 2017 THE TOTAL	RESPECT OF 2016 AND 2017 THE TOTAL
	SAVINGS AMOUNTS ACHIEVED THROUGH	SAVINGS AMOUNTS ACHIEVED THROUGH
	DSM PROGRAMS AS A PERCENTAGE BY	DSM PROGRAMS AS A PERCENTAGE BY
	END USE SEGMENT ON AN UNAUDITED	END USE SEGMENT ON AN UNAUDITED
	BASIS FOR COMMERCIAL / INDUSTRIAL,	BASIS FOR COMMERCIAL / INDUSTRIAL,
	AND THEN TO APPLY THOSE RESULTS TO	AND THEN TO APPLY THOSE RESULTS TO
	THE 2018 MACC	THE 2018 DSM FORECAST
J2.8B	TO PROVIDE THE 2016/17 TOTAL SAVINGS	N/A - This exchange was confirming the contents
	AMOUNT THROUGH DSM PROGRAMS.	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: <u>\$1,040,000</u> Total: \$2,328,000

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

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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 <u>To Ms. Girvan</u>

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 <u>To Ms. Girvan</u>

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.

Filed: 2018-04-28 EB-2017-0255 Exhibit J1.5 Page 1 of 2

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. Forecast figures are used for 2016 to 2020 DSM program years. The forecasts represent Union's total forecasted 100% DSM targets.

Table 1

Year	2015	2016	2017	2018	2019	2020	TOTAL
DSM lifetime natural gas	1.8	2.4	2.6	2.8	2.9	2.9	15.3
savings							
(billion m ³)							
Estimated lifetime	3.3	4.5	4.8	5.3	5.4	5.4	28.8
greenhouse gas emissions							
$(\text{million tonnes CO}_2\text{e})^3$							

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. Forecast figures are used for 2016 to 2020 DSM program years. 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 CO₂/m³

⁴ EB-2017-0323

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

Filed: 2018-04-28 EB-2017-0255 Exhibit J1.5 Page 2 of 2

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	108	149	160	174	178	180	950
savings							
(million m ³)							
Estimated lifetime	0.2	0.3	0.3	0.3	0.3	0.3	1.8
greenhouse gas emissions							
(million tonnes CO ₂ e) ⁶							

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 $^{^6}$ ON.400 conversion factor of 0.001875 tonnes $\text{CO}_2\text{e/m}^3$

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 $\times 1,000$ m³ = 12,180,000 m³ saved by Union customer participants (homes) driven by funding from the GIF in 2017 and 2018
- $12,180,000 \text{ m}^3 \times 0.001875 \text{ tonnes } \text{CO}_2\text{e/m}^3 = 22,837.50 \text{ tonnes } \text{CO}_2\text{e}$

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.

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

UNION GAS LIMITED

Undertaking of Mr. Ginis
<u>To Mr. Elson</u>

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 DSM Reside	ntial Sector F	orecasts														
		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 Sav	vings
Forecast annual gas savings (m3)		7,398,170	7,398,170	7,398,1	170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170	7,398,170		184,95
Forecast avoided natural gas cost (\$/m3)	\$	0.1378 \$	0.1375	\$ 0.13	383 \$	0.1320 \$	0.1394	\$ 0.1367	\$ 0.1379	\$ 0.1451	\$ 0.1544	\$ 0.1514	\$ 0.1543 \$	0.1523	\$ 0.1616	0.1674	\$ 0.1749 \$	0.1701	\$ 0.1688	\$ 0.1697 \$	0.1714	\$ 0.1731	\$ 0.1748	\$ 0.1765	\$ 0.1783	\$ 0.1801	\$ 0.1819	Not Applicable	
Forecast annual GHG reduction (t co2e)		13,872	13,872	13,8	372	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872	13,872		346,
Forecast carbon price (Mid-Range LTCPF)	\$	17 \$	18	\$	18 \$	19 \$	20	\$ 21	\$ 31	\$ 36	\$ 43	\$ 50	\$ 57 \$	61	\$ 65	69	\$ 74 \$	79	\$ 85	\$ 90 \$	96	\$ 103	\$ 110	\$ 118	\$ 126	\$ 134	\$ 143	Not Applicable	
Value of natural gas reduction (Not discounted)	\$	1,019,468 \$	1,017,248	\$ 1,023,1	167 \$	976,558 \$	1,031,305	\$ 1,011,330	\$ 1,020,208	\$ 1,073,474	\$ 1,142,277	\$ 1,120,083	\$ 1,141,538 \$	1,126,741	\$ 1,195,544	1,238,454	\$ 1,293,940 \$	1,258,429	\$ 1,248,811	\$ 1,255,469 \$	1,268,046	\$ 1,280,623	\$ 1,293,200	\$ 1,305,777	\$ 1,319,094	\$ 1,332,410	\$ 1,345,727	\$	29,338,
Value of natural gas reduction (Discounted @ 4%/year	\$	1,019,468 \$	978,123	\$ 945,9	975 \$	868,157 \$	881,564	\$ 831,239	\$ 806,285	\$ 815,752	\$ 834,651	\$ 786,955	\$ 771,182 \$	731,910	\$ 746,733	743,783	\$ 747,218 \$	698,761	\$ 666,750	\$ 644,524 \$	625,943	\$ 607,838	\$ 590,200	\$ 573,019	\$ 556,599	\$ 540,594	\$ 524,997	\$	18,538,
Value of GHG reduction (Not discounted)	\$	235,817 \$	249,688	\$ 249,6	588 \$	263,560 \$	277,431	\$ 291,303	\$ 430,019	\$ 499,376	\$ 596,477	\$ 693,578	\$ 790,679 \$	844,446	\$ 901,868	963,195	\$ 1,028,692 \$	1,098,643	\$ 1,173,351	\$ 1,253,139 \$	1,338,352	\$ 1,429,360	\$ 1,526,557	\$ 1,630,363	\$ 1,741,227	\$ 1,859,631	\$ 1,986,086	\$	23,352,
Value of GHG reduction (Discounted @ 4%/year)	\$	235,817 \$	240,085	\$ 230,8	351 \$	234,304 \$	237,150	\$ 239,430	\$ 339,850	\$ 379,485	\$ 435,840	\$ 487,299	\$ 534,155 \$	548,536	\$ 563,304	578,470	\$ 594,044 \$	610,038	\$ 626,462	\$ 643,328 \$	660,648	\$ 678,435	\$ 696,701	\$ 715,458	\$ 734,720	\$ 754,501	\$ 774,815	\$	12,773,
Assumption of volumes from non-capped customers		100%	100%	10	00%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	Not Applicable	
Value of GHG reduction from non-capped customers (Not																													
discounted)	\$	235,817 \$	249,688	\$ 249,6	\$ 88	263,560 \$	277,431	\$ 291,303	\$ 430,019	\$ 499,376	\$ 596,477	\$ 693,578	\$ 790,679 \$	844,446	\$ 901,868	963,195	\$ 1,028,692 \$	1,098,643	\$ 1,173,351	\$ 1,253,139 \$	1,338,352	\$ 1,429,360	\$ 1,526,557	\$ 1,630,363	\$ 1,741,227	\$ 1,859,631	\$ 1,986,086	\$	23,352,
Value of GHG reduction from non-capped customers																													
(Discounted @ 4%/year)	\$	235,817 \$	240,085	\$ 230,8	351 \$	234,304 \$	237,150	\$ 239,430	\$ 339,850	\$ 379,485	\$ 435,840	\$ 487,299	\$ 534,155 \$	548,536	\$ 563,304	5 578,470	\$ 594,044 \$	610,038	\$ 626,462	\$ 643,328 \$	660,648	\$ 678,435	\$ 696,701	\$ 715,458	\$ 734,720	\$ 754,501	\$ 774,815	\$	12,773,
Value of GHG reduction from non-capped customers + Valu	e																												
of natural gas reduction (Not discounted)	\$	1,255,284 \$	1,266,937	\$ 1,272,8	355 \$	1,240,118 \$	1,308,736	\$ 1,302,633	\$ 1,450,226	\$ 1,572,851	\$ 1,738,755	\$ 1,813,661	\$ 1,932,217 \$	1,971,187	\$ 2,097,412	2,201,649	\$ 2,322,632 \$	2,357,072	\$ 2,422,162	\$ 2,508,608 \$	2,606,399	\$ 2,709,984	\$ 2,819,757	\$ 2,936,140	\$ 3,060,321	\$ 3,192,041	\$ 3,331,813	\$	52,691,
Value of GHG reduction from non-capped customers + Valu	e																												
of natural gas reduction (Discounted @ 4%/year)	Ś	1,255,284 \$	1,218,208	\$ 1,176,8	326 \$	1.102.461 \$	1.118.713	\$ 1.070.669	\$ 1.146.135	\$ 1.195.237	\$ 1.270.491	\$ 1.274.254	\$ 1,305,337 \$	1.280.445	\$ 1.310.037	1 322 253	\$ 1.341.262 \$	1.308.798	5 1.293.212	\$ 1.287.852 \$	1.286.592	\$ 1.286.273	\$ 1.286.900	\$ 1.288.477	\$ 1,291,319	\$ 1.295.095	\$ 1,299,812	Ś	31,311,

												2018	DSM Commerc	ial/Industrial S	ector Forecasts													
		2018	2019	2020	20	021	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)		72,138,369	72,138,369	72,138,3	69 72,	,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369	72,138,369									1,226,352,2
Forecast avoided natural gas cost (\$/m3)	\$	0.1378 \$	0.1375	\$ 0.13	83 \$	0.1320	\$ 0.1394	\$ 0.1367	\$ 0.1379	\$ 0.1451	\$ 0.1544	\$ 0.1514	\$ 0.1543	\$ 0.1523	\$ 0.1616	\$ 0.1674	\$ 0.1749	\$ 0.1701	\$ 0.1688									Not Applicable
Forecast annual GHG reduction (t co2e)		135,259	135,259	135,2	59	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259	135,259									2,299,4
Forecast carbon price (Mid-Range LTCPF)	\$	17 \$	18	\$	18 \$	19	\$ 20	\$ 21	\$ 31	\$ 36	\$ 43	\$ 50	\$ 57	\$ 61	\$ 65	\$ 69	\$ 74	\$ 79	\$ 85									Not Applicable
Value of natural gas reduction (Not discounted)	\$	9,940,667 \$	9,919,026	\$ 9,976,7	36 \$ 9,	,522,265	\$ 10,056,089	\$ 9,861,315	\$ 9,947,881	\$ 10,467,277	\$ 11,138,164	\$ 10,921,749	\$ 11,130,950	\$ 10,986,674	\$ 11,657,560	\$ 12,075,963	\$ 12,617,001	\$ 12,270,737	\$ 12,176,957									\$ 184,667,0
Value of natural gas reduction (Discounted @ 4%/year)	\$	9,940,667 \$	9,537,525	\$ 9,224,0	54 \$ 8,	3,465,259	\$ 8,595,987	\$ 8,105,282	\$ 7,861,955	\$ 7,954,271	\$ 8,138,547	\$ 7,673,476	\$ 7,519,671	\$ 7,136,734	\$ 7,281,278	\$ 7,252,510	\$ 7,286,004	\$ 6,813,504	\$ 6,501,377									\$ 135,288,1
Value of GHG reduction (Not discounted)	\$	2,299,411 \$	2,434,670	\$ 2,434,6	70 \$ 2,	2,569,929	\$ 2,705,189	\$ 2,840,448	\$ 4,193,043	\$ 4,869,340	\$ 5,816,156	\$ 6,762,972	\$ 7,709,788	\$ 8,234,054	\$ 8,793,969	\$ 9,391,959	\$ 10,030,613	\$ 10,712,694	\$ 11,441,157									\$ 103,240,0
Value of GHG reduction (Discounted @ 4%/year)	\$	2,299,411 \$	2,341,029	\$ 2,250,9	89 \$ 2,	,284,658	\$ 2,312,407	\$ 2,334,641	\$ 3,313,823	\$ 3,700,298	\$ 4,249,808	\$ 4,751,574	\$ 5,208,457	\$ 5,348,684	\$ 5,492,687	\$ 5,640,567	\$ 5,792,429	\$ 5,948,379	\$ 6,108,528									\$ 69,378,3
Assumption of volumes from non-capped customers		65%	65%	6	5%	65%	65%	65%	65%	65%	65%	65%	659	659	65%	659	65%	65%	65%									Not Applicable
Value of GHG reduction from non-capped customers (Not																												
discounted)	\$	1,494,617 \$	1,582,535	\$ 1,582,5	35 \$ 1,	,670,454	\$ 1,758,373	\$ 1,846,291	\$ 2,725,478	\$ 3,165,071	\$ 3,780,501	\$ 4,395,932	\$ 5,011,362	\$ 5,352,135	\$ 5,716,080	\$ 6,104,774	\$ 6,519,898	\$ 6,963,251	\$ 7,436,752									\$ 67,106,0
Value of GHG reduction from non-capped customers																												
(Discounted @ 4%/year)	\$	1,494,617 \$	1,521,669	\$ 1,463,1	43 \$ 1,	,485,028	\$ 1,503,064	\$ 1,517,517	\$ 2,153,985	\$ 2,405,194	\$ 2,762,375	\$ 3,088,523	\$ 3,385,497	\$ 3,476,645	\$ 3,570,247	\$ 3,666,369	\$ 3,765,079	\$ 3,866,446	\$ 3,970,543									\$ 45,095,9
Value of GHG reduction from non-capped customers + Valu	e																											
of natural gas reduction (Not discounted)	\$	11,435,284 \$	11,501,561	\$ 11,559,2	72 \$ 11,	,192,719	\$ 11,814,461	\$ 11,707,606	\$ 12,673,359	\$ 13,632,348	\$ 14,918,666	\$ 15,317,681	\$ 16,142,313	\$ 16,338,809	\$ 17,373,641	\$ 18,180,737	\$ 19,136,899	\$ 19,233,988	\$ 19,613,709									\$ 251,773,0
Value of GHG reduction from non-capped customers + Valu	e																											
of natural gas reduction (Discounted @ 4%/year)	\$	11,435,284 \$	11,059,193	\$ 10,687,1	97 \$ 9,	9,950,286	\$ 10,099,051	\$ 9,622,799	\$ 10,015,940	\$ 10,359,464	\$ 10,900,923	\$ 10,761,999	\$ 10,905,168	\$ 10,613,378	\$ 10,851,525	\$ 10,918,879	\$ 11,051,082	\$ 10,679,951	\$ 10,471,920									\$ 180,384,0

												2018 DSM La	ge Volume Sect	or 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)		83,549,330	83,549,330	83,549,330	83,549,330	83,549,330	83,549,330	83,549,330	83,549,330	83,549,330	83,549,33	0 83,549,3	83,549,33	0													1,002,591,963
Forecast avoided natural gas cost (\$/m3)	\$	0.1227 \$	0.1254 \$	0.1263	\$ 0.1200	\$ 0.1274	\$ 0.1246	\$ 0.1259	\$ 0.1331	1 \$ 0.1424	\$ 0.139	4 \$ 0.14	23 \$ 0.140	3													Not Applicable
Forecast annual GHG reduction (t co2e)		156,655	156,655	156,655	156,655	156,655	156,655	156,655	156,655	156,655	156,65	5 156,6	55 156,65	5													1,879,860
Forecast carbon price (Mid-Range LTCPF)	\$	17 \$	18 \$	18	\$ 19	\$ 20	\$ 21	\$ 31	\$ 36	5 \$ 43	\$ 50	0 \$	57 \$ 6	1.													Not Applicable
Value of natural gas reduction (Not discounted)	\$	10,251,503 \$	10,477,086 \$	10,552,280	\$ 10,025,920	\$ 10,644,185	\$ 10,410,247	\$ 10,518,861	\$ 11,120,416	\$ 11,897,425	\$ 11,646,77	7 \$ 11,889,0	70 \$ 11,721,97	1													\$ 131,155,73
Value of natural gas reduction (Discounted @ 4%/year	\$	10,251,503 \$	10,074,121 \$	9,756,176	\$ 8,913,000	\$ 9,098,694	\$ 8,556,464	\$ 8,313,208	\$ 8,450,602	\$ 8,693,332	\$ 8,182,87	1 \$ 8,031,8	29 \$ 7,614,36	9													\$ 105,936,17
Value of GHG reduction (Not discounted)	\$	2,663,135 \$	2,819,790 \$	2,819,790	\$ 2,976,445	\$ 3,133,100		\$ 4,856,305	\$ 5,639,580	\$ 6,736,165	\$ 7,832,75	0 \$ 8,929,3	35 \$ 9,536,52	9													\$ 61,232,67
Value of GHG reduction (Discounted @ 4%/year)	\$	2,663,135 \$	2,711,336 \$	2,607,054	\$ 2,646,049	\$ 2,678,187	\$ 2,703,939	\$ 3,838,008	\$ 4,285,617	7 \$ 4,922,050	\$ 5,503,18	6 \$ 6,032,3	39 \$ 6,194,74	8													\$ 46,785,64
Assumption of volumes from non-capped customers		25%	25%	25%	259	6 25%	25%	25%	255	% 259	25	% 2	5% 25	%													Not Applicable
Value of GHG reduction from non-capped customers (Not																											
discounted)	\$	665,784 \$	704,947 \$	704,947	\$ 744,111	\$ 783,275	\$ 822,439	\$ 1,214,076	\$ 1,409,895	5 \$ 1,684,041	\$ 1,958,18	7 \$ 2,232,3	34 \$ 2,384,13	2													\$ 15,308,16
Value of GHG reduction from non-capped customers																											
(Discounted @ 4%/year)	\$	665,784 \$	677,834 \$	651,764	\$ 661,512	\$ 669,547	\$ 675,985	\$ 959,502	\$ 1,071,404	\$ 1,230,512	\$ 1,375,79	7 \$ 1,508,0	35 \$ 1,548,68	7													\$ 11,696,41
Value of GHG reduction from non-capped customers + Valu	e																										
of natural gas reduction (Not discounted)	\$	10,917,287 \$	11,182,033 \$	11,257,228	\$ 10,770,03	\$ 11,427,460	\$ 11,232,685	\$ 11,732,937	\$ 12,530,311	\$ 13,581,466	\$ 13,604,96	4 \$ 14,121,4	3 \$ 14,106,10	3													\$ 146,463,90
Value of GHG reduction from non-capped customers + Valu	e																										
of natural gas reduction (Discounted @ 4%/year)	\$	10,917,287 \$	10,751,955 \$	10,407,940	\$ 9,574,518	\$ 9,768,240	\$ 9,232,449	\$ 9,272,710	\$ 9,522,006	\$ 9,923,844	\$ 9,558,66	7 \$ 9,539,9	14 \$ 9,163,05	6													\$ 117,632,58

													2018 Tota	al DSM Forecas	sts													
		2018	2019	21	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	9 163	3,085,869	163,085,869	9 163,085,869	163,085,86	9 163,085,869	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
Forecast annual GHG reduction (t co2e)		305,786	305,786	ő	305,786	305,78	305,786	305,78	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	4,526,0
Value of natural gas reduction (Not discounted)	\$	21,211,638	21,413,360) \$ 21	1,552,184 \$	20,524,74	\$ 21,731,578	\$ 21,282,89	1 \$ 21,486,949	\$ 22,661,168	\$ 24,177,866	\$ 23,688,609	\$ 24,161,558	\$ 23,835,386	\$ 12,853,105	\$ 13,314,417	\$ 13,910,941	\$ 13,529,165	\$ 13,425,768	\$ 1,255,469	1,268,046	\$ 1,280,623	\$ 1,293,200	\$ 1,305,777	\$ 1,319,094	\$ 1,332,410	\$ 1,345,727	\$ 345,161,0
Value of natural gas reduction (Discounted @ 4%/year)	\$	21,211,638	20,589,769	9 \$ 19	9,926,205 \$	18,246,42	2 \$ 18,576,244	\$ 17,492,98	5 \$ 16,981,448	\$ 17,220,625	\$ 17,666,530	\$ 16,643,302	\$ 16,322,683	\$ 15,483,012	\$ 8,028,011	\$ 7,996,294	\$ 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,
Value of GHG reduction (Not discounted)	\$	5,198,362	5,504,148	3 \$ 5	5,504,148 \$	5,809,93	4 \$ 6,115,720	\$ 6,421,50	6 \$ 9,479,366	\$ 11,008,296	\$ 13,148,798	\$ 15,289,300	\$ 17,429,802	\$ 18,615,029	\$ 9,695,837	\$ 10,355,154	\$ 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,
Value of GHG reduction (Discounted @ 4%/year)	\$	5,198,362	5,292,450) \$ 5	5,088,894 \$	5,165,010	\$ 5,227,743	\$ 5,278,01	0 \$ 7,491,681	\$ 8,365,400	\$ 9,607,698	\$ 10,742,060	\$ 11,774,950	\$ 12,091,968	\$ 6,055,991	\$ 6,219,037	\$ 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,
Value of GHG reduction from non-capped customers (Not																												
discounted)	\$	2,396,217	2,537,171	1 \$ 2	2,537,171 \$	2,678,12	5 \$ 2,819,079	\$ 2,960,03	3 \$ 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	\$ 105,766,7
Value of GHG reduction from non-capped customers																												
(Discounted @ 4%/year)	\$	2,396,217	2,439,588	3 \$ 2	2,345,757 \$	2,380,84	3 \$ 2,409,761	1 \$ 2,432,93	1 \$ 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	\$ 69,566,0
Value of GHG reduction from non-capped customers + Value	ue																											
of natural gas reduction (Not discounted)	\$	23,607,855	23,950,531	1 \$ 24	4,089,355 \$	23,202,86	8 \$ 24,550,657	7 \$ 24,242,92	4 \$ 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	\$ 450,928,4
Value of GHG reduction from non-capped customers + Value	ue																											
of natural gas reduction (Discounted @ 4%/year)	\$	23,607,855	23,029,357	7 \$ 22	2,271,963 \$	20,627,26	\$ 20,986,005	\$ 19,925,91	7 \$ 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	\$ 329,328,
Total Forecast DSM Costs	Ś	63.272.305	5 -	Ś	- Ś	-	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	\$ - 9		Ś -	Ś -	Ś -	Ś -	Ś -	Ś -	\$ 63,272.

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, 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
<u>To Mr. Elson</u>

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 Scen	narios	
	2018 DSM Forecast	Constrained	Semi- constrained	Unconstrained
CPS – Aggregate Annual Savings, Ontario 2015-2020 (million m ³) 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 Total ⁴	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 Factor ⁵	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)

⁶Exhibit J2.2, Attachment A

⁷Exhibit J2.2. Attachment A

Filed: 2018-04-28 EB-2017-0255 Exhibit J2.5 Page 1 of 2

UNION GAS LIMITED

Undertaking of Mr. Ginis <u>To Mr. Elson</u>

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	N/A	114	129	181
Savings (million m ³ /year)				
CPS – Net to Gross (NTG)	N/A	0.70	0.70	0.70
Adjustment Factor ¹				
CPS vs Union Gas – Annual Net	163 ²	80	90	127
Savings (million m³/year)				
CPS vs Union Gas – Annual	63 ³	64	86	319
Program Spending				
(\$ million/year)				
Spending per m ³ of Gas Savings	\$0.39	\$0.80	\$0.96	\$2.51
(\$/m3)				
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)

²Exhibit J2.2, Attachment A

³ Exhibit J2.2, Attachment A

Filed: 2018-04-28 EB-2017-0255 Exhibit J2.5 Page 2 of 2

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)	1634	114	129	181
CPS vs Union Gas – Annual Program Spending (\$ million/year)	63 ⁵	64	86	319
Spending per m ³ of Gas Savings (\$/m ³)	\$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 <u>To Mr. Elson</u>

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
 - o 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.
 - O 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
 - o 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
 - o 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
<u>To Mr. Murray</u>

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. 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 enduse 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.