

January 5, 2016

Ms. Kirsten Walli  
Board Secretary  
Ontario Energy Board  
2300 Yonge Street, 27<sup>th</sup> Floor  
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: EB-2015-0179 – Union Gas Limited (“Union”) – Community Expansion Technical Conference Undertaking Responses**

Please find attached Union’s responses to the Undertakings JT1.2, JT1.3 and JT1.14 received during the Community Expansion Technical Conference held on December 15, 2015. As noted in its December 22, 2015 Undertaking response submission, the attached were not final at the time Union filed its other responses.

These will be filed in RESS and copies will be sent to the Board.

With respect to JT1.11, this response remains a work in progress and will be filed shortly.

If you have any questions with respect to this submission please contact me at 519-436-5476.

Yours truly,

*[original signed by]*

Chris Ripley  
Manager, Regulatory Applications

Encl.

c.c.: C. Keizer, Torys  
EB-2015-0179 Intervenors

**UNION GAS LIMITED**

**Undertaking Response  
To Mr. Wolnik**

To summarize the various attributes in a table that kind of shows those side by side, for whatever projects you looked at these alternative supplies for.

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Union explored an LNG supply model to supply the Kincardine and Ripley area Projects. The communities considered included Chesley, Paisley, Tiverton, Kincardine, Lucknow, Ripley, Point Clark and Inverhuron. Based on the preliminary analysis Union concluded that a pipeline supplied project would be more viable than LNG and for this reason no further detailed investigation was undertaken. The following Tables summarize the findings, and details are provided in Attachment 1.

**Estimated One Time Capital**

<b>Item</b>	<b>Capital Cost (millions)</b>
LNG Trailers (8 @ \$270,000)	\$2.2
Vapourization Stations (8 @ \$1.27 million)	\$10.2
Distribution mains, services, and metering equipment	\$34.2
<b>Total</b>	<b>\$46.5</b>

**Estimated Incremental Annual Operating Costs**

<b>Item</b>	<b>Annual Cost (thousands)</b>
LNG Liquefaction (1 PJ/year @ \$5.073/GJ )	\$5,518
LNG Transport	\$1,591
Re-gasification & odourization	\$326
<b>Total</b>	<b>\$7,435</b>

Underlying assumptions for the above include the following:

- Distribution mains, services and metering equipment - based on initial project feasibility costing that was available at the time the analysis was conducted in 2014.
- LNG Liquefaction - No firm LNG supply was readily available, so the Hagar LNG price of \$5.073/GJ as proposed in EB-2014-0012 was used as a proxy to estimate liquefaction costs.
- LNG Transport - based on the full cost (i.e. labour, fuel and equipment) of operating highway tractors to transport LNG trailers between Hagar and the vapourization stations.

- Re-gasification and Odourization - based on operation of eight vapourization (re-gasification) and odourization stations.

The estimated \$46.5 million capital cost for an LNG supplied project is over 50% of Union’s most recent estimated capital cost of \$87.9 million for a pipeline supplied project. The LNG supplied option estimate is a low range estimate because additional storage would be required at each vapourization site to maintain the same levels of supply reliability that Union’s existing firm customers expect.

The incremental annual costs for the LNG supply option, estimated at \$7.4 million for each year the system is in operation, equate to a simple average of \$1,572 per customer<sup>1</sup>. Recognizing that several large industrial loads were included in the analysis, the \$7.4 million equates to \$6.84 per GJ, or \$560 per year, for a typical residential customer, which would be in addition to costs that are currently recovered in rates. Assuming no changes in LNG costs over time, this additional \$560 would be required in perpetuity in order to recover the annual costs for LNG. In addition, the proposed Temporary Expansion Surcharge (TES) estimated at \$506 per year would still be required for a period of time to support project economic feasibility.

The Table below provides the potential annual energy savings of an LNG supplied project in comparison to a pipeline supplied project for a typical residential customer who converts to natural gas:

**Estimated Average Annual Energy Savings**

<b>Supply Model</b>	<b>During TES Period</b>	<b>After TES Period</b>
LNG Supplied Project	\$536	\$1,042
Pipeline Supplied Project <sup>2</sup>	\$1,096	\$1,602

Based on this preliminary analysis, because the expansion customers would save significantly more each year with a pipeline supplied project no further analysis on an LNG supply option was completed.

<sup>1</sup> Based on 4,730 forecasted customer attachments.

<sup>2</sup> \$1,602 per year as noted at Exhibit A, Tab 1, p.19 (Updated), less TES cost of \$0.23/m<sup>3</sup> during the TES period.

**LNG Distribution Analysis: Kincardine Area and Ripley Area Expansion Projects**

	Capital					Annual Gas Supply and Operating Costs					
	Total Distribution Costs	Capital Cost for LNG Trailers	Vapourization Station Costs	Total LNG Capital Costs	Grand Total Capital Costs	LNG Liquefaction Costs			LNG Transport	Re-gasification / odourization costs	Total Annual Operating Costs
						Assumed L1 rate (\$/GJ)	Annual GJ	Cost			
Chesley	\$ 2,816,745	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 4,221,745	\$ 5.073	33,000	\$ 167,409	\$ 48,272	\$ 9,900	\$ 225,581
Paisley	\$ 2,760,528	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 4,165,528	\$ 5.073	52,823	\$ 267,969	\$ 77,268	\$ 15,847	\$ 361,084
Tiverton	\$ 1,462,623	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 2,867,623	\$ 5.073	14,108	\$ 71,567	\$ 20,636	\$ 4,232	\$ 96,436
Kincardine	\$ 12,342,448	\$ 1,080,000	\$ 1,270,000	\$ 2,350,000	\$ 14,692,448	\$ 5.073	846,690	\$ 4,295,258	\$ 1,238,534	\$ 254,007	\$ 5,787,799
Lucknow	\$ 2,197,515	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 3,602,515	\$ 5.073	21,780	\$ 110,490	\$ 31,860	\$ 6,534	\$ 148,884
Ripley	\$ 1,109,961	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 2,514,961	\$ 5.073	12,210	\$ 61,941	\$ 17,861	\$ 3,663	\$ 83,465
Point Clark	\$ 9,571,112	\$ 270,000	\$ 1,270,000	\$ 1,540,000	\$ 11,111,112	\$ 5.073	91,658	\$ 464,978	\$ 134,076	\$ 27,497	\$ 626,552
Inverhuron	\$ 1,917,545	\$ 135,000	\$ 1,270,000	\$ 1,405,000	\$ 3,322,545	\$ 5.073	15,428	\$ 78,264	\$ 22,567	\$ 4,628	\$ 105,459
<b>Total</b>	<b>\$ 34,178,477</b>	<b>\$ 2,160,000</b>	<b>\$ 10,160,000</b>	<b>\$ 12,320,000</b>	<b>\$ 46,498,477</b>		<b>1,087,695</b>	<b>\$ 5,517,877</b>	<b>\$ 1,591,075</b>	<b>\$ 326,309</b>	<b>\$ 7,435,260</b>

UNION GAS LIMITED

Undertaking Response  
To Mr. Kaiser

Assuming that all 29 projects went into service in year 1, to provide the revenue requirement over a ten-year period, showing a change in the impact of the \$3.26, showing it in year 1, year 5, year 10, and year 15.

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Please see Attachment 1 for a 15-year projection of the revenue requirement for the 29 potential Community Expansion Projects with the assumption that all 29 projects are in service in Year 1 (2016).

Please see Attachment 2 for the cost allocation impact by rate class for Year 1, Year 5, Year 10 and Year 15. Additionally, the cost allocation impact for Year 3 (2018) can be found at Exhibit A, Tab 1, Appendix K (Updated).

Please see Attachment 3 through 7 for the bill impacts of all in-franchise rate classes including the TES and ITE deferral credits for Year 1, Year 5, Year 10 and Year 15. Additionally, the bill impacts for all in-franchise rate classes for Year 3 (2018) can be found at Exhibit B.CCC.21 (Corrected).

UNION GAS LIMITED  
Revenue Requirement of the 29 Potential Community Expansion Projects

Line No.	Particulars (\$000's)	Year 1 2016 (a)	Year 2 2017 (b)	Year 3 2018 (c)	Year 4 2019 (d)	Year 5 2020 (e)	Year 6 2021 (f)	Year 7 2022 (g)	Year 8 2023 (h)	Year 9 2024 (i)	Year 10 2025 (j)	Year 11 2026 (k)	Year 12 2027 (l)	Year 13 2028 (m)	Year 14 2029 (n)	Year 15 2030 (o)
<u>Rate Base Investment</u>																
1	Capital Expenditures	118,743	5,561	2,118	1,412	1,243	1,552	1,185	1,409	1,399	1,161	-	-	-	-	-
2	Average Investment	38,786	117,376	118,479	116,979	114,912	112,801	110,740	108,475	106,323	104,051	101,208	97,584	93,960	90,335	86,711
<u>Revenue Requirement Calculation:</u>																
<u>Operating Expenses:</u>																
3	Operating and Maintenance Expenses (1)	25	121	248	330	379	424	471	519	568	620	664	690	706	722	738
4	Depreciation Expense (2)	1,599	3,267	3,364	3,408	3,441	3,476	3,511	3,543	3,578	3,611	3,625	3,625	3,625	3,625	3,625
5	Property Taxes	280	840	840	840	840	840	840	840	840	840	840	840	840	840	840
6	Total Operating Expenses	<u>1,903</u>	<u>4,229</u>	<u>4,452</u>	<u>4,578</u>	<u>4,661</u>	<u>4,741</u>	<u>4,822</u>	<u>4,902</u>	<u>4,987</u>	<u>5,071</u>	<u>5,130</u>	<u>5,156</u>	<u>5,171</u>	<u>5,187</u>	<u>5,203</u>
7	Required Return (5.77% x line 2) (3)	2,240	6,778	6,842	6,755	6,636	6,514	6,395	6,264	6,140	6,009	5,845	5,635	5,426	5,217	5,007
<u>Income Taxes:</u>																
8	Income Taxes - Equity Return (4)	449	1,358	1,371	1,354	1,330	1,306	1,282	1,255	1,231	1,204	1,171	1,129	1,087	1,045	1,004
9	Income Taxes - Utility Timing Differences (5)	(711)	(1,371)	(1,266)	(1,139)	(1,014)	(896)	(784)	(678)	(578)	(482)	(382)	(281)	(185)	(96)	(12)
10	Total Income Taxes	<u>(263)</u>	<u>(12)</u>	<u>105</u>	<u>214</u>	<u>316</u>	<u>409</u>	<u>497</u>	<u>578</u>	<u>653</u>	<u>722</u>	<u>789</u>	<u>849</u>	<u>902</u>	<u>950</u>	<u>992</u>
11	Total Revenue Requirement (line 6 + line 7 + line 10)	<u>3,881</u>	<u>10,995</u>	<u>11,399</u>	<u>11,548</u>	<u>11,613</u>	<u>11,664</u>	<u>11,714</u>	<u>11,744</u>	<u>11,779</u>	<u>11,802</u>	<u>11,763</u>	<u>11,640</u>	<u>11,500</u>	<u>11,354</u>	<u>11,203</u>
12	Incremental Revenue (6)	171	824	1,644	2,129	2,379	2,588	2,800	3,006	3,211	3,420	3,580	3,637	3,637	3,637	3,637
13	Net Revenue Requirement (line 11 - line 12)	<u>3,710</u>	<u>10,171</u>	<u>9,755</u>	<u>9,419</u>	<u>9,234</u>	<u>9,076</u>	<u>8,914</u>	<u>8,738</u>	<u>8,569</u>	<u>8,381</u>	<u>8,183</u>	<u>8,003</u>	<u>7,863</u>	<u>7,717</u>	<u>7,566</u>

Notes:

- (1) Operating and Maintenance expenses include distribution expenses associated with attaching a new customer.
- (2) Depreciation expense at 2013 Board-approved depreciation rates.
- (3) The required return of 5.77% assumes a capital structure of 64% long-term debt at 4.0% and 36% common equity at the 2013 Board-approved return of 8.93% (0.64 x 0.04 + 0.36 x 0.0893).
- (4) Taxes related to the equity component of the return at a tax rate of 26.5%.
- (5) Taxes related to utility timing differences are negative as the capital cost allowance deduction in arriving at taxable income exceeds the provision of book depreciation in the year.
- (6) Incremental revenue associated with forecast customer attachments based on an average Union North and Union South residential and commercial customer.

UNION GAS LIMITED  
Year 1 (2016) Cost Allocation of the 29 Potential Community Expansion Projects

Line No.	Particulars (\$000's)	Year 1 (2016) Project Costs (1)	TES (2)	ITE (3)	Total
		(a)	(b)	(c)	(d) = (a + b + c)
1	Rate M1	2,251	(204)	(96)	1,951
2	Rate M2	423	(38)	(17)	368
3	Rate M4	116	(11)	(5)	101
4	Rate M5	165	(15)	(4)	146
5	Rate M7	28	(3)	(1)	24
6	Rate M9	(0)	0	(0)	(0)
7	Rate M10	0	(0)	(0)	0
8	Rate T1	80	(7)	(4)	69
9	Rate T2	103	(9)	(15)	79
10	Rate T3	(2)	0	(2)	(4)
11	Subtotal - Union South	<u>3,163</u>	<u>(287)</u>	<u>(142)</u>	<u>2,734</u>
12	Excess Utility Space	(4)	0	(1)	(4)
13	Rate C1	(1)	0	(1)	(2)
14	Rate M12	(127)	11	(53)	(169)
15	Rate M13	(0)	0	(0)	(0)
16	Rate M16	(0)	0	(0)	(0)
17	Subtotal - Ex-franchise	<u>(133)</u>	<u>12</u>	<u>(55)</u>	<u>(175)</u>
18	Rate 01	388	(35)	(40)	312
19	Rate 10	158	(14)	(6)	137
20	Rate 20	122	(11)	(5)	107
21	Rate 100	152	(14)	(4)	134
22	Rate 25	30	(3)	(1)	26
23	Subtotal - Union North	<u>850</u>	<u>(77)</u>	<u>(57)</u>	<u>716</u>
24	In-franchise	4,013	(364)	(199)	3,450
25	Ex-franchise	(133)	12	(55)	(175)
26	Total	<u><u>3,881</u></u>	<u><u>(352)</u></u>	<u><u>(254)</u></u>	<u><u>3,275</u></u>

Notes:

- (1) Year 1 (2016) project costs associated with the 29 potential community expansion projects per Exhibit JT1.3, Attachment 1, column (a).
- (2) TES credit allocated to rate classes in proportion to column (a).
- (3) ITE contributions allocated to rate classes in proportion to 2013 Board-approved property taxes, as per EB-2011-0210, Updated, Exhibit G3, Tab 2, Schedule 2.

UNION GAS LIMITED  
Year 5 (2020) Cost Allocation of the 29 Potential Community Expansion Projects

Line No.	Particulars (\$000's)	Year 5 (2020) Project Costs (1)	TES (2)	ITE (3)	Total
		(a)	(b)	(c)	(d) = (a + b + c)
1	Rate M1	6,403	(2,176)	(257)	3,970
2	Rate M2	1,142	(388)	(44)	709
3	Rate M4	312	(106)	(12)	193
4	Rate M5	434	(148)	(11)	276
5	Rate M7	79	(27)	(4)	48
6	Rate M9	1	(0)	(1)	(0)
7	Rate M10	0	(0)	(0)	0
8	Rate T1	214	(73)	(9)	132
9	Rate T2	309	(105)	(39)	165
10	Rate T3	1	(0)	(4)	(4)
11	Subtotal - Union South	<u>8,894</u>	<u>(3,023)</u>	<u>(382)</u>	<u>5,490</u>
12	Excess Utility Space	(6)	2	(1)	(6)
13	Rate C1	(3)	1	(2)	(4)
14	Rate M12	(151)	51	(143)	(243)
15	Rate M13	(0)	0	(0)	(0)
16	Rate M16	(0)	0	(0)	(1)
17	Subtotal - Ex-franchise	<u>(160)</u>	<u>54</u>	<u>(147)</u>	<u>(252)</u>
18	Rate 01	1,558	(529)	(108)	920
19	Rate 10	472	(160)	(17)	294
20	Rate 20	343	(117)	(12)	214
21	Rate 100	407	(138)	(10)	259
22	Rate 25	98	(33)	(4)	61
23	Subtotal - Union North	<u>2,878</u>	<u>(978)</u>	<u>(152)</u>	<u>1,748</u>
24	In-franchise	11,773	(4,001)	(533)	7,239
25	Ex-franchise	(160)	54	(147)	(252)
26	Total	<u><u>11,613</u></u>	<u><u>(3,946)</u></u>	<u><u>(680)</u></u>	<u><u>6,986</u></u>

Notes:

- (1) Year 5 (2020) project costs associated with the 29 potential community expansion projects per Exhibit JT1.3, Attachment 1, column (e).
- (2) TES credit allocated to rate classes in proportion to column (a).
- (3) ITE contributions allocated to rate classes in proportion to 2013 Board-approved property taxes, as per EB-2011-0210, Updated, Exhibit G3, Tab 2, Schedule 2.



UNION GAS LIMITED  
Year 10 (2025) Cost Allocation of the 29 Potential Community Expansion Projects

Line No.	Particulars (\$000's)	Year 10 (2025) Project Costs (1)	TES (2)	ITE (3)	Total
		(a)	(b)	(c)	(d) = (a + b + c)
1	Rate M1	6,320	(139)	(30)	6,151
2	Rate M2	1,088	(24)	(5)	1,059
3	Rate M4	296	(6)	(1)	288
4	Rate M5	408	(9)	(1)	398
5	Rate M7	76	(2)	(0)	74
6	Rate M9	1	(0)	(0)	1
7	Rate M10	0	(0)	(0)	0
8	Rate T1	204	(4)	(1)	199
9	Rate T2	311	(7)	(5)	300
10	Rate T3	4	(0)	(0)	4
11	Subtotal - Union South	<u>8,709</u>	<u>(191)</u>	<u>(45)</u>	<u>8,473</u>
12	Excess Utility Space	(4)	0	(0)	(4)
13	Rate C1	(2)	0	(0)	(2)
14	Rate M12	(40)	1	(17)	(56)
15	Rate M13	(0)	0	(0)	(0)
16	Rate M16	(0)	0	(0)	(0)
17	Subtotal - Ex-franchise	<u>(46)</u>	<u>1</u>	<u>(17)</u>	<u>(62)</u>
18	Rate 01	1,834	(40)	(13)	1,781
19	Rate 10	479	(11)	(2)	466
20	Rate 20	335	(7)	(1)	326
21	Rate 100	386	(8)	(1)	377
22	Rate 25	105	(2)	(0)	103
23	Subtotal - Union North	<u>3,139</u>	<u>(69)</u>	<u>(18)</u>	<u>3,053</u>
24	In-franchise	11,848	(260)	(62)	11,526
25	Ex-franchise	(46)	1	(17)	(62)
26	Total	<u><u>11,802</u></u>	<u><u>(259)</u></u>	<u><u>(80)</u></u>	<u><u>11,463</u></u>

Notes:

- (1) Year 10 (2025) project costs associated with the 29 potential community expansion projects per Exhibit JT1.3, Attachment 1, column (j).
- (2) TES credit allocated to rate classes in proportion to column (a)
- (3) ITE contributions allocated to rate classes in proportion to 2013 Board-approved property taxes, as per EB-2011-0210, Updated, Exhibit G3, Tab 2, Schedule 2.

UNION GAS LIMITED  
Year 15 (2030) Cost Allocation of the 29 Potential Community Expansion Projects

Line No.	Particulars (\$000's)	Year 15 (2030) Project Costs (1)	TES (2)	ITE (3)	Total
		(a)	(b)	(c)	(d) = (a + b + c)
1	Rate M1	5,914	-	-	5,914
2	Rate M2	1,011	-	-	1,011
3	Rate M4	275	-	-	275
4	Rate M5	375	-	-	375
5	Rate M7	71	-	-	71
6	Rate M9	2	-	-	2
7	Rate M10	0	-	-	0
8	Rate T1	190	-	-	190
9	Rate T2	303	-	-	303
10	Rate T3	7	-	-	7
11	Subtotal - Union South	<u>8,148</u>	<u>-</u>	<u>-</u>	<u>8,148</u>
12	Excess Utility Space	(1)	-	-	(1)
13	Rate C1	(1)	-	-	(1)
14	Rate M12	68	-	-	68
15	Rate M13	(0)	-	-	(0)
16	Rate M16	(0)	-	-	(0)
17	Subtotal - Ex-franchise	<u>66</u>	<u>-</u>	<u>-</u>	<u>66</u>
18	Rate 01	1,773	-	-	1,773
19	Rate 10	446	-	-	446
20	Rate 20	312	-	-	312
21	Rate 100	359	-	-	359
22	Rate 25	99	-	-	99
23	Subtotal - Union North	<u>2,989</u>	<u>-</u>	<u>-</u>	<u>2,989</u>
24	In-franchise	11,137	-	-	11,137
25	Ex-franchise	66	-	-	66
26	Total	<u><u>11,203</u></u>	<u><u>-</u></u>	<u><u>-</u></u>	<u><u>11,203</u></u>

Notes:

- (1) Year 15 (2030) project costs associated with the 29 potential community expansion projects per Exhibit JT1.3, Attachment 1, column (o).
- (2) TES credit allocated to rate classes in proportion to column (a).
- (3) ITE contributions allocated to rate classes in proportion to 2013 Board-approved property taxes, as per EB-2011-0210, Updated, Exhibit G3, Tab 2, Schedule 2.

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 1 (2016) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	EB-2015-0187 2015 Jul QRAM Rates (1)		Year 1 (2016) Community Expansion Proposal		Impact		
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)	Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
<u>Small Rate 01</u>								
1	Delivery Charges	447	20.3307	448	20.3544	0.0237	0.52	0.1%
2	TES and ITE Deferral Credits	-	-	(0)	(0.0081)	(0.0081)	(0.18)	-
3	Gas Supply Charges	542	24.6490	542	24.6474	(0.0016)	(0.04)	0.0%
4	Total Bill	990	44.9797	990	44.9937	0.0140	0.31	0.0%
5	Sales Service Impact						0.31	0.0%
6	Bundled-T (Direct Purchase) Impact						0.31	0.0%
<u>Small Rate 10</u>								
7	Delivery Charges	4,493	7.4877	4,534	7.5575	0.0698	41.88	0.9%
8	TES and ITE Deferral Credits	-	-	(4)	(0.0060)	(0.0060)	(3.60)	-
9	Gas Supply Charges	14,789	24.6490	14,788	24.6474	(0.0016)	(0.97)	0.0%
10	Total Bill	19,282	32.1367	19,319	32.1989	0.0622	37.31	0.2%
11	Sales Service Impact						37.31	0.2%
12	Bundled-T (Direct Purchase) Impact						37.31	0.3%
<u>Large Rate 10</u>								
13	Delivery Charges	14,507	5.8027	14,626	5.8504	0.0476	119.05	0.8%
14	TES and ITE Deferral Credits	-	-	(15)	(0.0060)	(0.0060)	(15.01)	-
15	Gas Supply Charges	61,623	24.6490	61,619	24.6474	(0.0016)	(4.03)	0.0%
16	Total Bill	76,129	30.4518	76,229	30.4918	0.0400	100.01	0.1%
17	Sales Service Impact						100.01	0.1%
18	Bundled-T (Direct Purchase) Impact						100.01	0.2%
<u>Small Rate 20</u>								
19	Delivery Charges	74,678	2.4893	75,490	2.5163	0.0271	812.11	1.1%
20	TES and ITE Deferral Credits	-	-	(76)	(0.0025)	(0.0025)	(76.31)	-
21	Gas Supply Charges	657,718	21.9239	657,680	21.9227	(0.0013)	(38.47)	0.0%
22	Total Bill	732,396	24.4132	733,094	24.4365	0.0232	697.33	0.1%
23	Sales Service Impact						697.33	0.1%
24	Bundled-T (Direct Purchase) Impact						697.33	0.2%
<u>Large Rate 20</u>								
25	Delivery Charges	286,266	1.9084	288,928	1.9262	0.0177	2,662.06	0.9%
26	TES and ITE Deferral Credits	-	-	(382)	(0.0025)	(0.0025)	(381.55)	-
27	Gas Supply Charges	3,081,424	20.5428	3,081,259	20.5417	(0.0011)	(164.89)	0.0%
28	Total Bill	3,367,690	22.4513	3,369,805	22.4654	0.0141	2,115.62	0.1%
29	Sales Service Impact						2,115.62	0.1%
30	Bundled-T (Direct Purchase) Impact						2,115.62	0.1%
<u>Average Rate 25</u>								
31	Delivery Charges	63,539	2.7929	63,964	2.8116	0.0187	424.34	0.7%
32	TES and ITE Deferral Credits	-	-	(4)	(0.0002)	(0.0002)	(4.04)	-
33	Gas Supply Charges	368,650	16.2044	368,650	16.2044	-	-	0.0%
34	Total Bill	432,189	18.9973	432,609	19.0158	0.0185	420.31	0.1%
35	Sales Service Impact						420.31	0.1%
36	T-Service (Direct Purchase) Impact						420.31	0.7%
<u>Small Rate 100</u>								
37	Delivery Charges	261,451	0.9683	264,088	0.9781	0.0098	2,637.36	1.0%
38	TES and ITE Deferral Credits	-	-	(256)	(0.0009)	(0.0009)	(256.31)	-
39	Gas Supply Charges	6,150,989	22.7814	6,150,989	22.7814	-	-	0.0%
40	Total Bill	6,412,440	23.7498	6,414,821	23.7586	0.0088	2,381.05	0.0%
41	Sales Service Impact						2,381.05	0.0%
42	T-Service (Direct Purchase) Impact						2,381.05	0.9%
<u>Large Rate 100</u>								
43	Delivery Charges	2,113,543	0.8806	2,134,255	0.8893	0.0086	20,712.36	1.0%
44	TES and ITE Deferral Credits	-	-	(2,278)	(0.0009)	(0.0009)	(2,278.29)	-
45	Gas Supply Charges	53,570,299	22.3210	53,570,299	22.3210	-	-	0.0%
46	Total Bill	55,683,842	23.2016	55,702,277	23.2093	0.0077	18,434.07	0.0%
47	Sales Service Impact						18,434.07	0.0%
48	T-Service (Direct Purchase) Impact						18,434.07	0.9%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 1 (2016) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 1 (2016) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M1</u>								
1	Delivery Charges	350	15.8925	351	15.9752	0.0827	1.82	0.5%
2	TES and ITE Deferral Credits	-	-	(0)	(0.0103)	(0.0103)	(0.23)	-
3	Gas Supply Charges	357	16.2455	357	16.2455	-	-	0.0%
4	Total Bill	707	32.1380	709	32.2105	0.0725	1.59	0.2%
5	Sales Service Impact						1.59	0.2%
6	Direct Purchase Impact						1.59	0.5%
<u>Small Rate M2</u>								
7	Delivery Charges	3,343	5.5714	3,369	5.6153	0.0440	26.39	0.8%
8	TES and ITE Deferral Credits	-	-	(3)	(0.0048)	(0.0048)	(2.87)	-
9	Gas Supply Charges	9,747	16.2455	9,747	16.2455	-	-	0.0%
10	Total Bill	13,090	21.8169	13,114	21.8561	0.0392	23.51	0.2%
11	Sales Service Impact						23.51	0.2%
12	Direct Purchase Impact						23.51	0.7%
<u>Large Rate M2</u>								
13	Delivery Charges	10,801	4.3205	10,894	4.3574	0.0370	92.38	0.9%
14	TES and ITE Deferral Credits	-	-	(12)	(0.0048)	(0.0048)	(11.97)	-
15	Gas Supply Charges	40,614	16.2455	40,614	16.2455	-	-	0.0%
16	Total Bill	51,415	20.5660	51,495	20.5981	0.0322	80.41	0.2%
17	Sales Service Impact						80.41	0.2%
18	Direct Purchase Impact						80.41	0.7%
<u>Small Rate M4</u>								
19	Delivery Charges	36,618	4.1850	36,948	4.2226	0.0376	329.21	0.9%
20	TES and ITE Deferral Credits	-	-	(35)	(0.0040)	(0.0040)	(34.85)	-
21	Gas Supply Charges	142,148	16.2455	142,148	16.2455	-	-	0.0%
22	Total Bill	178,767	20.4305	179,061	20.4641	0.0336	294.36	0.2%
23	Sales Service Impact						294.36	0.2%
24	Direct Purchase Impact						294.36	0.8%
<u>Large Rate M4</u>								
25	Delivery Charges	284,379	2.3698	287,143	2.3929	0.0230	2,763.58	1.0%
26	TES and ITE Deferral Credits	-	-	(478)	(0.0040)	(0.0040)	(477.91)	-
27	Gas Supply Charges	1,949,460	16.2455	1,949,460	16.2455	-	-	0.0%
28	Total Bill	2,233,839	18.6153	2,236,125	18.6344	0.0190	2,285.68	0.1%
29	Sales Service Impact						2,285.68	0.1%
30	Direct Purchase Impact						2,285.68	0.8%
<u>Small Rate M5</u>								
31	Delivery Charges	30,072	3.6451	31,009	3.7587	0.1136	937.40	3.1%
32	TES and ITE Deferral Credits	-	-	(31)	(0.0037)	(0.0037)	(30.54)	-
33	Gas Supply Charges	134,025	16.2455	134,025	16.2455	-	-	0.0%
34	Total Bill	164,097	19.8906	165,004	20.0005	0.1099	906.86	0.6%
35	Sales Service Impact						906.86	0.6%
36	Direct Purchase Impact						906.86	3.0%
<u>Large Rate M5</u>								
37	Delivery Charges	164,701	2.5339	171,784	2.6428	0.1090	7,083.42	4.3%
38	TES and ITE Deferral Credits	-	-	(241)	(0.0037)	(0.0037)	(240.60)	-
39	Gas Supply Charges	1,055,958	16.2455	1,055,958	16.2455	-	-	0.0%
40	Total Bill	1,220,659	18.7794	1,227,501	18.8846	0.1053	6,842.82	0.6%
41	Sales Service Impact						6,842.82	0.6%
42	Direct Purchase Impact						6,842.82	4.2%
<u>Small Rate M7</u>								
43	Delivery Charges	644,105	1.7892	647,968	1.7999	0.0107	3,862.98	0.6%
44	TES and ITE Deferral Credits	-	-	(1,034)	(0.0029)	(0.0029)	(1,034.12)	-
45	Gas Supply Charges	5,848,380	16.2455	5,848,380	16.2455	-	-	0.0%
46	Total Bill	6,492,485	18.0347	6,495,314	18.0425	0.0079	2,828.86	0.0%
47	Sales Service Impact						2,828.86	0.0%
48	Direct Purchase Impact						2,828.86	0.4%
<u>Large Rate M7</u>								
49	Delivery Charges	2,451,861	4.7151	2,468,718	4.7475	0.0324	16,856.64	0.7%
50	TES and ITE Deferral Credits	-	-	(1,494)	(0.0029)	(0.0029)	(1,493.72)	-
51	Gas Supply Charges	8,447,660	16.2455	8,447,660	16.2455	-	-	0.0%
52	Total Bill	10,899,521	20.9606	10,914,884	20.9902	0.0295	15,362.92	0.1%
53	Sales Service Impact						15,362.92	0.1%
54	Direct Purchase Impact						15,362.92	0.6%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 1 (2016) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 1 (2016) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M9</u>								
1	Delivery Charges	124,052	1.7849	124,011	1.7843	(0.0006)	(40.64)	0.0%
2	TES and ITE Deferral Credits	-	-	(21)	(0.0003)	(0.0003)	(21.16)	-
3	Gas Supply Charges	1,129,062	16.2455	1,129,062	16.2455	-	-	0.0%
4	Total Bill	1,253,114	18.0304	1,253,052	18.0295	(0.0009)	(61.79)	0.0%
5	Sales Service Impact						(61.79)	0.0%
6	Direct Purchase Impact						(61.79)	0.0%
<u>Large Rate M9</u>								
7	Delivery Charges	368,423	1.8259	368,302	1.8253	(0.0006)	(121.03)	0.0%
8	TES and ITE Deferral Credits	-	-	(61)	(0.0003)	(0.0003)	(61.43)	-
9	Gas Supply Charges	3,278,017	16.2455	3,278,017	16.2455	-	-	0.0%
10	Total Bill	3,646,440	18.0714	3,646,258	18.0705	(0.0009)	(182.46)	0.0%
11	Sales Service Impact						(182.46)	0.0%
12	Direct Purchase Impact						(182.46)	0.0%
<u>Average Rate M10</u>								
13	Delivery Charges	5,121	5.4191	5,132	5.4311	0.0120	11.34	0.2%
14	TES and ITE Deferral Credits	-	-	(5)	(0.0048)	(0.0048)	(4.56)	-
15	Gas Supply Charges	15,352	16.2455	15,352	16.2455	-	-	0.0%
16	Total Bill	20,473	21.6646	20,480	21.6718	0.0072	6.78	0.0%
17	Sales Service Impact						6.78	0.0%
18	Direct Purchase Impact						6.78	0.1%
<u>Small Rate T1</u>								
19	Delivery Charges	129,998	1.7248	131,089	1.7393	0.0145	1,091.32	0.8%
20	TES and ITE Deferral Credits	-	-	(153)	(0.0020)	(0.0020)	(152.69)	-
21	Gas Supply Charges	1,224,423	16.2455	1,224,423	16.2455	-	-	0.0%
22	Total Bill	1,354,421	17.9703	1,355,360	17.9827	0.0125	938.64	0.1%
23	Sales Service Impact						938.64	0.1%
24	Direct Purchase Impact						938.64	0.7%
<u>Average Rate T1</u>								
25	Delivery Charges	198,345	1.7149	200,097	1.7301	0.0151	1,751.11	0.9%
26	TES and ITE Deferral Credits	-	-	(234)	(0.0020)	(0.0020)	(234.31)	-
27	Gas Supply Charges	1,878,944	16.2455	1,878,944	16.2455	-	-	0.0%
28	Total Bill	2,077,290	17.9604	2,078,807	17.9735	0.0131	1,516.81	0.1%
29	Sales Service Impact						1,516.81	0.1%
30	Direct Purchase Impact						1,516.81	0.8%
<u>Large Rate T1</u>								
31	Delivery Charges	437,508	1.7074	441,568	1.7233	0.0158	4,060.24	0.9%
32	TES and ITE Deferral Credits	-	-	(519)	(0.0020)	(0.0020)	(519.10)	-
33	Gas Supply Charges	4,162,760	16.2455	4,162,760	16.2455	-	-	0.0%
34	Total Bill	4,600,267	17.9529	4,603,809	17.9667	0.0138	3,541.14	0.1%
35	Sales Service Impact						3,541.14	0.1%
36	Direct Purchase Impact						3,541.14	0.8%
<u>Small Rate T2</u>								
37	Delivery Charges	494,864	0.8351	496,215	0.8374	0.0023	1,350.86	0.3%
38	TES and ITE Deferral Credits	-	-	(299)	(0.0005)	(0.0005)	(299.22)	-
39	Gas Supply Charges	9,626,433	16.2455	9,626,433	16.2455	-	-	0.0%
40	Total Bill	10,121,298	17.0806	10,122,350	17.0824	0.0018	1,051.64	0.0%
41	Sales Service Impact						1,051.64	0.0%
42	Direct Purchase Impact						1,051.64	0.2%
<u>Average Rate T2</u>								
43	Delivery Charges	1,141,889	0.5773	1,144,073	0.5784	0.0011	2,184.32	0.2%
44	TES and ITE Deferral Credits	-	-	(999)	(0.0005)	(0.0005)	(998.76)	-
45	Gas Supply Charges	32,131,950	16.2455	32,131,950	16.2455	-	-	0.0%
46	Total Bill	33,273,839	16.8228	33,275,024	16.8234	0.0006	1,185.56	0.0%
47	Sales Service Impact						1,185.56	0.0%
48	Direct Purchase Impact						1,185.56	0.1%
<u>Large Rate T2</u>								
49	Delivery Charges	1,860,652	0.5028	1,863,760	0.5036	0.0008	3,108.26	0.2%
50	TES and ITE Deferral Credits	-	-	(1,869)	(0.0005)	(0.0005)	(1,868.80)	-
51	Gas Supply Charges	60,122,808	16.2455	60,122,808	16.2455	-	-	0.0%
52	Total Bill	61,983,460	16.7483	61,984,700	16.7486	0.0003	1,239.46	0.0%
53	Sales Service Impact						1,239.46	0.0%
54	Direct Purchase Impact						1,239.46	0.1%
<u>Large Rate T3</u>								
55	Delivery Charges	3,220,759	1.1810	3,219,839	1.1807	(0.0003)	(920.04)	0.0%
56	TES and ITE Deferral Credits	-	-	(1,341)	(0.0005)	(0.0005)	(1,340.99)	-
57	Gas Supply Charges	44,303,428	16.2455	44,303,428	16.2455	-	-	0.0%
58	Total Bill	47,524,187	17.4265	47,521,926	17.4257	(0.0008)	(2,261.03)	0.0%
59	Sales Service Impact						(2,261.03)	0.0%
60	Direct Purchase Impact						(2,261.03)	-0.1%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 5 (2020) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	EB-2015-0187		Year 5 (2020) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> )	Delivery Rate Change (\$)	Annual Bill (%)
		Annual Bill (\$)	Unit Rate (cents/m <sup>3</sup> )	Annual Bill (\$)	Unit Rate (cents/m <sup>3</sup> )			
		(a)	(b)	(c)	(d)			
<u>Small Rate 01</u>								
1	Delivery Charges	447	20.3307	449	20.4196	0.0889	1.96	0.4%
2	TES and ITE Deferral Credits	-	-	(2)	(0.0683)	(0.0683)	(1.50)	-
3	Gas Supply Charges	542	24.6490	542	24.6468	(0.0022)	(0.05)	0.0%
4	Total Bill	990	44.9797	990	44.9981	0.0184	0.40	0.0%
5	Sales Service Impact						0.40	0.0%
6	Bundled-T (Direct Purchase) Impact						0.40	0.1%
<u>Small Rate 10</u>								
7	Delivery Charges	4,493	7.4877	4,622	7.7029	0.2153	129.16	2.9%
8	TES and ITE Deferral Credits	-	-	(31)	(0.0513)	(0.0513)	(30.76)	-
9	Gas Supply Charges	14,789	24.6490	14,788	24.6468	(0.0022)	(1.33)	0.0%
10	Total Bill	19,282	32.1367	19,379	32.2985	0.1618	97.06	0.5%
11	Sales Service Impact						97.06	0.5%
12	Bundled-T (Direct Purchase) Impact						97.06	0.8%
<u>Large Rate 10</u>								
13	Delivery Charges	14,507	5.8027	14,855	5.9421	0.1394	348.49	2.4%
14	TES and ITE Deferral Credits	-	-	(128)	(0.0513)	(0.0513)	(128.18)	-
15	Gas Supply Charges	61,623	24.6490	61,617	24.6468	(0.0022)	(5.53)	0.0%
16	Total Bill	76,129	30.4518	76,344	30.5377	0.0859	214.78	0.3%
17	Sales Service Impact						214.78	0.3%
18	Bundled-T (Direct Purchase) Impact						214.78	0.5%
<u>Small Rate 20</u>								
19	Delivery Charges	74,678	2.4893	77,118	2.5706	0.0813	2,440.37	3.3%
20	TES and ITE Deferral Credits	-	-	(625)	(0.0208)	(0.0208)	(625.40)	-
21	Gas Supply Charges	657,718	21.9239	657,654	21.9218	(0.0022)	(64.51)	0.0%
22	Total Bill	732,396	24.4132	734,147	24.4716	0.0583	1,750.46	0.2%
23	Sales Service Impact						1,750.46	0.2%
24	Bundled-T (Direct Purchase) Impact						1,750.46	0.5%
<u>Large Rate 20</u>								
25	Delivery Charges	286,266	1.9084	293,572	1.9571	0.0487	7,306.42	2.6%
26	TES and ITE Deferral Credits	-	-	(3,127)	(0.0208)	(0.0208)	(3,126.98)	-
27	Gas Supply Charges	3,081,424	20.5428	3,081,147	20.5410	(0.0018)	(276.49)	0.0%
28	Total Bill	3,367,690	22.4513	3,371,593	22.4773	0.0260	3,902.94	0.1%
29	Sales Service Impact						3,902.94	0.1%
30	Bundled-T (Direct Purchase) Impact						3,902.94	0.3%
<u>Average Rate 25</u>								
31	Delivery Charges	63,539	2.7929	64,942	2.8546	0.0617	1,402.70	2.2%
32	TES and ITE Deferral Credits	-	-	(37)	(0.0016)	(0.0016)	(36.94)	-
33	Gas Supply Charges	368,650	16.2044	368,650	16.2044	-	-	0.0%
34	Total Bill	432,189	18.9973	433,555	19.0574	0.0600	1,365.76	0.3%
35	Sales Service Impact						1,365.76	0.3%
36	T-Service (Direct Purchase) Impact						1,365.76	2.1%
<u>Small Rate 100</u>								
37	Delivery Charges	261,451	0.9683	268,691	0.9952	0.0268	7,239.72	2.8%
38	TES and ITE Deferral Credits	-	-	(2,162)	(0.0080)	(0.0080)	(2,161.78)	-
39	Gas Supply Charges	6,150,989	22.7814	6,150,989	22.7814	-	-	0.0%
40	Total Bill	6,412,440	23.7498	6,417,518	23.7686	0.0188	5,077.94	0.1%
41	Sales Service Impact						5,077.94	0.1%
42	T-Service (Direct Purchase) Impact						5,077.94	1.9%
<u>Large Rate 100</u>								
43	Delivery Charges	2,113,543	0.8806	2,168,381	0.9035	0.0228	54,837.72	2.6%
44	TES and ITE Deferral Credits	-	-	(19,216)	(0.0080)	(0.0080)	(19,215.79)	-
45	Gas Supply Charges	53,570,299	22.3210	53,570,299	22.3210	-	-	0.0%
46	Total Bill	55,683,842	23.2016	55,719,464	23.2164	0.0148	35,621.93	0.1%
47	Sales Service Impact						35,621.93	0.1%
48	T-Service (Direct Purchase) Impact						35,621.93	1.7%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 5 (2020) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 5 (2020) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M1</u>								
1	Delivery Charges	350	15.8925	354	16.0985	0.2060	4.53	1.3%
2	TES and ITE Deferral Credits	-	-	(2)	(0.0829)	(0.0829)	(1.82)	-
3	Gas Supply Charges	357	16.2455	357	16.2455	-	-	0.0%
4	Total Bill	707	32.1380	710	32.2611	0.1231	2.71	0.4%
5	Sales Service Impact						2.71	0.4%
6	Direct Purchase Impact						2.71	0.8%
<u>Small Rate M2</u>								
7	Delivery Charges	3,343	5.5714	3,416	5.6930	0.1216	72.96	2.2%
8	TES and ITE Deferral Credits	-	-	(23)	(0.0377)	(0.0377)	(22.63)	-
9	Gas Supply Charges	9,747	16.2455	9,747	16.2455	-	-	0.0%
10	Total Bill	13,090	21.8169	13,140	21.9008	0.0839	50.34	0.4%
11	Sales Service Impact						50.34	0.4%
12	Direct Purchase Impact						50.34	1.5%
<u>Large Rate M2</u>								
13	Delivery Charges	10,801	4.3205	11,051	4.4203	0.0998	249.51	2.3%
14	TES and ITE Deferral Credits	-	-	(94)	(0.0377)	(0.0377)	(94.29)	-
15	Gas Supply Charges	40,614	16.2455	40,614	16.2455	-	-	0.0%
16	Total Bill	51,415	20.5660	51,570	20.6281	0.0621	155.22	0.3%
17	Sales Service Impact						155.22	0.3%
18	Direct Purchase Impact						155.22	1.4%
<u>Small Rate M4</u>								
19	Delivery Charges	36,618	4.1850	37,502	4.2859	0.1009	883.18	2.4%
20	TES and ITE Deferral Credits	-	-	(272)	(0.0310)	(0.0310)	(271.55)	-
21	Gas Supply Charges	142,148	16.2455	142,148	16.2455	-	-	0.0%
22	Total Bill	178,767	20.4305	179,378	20.5004	0.0699	611.63	0.3%
23	Sales Service Impact						611.63	0.3%
24	Direct Purchase Impact						611.63	1.7%
<u>Large Rate M4</u>								
25	Delivery Charges	284,379	2.3698	291,793	2.4316	0.0618	7,413.87	2.6%
26	TES and ITE Deferral Credits	-	-	(3,724)	(0.0310)	(0.0310)	(3,724.14)	-
27	Gas Supply Charges	1,949,460	16.2455	1,949,460	16.2455	-	-	0.0%
28	Total Bill	2,233,839	18.6153	2,237,529	18.6461	0.0307	3,689.74	0.2%
29	Sales Service Impact						3,689.74	0.2%
30	Direct Purchase Impact						3,689.74	1.3%
<u>Small Rate M5</u>								
31	Delivery Charges	30,072	3.6451	31,537	3.8226	0.1776	1,465.13	4.9%
32	TES and ITE Deferral Credits	-	-	(255)	(0.0309)	(0.0309)	(255.08)	-
33	Gas Supply Charges	134,025	16.2455	134,025	16.2455	-	-	0.0%
34	Total Bill	164,097	19.8906	165,307	20.0372	0.1467	1,210.05	0.7%
35	Sales Service Impact						1,210.05	0.7%
36	Direct Purchase Impact						1,210.05	4.0%
<u>Large Rate M5</u>								
37	Delivery Charges	164,701	2.5339	175,184	2.6951	0.1613	10,482.70	6.4%
38	TES and ITE Deferral Credits	-	-	(2,010)	(0.0309)	(0.0309)	(2,009.71)	-
39	Gas Supply Charges	1,055,958	16.2455	1,055,958	16.2455	-	-	0.0%
40	Total Bill	1,220,659	18.7794	1,229,132	18.9097	0.1304	8,472.99	0.7%
41	Sales Service Impact						8,472.99	0.7%
42	Direct Purchase Impact						8,472.99	5.1%
<u>Small Rate M7</u>								
43	Delivery Charges	644,105	1.7892	654,776	1.8188	0.0296	10,670.22	1.7%
44	TES and ITE Deferral Credits	-	-	(7,873)	(0.0219)	(0.0219)	(7,873.06)	-
45	Gas Supply Charges	5,848,380	16.2455	5,848,380	16.2455	-	-	0.0%
46	Total Bill	6,492,485	18.0347	6,495,282	18.0425	0.0078	2,797.16	0.0%
47	Sales Service Impact						2,797.16	0.0%
48	Direct Purchase Impact						2,797.16	0.4%
<u>Large Rate M7</u>								
49	Delivery Charges	2,451,861	4.7151	2,498,422	4.8047	0.0895	46,560.96	1.9%
50	TES and ITE Deferral Credits	-	-	(11,372)	(0.0219)	(0.0219)	(11,372.20)	-
51	Gas Supply Charges	8,447,660	16.2455	8,447,660	16.2455	-	-	0.0%
52	Total Bill	10,899,521	20.9606	10,934,710	21.0283	0.0677	35,188.76	0.3%
53	Sales Service Impact						35,188.76	0.3%
54	Direct Purchase Impact						35,188.76	1.4%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 5 (2020) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 5 (2020) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M9</u>								
1	Delivery Charges	124,052	1.7849	124,145	1.7863	0.0013	93.46	0.1%
2	TES and ITE Deferral Credits	-	-	(84)	(0.0012)	(0.0012)	(84.10)	-
3	Gas Supply Charges	1,129,062	16.2455	1,129,062	16.2455	-	-	0.0%
4	Total Bill	1,253,114	18.0304	1,253,123	18.0305	0.0001	9.36	0.0%
5	Sales Service Impact						9.36	0.0%
6	Direct Purchase Impact						9.36	0.0%
<u>Large Rate M9</u>								
7	Delivery Charges	368,423	1.8259	368,702	1.8272	0.0014	278.37	0.1%
8	TES and ITE Deferral Credits	-	-	(244)	(0.0012)	(0.0012)	(244.17)	-
9	Gas Supply Charges	3,278,017	16.2455	3,278,017	16.2455	-	-	0.0%
10	Total Bill	3,646,440	18.0714	3,646,475	18.0715	0.0002	34.20	0.0%
11	Sales Service Impact						34.20	0.0%
12	Direct Purchase Impact						34.20	0.0%
<u>Average Rate M10</u>								
13	Delivery Charges	5,121	5.4191	5,197	5.4993	0.0802	75.79	1.5%
14	TES and ITE Deferral Credits	-	-	(35)	(0.0373)	(0.0373)	(35.21)	-
15	Gas Supply Charges	15,352	16.2455	15,352	16.2455	-	-	0.0%
16	Total Bill	20,473	21.6646	20,514	21.7075	0.0429	40.58	0.2%
17	Sales Service Impact						40.58	0.2%
18	Direct Purchase Impact						40.58	0.8%
<u>Small Rate T1</u>								
19	Delivery Charges	129,998	1.7248	132,927	1.7637	0.0389	2,929.04	2.3%
20	TES and ITE Deferral Credits	-	-	(1,171)	(0.0155)	(0.0155)	(1,170.91)	-
21	Gas Supply Charges	1,224,423	16.2455	1,224,423	16.2455	-	-	0.0%
22	Total Bill	1,354,421	17.9703	1,356,179	17.9936	0.0233	1,758.13	0.1%
23	Sales Service Impact						1,758.13	0.1%
24	Direct Purchase Impact						1,758.13	1.4%
<u>Average Rate T1</u>								
25	Delivery Charges	198,345	1.7149	203,015	1.7553	0.0404	4,669.32	2.4%
26	TES and ITE Deferral Credits	-	-	(1,797)	(0.0155)	(0.0155)	(1,796.82)	-
27	Gas Supply Charges	1,878,944	16.2455	1,878,944	16.2455	-	-	0.0%
28	Total Bill	2,077,290	17.9604	2,080,162	17.9852	0.0248	2,872.50	0.1%
29	Sales Service Impact						2,872.50	0.1%
30	Direct Purchase Impact						2,872.50	1.4%
<u>Large Rate T1</u>								
31	Delivery Charges	437,508	1.7074	448,267	1.7494	0.0420	10,759.68	2.5%
32	TES and ITE Deferral Credits	-	-	(3,981)	(0.0155)	(0.0155)	(3,980.82)	-
33	Gas Supply Charges	4,162,760	16.2455	4,162,760	16.2455	-	-	0.0%
34	Total Bill	4,600,267	17.9529	4,607,046	17.9794	0.0265	6,778.86	0.1%
35	Sales Service Impact						6,778.86	0.1%
36	Direct Purchase Impact						6,778.86	1.5%
<u>Small Rate T2</u>								
37	Delivery Charges	494,864	0.8351	499,006	0.8421	0.0070	4,141.02	0.8%
38	TES and ITE Deferral Credits	-	-	(1,803)	(0.0030)	(0.0030)	(1,802.57)	-
39	Gas Supply Charges	9,626,433	16.2455	9,626,433	16.2455	-	-	0.0%
40	Total Bill	10,121,298	17.0806	10,123,636	17.0846	0.0039	2,338.45	0.0%
41	Sales Service Impact						2,338.45	0.0%
42	Direct Purchase Impact						2,338.45	0.5%
<u>Average Rate T2</u>								
43	Delivery Charges	1,141,889	0.5773	1,148,743	0.5808	0.0035	6,854.08	0.6%
44	TES and ITE Deferral Credits	-	-	(6,017)	(0.0030)	(0.0030)	(6,016.78)	-
45	Gas Supply Charges	32,131,950	16.2455	32,131,950	16.2455	-	-	0.0%
46	Total Bill	33,273,839	16.8228	33,274,676	16.8232	0.0004	837.30	0.0%
47	Sales Service Impact						837.30	0.0%
48	Direct Purchase Impact						837.30	0.1%
<u>Large Rate T2</u>								
49	Delivery Charges	1,860,652	0.5028	1,870,513	0.5054	0.0027	9,861.66	0.5%
50	TES and ITE Deferral Credits	-	-	(11,258)	(0.0030)	(0.0030)	(11,258.13)	-
51	Gas Supply Charges	60,122,808	16.2455	60,122,808	16.2455	-	-	0.0%
52	Total Bill	61,983,460	16.7483	61,982,064	16.7479	(0.0004)	(1,396.46)	0.0%
53	Sales Service Impact						(1,396.46)	0.0%
54	Direct Purchase Impact						(1,396.46)	-0.1%
<u>Large Rate T3</u>								
55	Delivery Charges	3,220,759	1.1810	3,223,433	1.1820	0.0010	2,673.48	0.1%
56	TES and ITE Deferral Credits	-	-	(4,384)	(0.0016)	(0.0016)	(4,383.86)	-
57	Gas Supply Charges	44,303,428	16.2455	44,303,428	16.2455	-	-	0.0%
58	Total Bill	47,524,187	17.4265	47,522,477	17.4259	(0.0006)	(1,710.38)	0.0%
59	Sales Service Impact						(1,710.38)	0.0%
60	Direct Purchase Impact						(1,710.38)	-0.1%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).



UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 10 (2025) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	EB-2015-0187		Year 10 (2025) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> )	Delivery Rate Change (\$)	Annual Bill (%)
		Annual Bill (\$)	Unit Rate (cents/m <sup>3</sup> )	Annual Bill (\$)	Unit Rate (cents/m <sup>3</sup> )			
(a)	(b)	(c)	(d)	(e) = (d-b)	(f) = (c-a)	(g) = (f/a)		
<u>Small Rate 01</u>								
1	Delivery Charges	447	20.3307	449	20.4149	0.0842	1.85	0.4%
2	TES and ITE Deferral Credits	-	-	(0)	(0.0057)	(0.0057)	(0.12)	-
3	Gas Supply Charges	542	24.6490	542	24.6480	(0.0010)	(0.02)	0.0%
4	Total Bill	990	44.9797	991	45.0573	0.0775	1.71	0.2%
5	Sales Service Impact						1.71	0.2%
6	Bundled-T (Direct Purchase) Impact						1.71	0.2%
<u>Small Rate 10</u>								
7	Delivery Charges	4,493	7.4877	4,626	7.7102	0.2225	133.49	3.0%
8	TES and ITE Deferral Credits	-	-	(2)	(0.0036)	(0.0036)	(2.17)	-
9	Gas Supply Charges	14,789	24.6490	14,789	24.6480	(0.0010)	(0.61)	0.0%
10	Total Bill	19,282	32.1367	19,413	32.3545	0.2179	130.71	0.7%
11	Sales Service Impact						130.71	0.7%
12	Bundled-T (Direct Purchase) Impact						130.71	1.1%
<u>Large Rate 10</u>								
13	Delivery Charges	14,507	5.8027	14,857	5.9427	0.1399	349.81	2.4%
14	TES and ITE Deferral Credits	-	-	(9)	(0.0036)	(0.0036)	(9.03)	-
15	Gas Supply Charges	61,623	24.6490	61,620	24.6480	(0.0010)	(2.53)	0.0%
16	Total Bill	76,129	30.4518	76,468	30.5871	0.1353	338.24	0.4%
17	Sales Service Impact						338.24	0.4%
18	Bundled-T (Direct Purchase) Impact						338.24	0.8%
<u>Small Rate 20</u>								
19	Delivery Charges	74,678	2.4893	77,169	2.5723	0.0830	2,491.34	3.3%
20	TES and ITE Deferral Credits	-	-	(43)	(0.0014)	(0.0014)	(42.69)	-
21	Gas Supply Charges	657,718	21.9239	657,673	21.9224	(0.0015)	(45.03)	0.0%
22	Total Bill	732,396	24.4132	734,800	24.4933	0.0801	2,403.63	0.3%
23	Sales Service Impact						2,403.63	0.3%
24	Bundled-T (Direct Purchase) Impact						2,403.63	0.7%
<u>Large Rate 20</u>								
25	Delivery Charges	286,266	1.9084	293,330	1.9555	0.0471	7,064.18	2.5%
26	TES and ITE Deferral Credits	-	-	(213)	(0.0014)	(0.0014)	(213.46)	-
27	Gas Supply Charges	3,081,424	20.5428	3,081,231	20.5415	(0.0013)	(192.97)	0.0%
28	Total Bill	3,367,690	22.4513	3,374,348	22.4957	0.0444	6,657.76	0.2%
29	Sales Service Impact						6,657.76	0.2%
30	Bundled-T (Direct Purchase) Impact						6,657.76	0.4%
<u>Average Rate 25</u>								
31	Delivery Charges	63,539	2.7929	65,048	2.8592	0.0663	1,508.56	2.4%
32	TES and ITE Deferral Credits	-	-	(3)	(0.0001)	(0.0001)	(2.73)	-
33	Gas Supply Charges	368,650	16.2044	368,650	16.2044	-	-	0.0%
34	Total Bill	432,189	18.9973	433,695	19.0635	0.0662	1,505.82	0.3%
35	Sales Service Impact						1,505.82	0.3%
36	T-Service (Direct Purchase) Impact						1,505.82	2.4%
<u>Small Rate 100</u>								
37	Delivery Charges	261,451	0.9683	268,449	0.9943	0.0259	6,998.28	2.7%
38	TES and ITE Deferral Credits	-	-	(141)	(0.0005)	(0.0005)	(140.76)	-
39	Gas Supply Charges	6,150,989	22.7814	6,150,989	22.7814	-	-	0.0%
40	Total Bill	6,412,440	23.7498	6,419,298	23.7752	0.0254	6,857.52	0.1%
41	Sales Service Impact						6,857.52	0.1%
42	T-Service (Direct Purchase) Impact						6,857.52	2.6%
<u>Large Rate 100</u>								
43	Delivery Charges	2,113,543	0.8806	2,165,295	0.9022	0.0216	51,752.28	2.4%
44	TES and ITE Deferral Credits	-	-	(1,251)	(0.0005)	(0.0005)	(1,251.21)	-
45	Gas Supply Charges	53,570,299	22.3210	53,570,299	22.3210	-	-	0.0%
46	Total Bill	55,683,842	23.2016	55,734,344	23.2226	0.0210	50,501.07	0.1%
47	Sales Service Impact						50,501.07	0.1%
48	T-Service (Direct Purchase) Impact						50,501.07	2.4%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 10 (2025) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 10 (2025) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M1</u>								
1	Delivery Charges	350	15.8925	353	16.0656	0.1731	3.81	1.1%
2	TES and ITE Deferral Credits	-	-	(0)	(0.0057)	(0.0057)	(0.13)	-
3	Gas Supply Charges	357	16.2455	357	16.2455	-	-	0.0%
4	Total Bill	707	32.1380	711	32.3054	0.1674	3.68	0.5%
5	Sales Service Impact						3.68	0.5%
6	Direct Purchase Impact						3.68	1.1%
<u>Small Rate M2</u>								
7	Delivery Charges	3,343	5.5714	3,413	5.6891	0.1177	70.62	2.1%
8	TES and ITE Deferral Credits	-	-	(2)	(0.0025)	(0.0025)	(1.52)	-
9	Gas Supply Charges	9,747	16.2455	9,747	16.2455	-	-	0.0%
10	Total Bill	13,090	21.8169	13,159	21.9320	0.1152	69.10	0.5%
11	Sales Service Impact						69.10	0.5%
12	Direct Purchase Impact						69.10	2.1%
<u>Large Rate M2</u>								
13	Delivery Charges	10,801	4.3205	11,039	4.4156	0.0951	237.72	2.2%
14	TES and ITE Deferral Credits	-	-	(6)	(0.0025)	(0.0025)	(6.34)	-
15	Gas Supply Charges	40,614	16.2455	40,614	16.2455	-	-	0.0%
16	Total Bill	51,415	20.5660	51,646	20.6585	0.0926	231.39	0.5%
17	Sales Service Impact						231.39	0.5%
18	Direct Purchase Impact						231.39	2.1%
<u>Small Rate M4</u>								
19	Delivery Charges	36,618	4.1850	37,456	4.2807	0.0958	837.95	2.3%
20	TES and ITE Deferral Credits	-	-	(18)	(0.0021)	(0.0021)	(18.23)	-
21	Gas Supply Charges	142,148	16.2455	142,148	16.2455	-	-	0.0%
22	Total Bill	178,767	20.4305	179,586	20.5241	0.0937	819.72	0.5%
23	Sales Service Impact						819.72	0.5%
24	Direct Purchase Impact						819.72	2.2%
<u>Large Rate M4</u>								
25	Delivery Charges	284,379	2.3698	291,412	2.4284	0.0586	7,033.19	2.5%
26	TES and ITE Deferral Credits	-	-	(250)	(0.0021)	(0.0021)	(250.03)	-
27	Gas Supply Charges	1,949,460	16.2455	1,949,460	16.2455	-	-	0.0%
28	Total Bill	2,233,839	18.6153	2,240,622	18.6719	0.0565	6,783.16	0.3%
29	Sales Service Impact						6,783.16	0.3%
30	Direct Purchase Impact						6,783.16	2.4%
<u>Small Rate M5</u>								
31	Delivery Charges	30,072	3.6451	31,504	3.8187	0.1737	1,432.76	4.8%
32	TES and ITE Deferral Credits	-	-	(16)	(0.0020)	(0.0020)	(16.44)	-
33	Gas Supply Charges	134,025	16.2455	134,025	16.2455	-	-	0.0%
34	Total Bill	164,097	19.8906	165,513	20.0622	0.1717	1,416.32	0.9%
35	Sales Service Impact						1,416.32	0.9%
36	Direct Purchase Impact						1,416.32	4.7%
<u>Large Rate M5</u>								
37	Delivery Charges	164,701	2.5339	174,822	2.6896	0.1557	10,121.18	6.1%
38	TES and ITE Deferral Credits	-	-	(130)	(0.0020)	(0.0020)	(129.52)	-
39	Gas Supply Charges	1,055,958	16.2455	1,055,958	16.2455	-	-	0.0%
40	Total Bill	1,220,659	18.7794	1,230,650	18.9331	0.1537	9,991.66	0.8%
41	Sales Service Impact						9,991.66	0.8%
42	Direct Purchase Impact						9,991.66	6.1%
<u>Small Rate M7</u>								
43	Delivery Charges	644,105	1.7892	654,417	1.8178	0.0286	10,311.84	1.6%
44	TES and ITE Deferral Credits	-	-	(546)	(0.0015)	(0.0015)	(546.38)	-
45	Gas Supply Charges	5,848,380	16.2455	5,848,380	16.2455	-	-	0.0%
46	Total Bill	6,492,485	18.0347	6,502,251	18.0618	0.0271	9,765.46	0.2%
47	Sales Service Impact						9,765.46	0.2%
48	Direct Purchase Impact						9,765.46	1.5%
<u>Large Rate M7</u>								
49	Delivery Charges	2,451,861	4.7151	2,496,858	4.8017	0.0865	44,997.12	1.8%
50	TES and ITE Deferral Credits	-	-	(789)	(0.0015)	(0.0015)	(789.21)	-
51	Gas Supply Charges	8,447,660	16.2455	8,447,660	16.2455	-	-	0.0%
52	Total Bill	10,899,521	20.9606	10,943,729	21.0456	0.0850	44,207.91	0.4%
53	Sales Service Impact						44,207.91	0.4%
54	Direct Purchase Impact						44,207.91	1.8%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 10 (2025) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 10 (2025) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M9</u>								
1	Delivery Charges	124,052	1.7849	124,252	1.7878	0.0029	200.47	0.2%
2	TES and ITE Deferral Credits	-	-	(10)	(0.0001)	(0.0001)	(10.32)	-
3	Gas Supply Charges	1,129,062	16.2455	1,129,062	16.2455	-	-	0.0%
4	Total Bill	1,253,114	18.0304	1,253,304	18.0332	0.0027	190.16	0.0%
5	Sales Service Impact						190.16	0.0%
6	Direct Purchase Impact						190.16	0.2%
<u>Large Rate M9</u>								
7	Delivery Charges	368,423	1.8259	369,021	1.8288	0.0030	597.09	0.2%
8	TES and ITE Deferral Credits	-	-	(30)	(0.0001)	(0.0001)	(29.95)	-
9	Gas Supply Charges	3,278,017	16.2455	3,278,017	16.2455	-	-	0.0%
10	Total Bill	3,646,440	18.0714	3,647,008	18.0742	0.0028	567.14	0.0%
11	Sales Service Impact						567.14	0.0%
12	Direct Purchase Impact						567.14	0.2%
<u>Average Rate M10</u>								
13	Delivery Charges	5,121	5.4191	5,221	5.5252	0.1061	100.26	2.0%
14	TES and ITE Deferral Credits	-	-	(3)	(0.0035)	(0.0035)	(3.31)	-
15	Gas Supply Charges	15,352	16.2455	15,352	16.2455	-	-	0.0%
16	Total Bill	20,473	21.6646	20,570	21.7672	0.1026	96.96	0.5%
17	Sales Service Impact						96.96	0.5%
18	Direct Purchase Impact						96.96	1.9%
<u>Small Rate T1</u>								
19	Delivery Charges	129,998	1.7248	132,787	1.7618	0.0370	2,789.13	2.1%
20	TES and ITE Deferral Credits	-	-	(79)	(0.0011)	(0.0011)	(79.43)	-
21	Gas Supply Charges	1,224,423	16.2455	1,224,423	16.2455	-	-	0.0%
22	Total Bill	1,354,421	17.9703	1,357,131	18.0062	0.0360	2,709.70	0.2%
23	Sales Service Impact						2,709.70	0.2%
24	Direct Purchase Impact						2,709.70	2.1%
<u>Average Rate T1</u>								
25	Delivery Charges	198,345	1.7149	202,773	1.7532	0.0383	4,427.12	2.2%
26	TES and ITE Deferral Credits	-	-	(122)	(0.0011)	(0.0011)	(121.89)	-
27	Gas Supply Charges	1,878,944	16.2455	1,878,944	16.2455	-	-	0.0%
28	Total Bill	2,077,290	17.9604	2,081,595	17.9976	0.0372	4,305.23	0.2%
29	Sales Service Impact						4,305.23	0.2%
30	Direct Purchase Impact						4,305.23	2.2%
<u>Large Rate T1</u>								
31	Delivery Charges	437,508	1.7074	447,667	1.7471	0.0396	10,159.59	2.3%
32	TES and ITE Deferral Credits	-	-	(270)	(0.0011)	(0.0011)	(270.04)	-
33	Gas Supply Charges	4,162,760	16.2455	4,162,760	16.2455	-	-	0.0%
34	Total Bill	4,600,267	17.9529	4,610,157	17.9915	0.0386	9,889.55	0.2%
35	Sales Service Impact						9,889.55	0.2%
36	Direct Purchase Impact						9,889.55	2.3%
<u>Small Rate T2</u>								
37	Delivery Charges	494,864	0.8351	499,144	0.8424	0.0072	4,279.57	0.9%
38	TES and ITE Deferral Credits	-	-	(143)	(0.0002)	(0.0002)	(142.63)	-
39	Gas Supply Charges	9,626,433	16.2455	9,626,433	16.2455	-	-	0.0%
40	Total Bill	10,121,298	17.0806	10,125,435	17.0876	0.0070	4,136.94	0.0%
41	Sales Service Impact						4,136.94	0.0%
42	Direct Purchase Impact						4,136.94	0.8%
<u>Average Rate T2</u>								
43	Delivery Charges	1,141,889	0.5773	1,149,152	0.5810	0.0037	7,263.36	0.6%
44	TES and ITE Deferral Credits	-	-	(476)	(0.0002)	(0.0002)	(476.07)	-
45	Gas Supply Charges	32,131,950	16.2455	32,131,950	16.2455	-	-	0.0%
46	Total Bill	33,273,839	16.8228	33,280,626	16.8263	0.0034	6,787.29	0.0%
47	Sales Service Impact						6,787.29	0.0%
48	Direct Purchase Impact						6,787.29	0.6%
<u>Large Rate T2</u>								
49	Delivery Charges	1,860,652	0.5028	1,871,241	0.5056	0.0029	10,589.80	0.6%
50	TES and ITE Deferral Credits	-	-	(891)	(0.0002)	(0.0002)	(890.79)	-
51	Gas Supply Charges	60,122,808	16.2455	60,122,808	16.2455	-	-	0.0%
52	Total Bill	61,983,460	16.7483	61,993,159	16.7509	0.0026	9,699.01	0.0%
53	Sales Service Impact						9,699.01	0.0%
54	Direct Purchase Impact						9,699.01	0.5%
<u>Large Rate T3</u>								
55	Delivery Charges	3,220,759	1.1810	3,226,230	1.1830	0.0020	5,470.56	0.2%
56	TES and ITE Deferral Credits	-	-	(578)	(0.0002)	(0.0002)	(578.20)	-
57	Gas Supply Charges	44,303,428	16.2455	44,303,428	16.2455	-	-	0.0%
58	Total Bill	47,524,187	17.4265	47,529,080	17.4283	0.0018	4,892.36	0.0%
59	Sales Service Impact						4,892.36	0.0%
60	Direct Purchase Impact						4,892.36	0.2%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
Calculation of Year 15 (2030) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union North

Line No.	Particulars	EB-2015-0187 2015 Jul QRAM Rates (1)		Year 15 (2030) Community Expansion Proposal		Impact		
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)	Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
<u>Small Rate 01</u>								
1	Delivery Charges	447	20.3307	449	20.4023	0.0716	1.58	0.4%
2	TES and ITE Deferral Credits	-	-	-	-	-	-	-
3	Gas Supply Charges	542	24.6490	542	24.6492	0.0002	0.00	0.0%
4	Total Bill	990	44.9797	991	45.0515	0.0718	1.58	0.2%
5	Sales Service Impact						1.58	0.2%
6	Bundled-T (Direct Purchase) Impact						1.58	0.2%
<u>Small Rate 10</u>								
7	Delivery Charges	4,493	7.4877	4,616	7.6935	0.2059	123.52	2.7%
8	TES and ITE Deferral Credits	-	-	-	-	-	-	-
9	Gas Supply Charges	14,789	24.6490	14,790	24.6492	0.0002	0.11	0.0%
10	Total Bill	19,282	32.1367	19,406	32.3427	0.2060	123.63	0.6%
11	Sales Service Impact						123.63	0.6%
12	Bundled-T (Direct Purchase) Impact						123.63	1.0%
<u>Large Rate 10</u>								
13	Delivery Charges	14,507	5.8027	14,830	5.9322	0.1294	323.62	2.2%
14	TES and ITE Deferral Credits	-	-	-	-	-	-	-
15	Gas Supply Charges	61,623	24.6490	61,623	24.6492	0.0002	0.47	0.0%
16	Total Bill	76,129	30.4518	76,453	30.5814	0.1296	324.09	0.4%
17	Sales Service Impact						324.09	0.4%
18	Bundled-T (Direct Purchase) Impact						324.09	0.7%
<u>Small Rate 20</u>								
19	Delivery Charges	74,678	2.4893	76,993	2.5664	0.0772	2,315.06	3.1%
20	TES and ITE Deferral Credits	-	-	-	-	-	-	-
21	Gas Supply Charges	657,718	21.9239	657,697	21.9232	(0.0007)	(21.84)	0.0%
22	Total Bill	732,396	24.4132	734,690	24.4897	0.0764	2,293.22	0.3%
23	Sales Service Impact						2,293.22	0.3%
24	Bundled-T (Direct Purchase) Impact						2,293.22	0.6%
<u>Large Rate 20</u>								
25	Delivery Charges	286,266	1.9084	292,831	1.9522	0.0438	6,565.03	2.3%
26	TES and ITE Deferral Credits	-	-	-	-	-	-	-
27	Gas Supply Charges	3,081,424	20.5428	3,081,330	20.5422	(0.0006)	(93.61)	0.0%
28	Total Bill	3,367,690	22.4513	3,374,161	22.4944	0.0431	6,471.42	0.2%
29	Sales Service Impact						6,471.42	0.2%
30	Bundled-T (Direct Purchase) Impact						6,471.42	0.4%
<u>Average Rate 25</u>								
31	Delivery Charges	63,539	2.7929	64,949	2.8549	0.0620	1,410.07	2.2%
32	TES and ITE Deferral Credits	-	-	-	-	-	-	-
33	Gas Supply Charges	368,650	16.2044	368,650	16.2044	-	-	0.0%
34	Total Bill	432,189	18.9973	433,599	19.0593	0.0620	1,410.07	0.3%
35	Sales Service Impact						1,410.07	0.3%
36	T-Service (Direct Purchase) Impact						1,410.07	2.2%
<u>Small Rate 100</u>								
37	Delivery Charges	261,451	0.9683	267,946	0.9924	0.0241	6,495.00	2.5%
38	TES and ITE Deferral Credits	-	-	-	-	-	-	-
39	Gas Supply Charges	6,150,989	22.7814	6,150,989	22.7814	-	-	0.0%
40	Total Bill	6,412,440	23.7498	6,418,935	23.7738	0.0241	6,495.00	0.1%
41	Sales Service Impact						6,495.00	0.1%
42	T-Service (Direct Purchase) Impact						6,495.00	2.5%
<u>Large Rate 100</u>								
43	Delivery Charges	2,113,543	0.8806	2,161,546	0.9006	0.0200	48,003.00	2.3%
44	TES and ITE Deferral Credits	-	-	-	-	-	-	-
45	Gas Supply Charges	53,570,299	22.3210	53,570,299	22.3210	-	-	0.0%
46	Total Bill	55,683,842	23.2016	55,731,845	23.2216	0.0200	48,003.00	0.1%
47	Sales Service Impact						48,003.00	0.1%
48	T-Service (Direct Purchase) Impact						48,003.00	2.3%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 15 (2030) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 15 (2030) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M1</u>								
1	Delivery Charges	350	15.8925	353	16.0453	0.1528	3.36	1.0%
2	TES and ITE Deferral Credits	-	-	-	-	-	-	-
3	Gas Supply Charges	357	16.2455	357	16.2455	-	-	0.0%
4	Total Bill	707	32.1380	710	32.2908	0.1528	3.36	0.5%
5	Sales Service Impact						3.36	0.5%
6	Direct Purchase Impact						3.36	1.0%
<u>Small Rate M2</u>								
7	Delivery Charges	3,343	5.5714	3,408	5.6807	0.1094	65.63	2.0%
8	TES and ITE Deferral Credits	-	-	-	-	-	-	-
9	Gas Supply Charges	9,747	16.2455	9,747	16.2455	-	-	0.0%
10	Total Bill	13,090	21.8169	13,156	21.9262	0.1094	65.63	0.5%
11	Sales Service Impact						65.63	0.5%
12	Direct Purchase Impact						65.63	2.0%
<u>Large Rate M2</u>								
13	Delivery Charges	10,801	4.3205	11,022	4.4088	0.0883	220.82	2.0%
14	TES and ITE Deferral Credits	-	-	-	-	-	-	-
15	Gas Supply Charges	40,614	16.2455	40,614	16.2455	-	-	0.0%
16	Total Bill	51,415	20.5660	51,636	20.6543	0.0883	220.82	0.4%
17	Sales Service Impact						220.82	0.4%
18	Direct Purchase Impact						220.82	2.0%
<u>Small Rate M4</u>								
19	Delivery Charges	36,618	4.1850	37,397	4.2739	0.0889	778.27	2.1%
20	TES and ITE Deferral Credits	-	-	-	-	-	-	-
21	Gas Supply Charges	142,148	16.2455	142,148	16.2455	-	-	0.0%
22	Total Bill	178,767	20.4305	179,545	20.5194	0.0889	778.27	0.4%
23	Sales Service Impact						778.27	0.4%
24	Direct Purchase Impact						778.27	2.1%
<u>Large Rate M4</u>								
25	Delivery Charges	284,379	2.3698	290,914	2.4243	0.0545	6,534.60	2.3%
26	TES and ITE Deferral Credits	-	-	-	-	-	-	-
27	Gas Supply Charges	1,949,460	16.2455	1,949,460	16.2455	-	-	0.0%
28	Total Bill	2,233,839	18.6153	2,240,374	18.6698	0.0545	6,534.60	0.3%
29	Sales Service Impact						6,534.60	0.3%
30	Direct Purchase Impact						6,534.60	2.3%
<u>Small Rate M5</u>								
31	Delivery Charges	30,072	3.6451	31,442	3.8112	0.1661	1,370.45	4.6%
32	TES and ITE Deferral Credits	-	-	-	-	-	-	-
33	Gas Supply Charges	134,025	16.2455	134,025	16.2455	-	-	0.0%
34	Total Bill	164,097	19.8906	165,467	20.0567	0.1661	1,370.45	0.8%
35	Sales Service Impact						1,370.45	0.8%
36	Direct Purchase Impact						1,370.45	4.6%
<u>Large Rate M5</u>								
37	Delivery Charges	164,701	2.5339	174,408	2.6832	0.1493	9,707.02	5.9%
38	TES and ITE Deferral Credits	-	-	-	-	-	-	-
39	Gas Supply Charges	1,055,958	16.2455	1,055,958	16.2455	-	-	0.0%
40	Total Bill	1,220,659	18.7794	1,230,366	18.9287	0.1493	9,707.02	0.8%
41	Sales Service Impact						9,707.02	0.8%
42	Direct Purchase Impact						9,707.02	5.9%
<u>Small Rate M7</u>								
43	Delivery Charges	644,105	1.7892	653,756	1.8160	0.0268	9,650.16	1.5%
44	TES and ITE Deferral Credits	-	-	-	-	-	-	-
45	Gas Supply Charges	5,848,380	16.2455	5,848,380	16.2455	-	-	0.0%
46	Total Bill	6,492,485	18.0347	6,502,136	18.0615	0.0268	9,650.16	0.1%
47	Sales Service Impact						9,650.16	0.1%
48	Direct Purchase Impact						9,650.16	1.5%
<u>Large Rate M7</u>								
49	Delivery Charges	2,451,861	4.7151	2,494,076	4.7963	0.0812	42,214.88	1.7%
50	TES and ITE Deferral Credits	-	-	-	-	-	-	-
51	Gas Supply Charges	8,447,660	16.2455	8,447,660	16.2455	-	-	0.0%
52	Total Bill	10,899,521	20.9606	10,941,736	21.0418	0.0812	42,214.88	0.4%
53	Sales Service Impact						42,214.88	0.4%
54	Direct Purchase Impact						42,214.88	1.7%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED  
 Impacts of the 29 Potential Community Expansion Projects Including TES and ITE Deferral Credits  
 Calculation of Year 15 (2030) Sales Service and Direct Purchase Impacts for Typical Small and Large Customers - Union South

Line No.	Particulars	EB-2015-0187		Year 15 (2030) Community		Impact		
		2015 Jul QRAM Rates (1)		Expansion Proposal		Unit Rate (cents/m <sup>3</sup> ) (e) = (d-b)	Delivery Rate Change (\$) (f) = (c-a)	Annual Bill (%) (g) = (f/a)
		Annual Bill (\$) (a)	Unit Rate (cents/m <sup>3</sup> ) (b)	Annual Bill (\$) (c)	Unit Rate (cents/m <sup>3</sup> ) (d)			
<u>Small Rate M9</u>								
1	Delivery Charges	124,052	1.7849	124,313	1.7887	0.0038	261.43	0.2%
2	TES and ITE Deferral Credits	-	-	-	-	-	-	-
3	Gas Supply Charges	1,129,062	16.2455	1,129,062	16.2455	-	-	0.0%
4	Total Bill	1,253,114	18.0304	1,253,375	18.0342	0.0038	261.43	0.0%
5	Sales Service Impact						261.43	0.0%
6	Direct Purchase Impact						261.43	0.2%
<u>Large Rate M9</u>								
7	Delivery Charges	368,423	1.8259	369,202	1.8297	0.0039	778.64	0.2%
8	TES and ITE Deferral Credits	-	-	-	-	-	-	-
9	Gas Supply Charges	3,278,017	16.2455	3,278,017	16.2455	-	-	0.0%
10	Total Bill	3,646,440	18.0714	3,647,219	18.0752	0.0039	778.64	0.0%
11	Sales Service Impact						778.64	0.0%
12	Direct Purchase Impact						778.64	0.2%
<u>Average Rate M10</u>								
13	Delivery Charges	5,121	5.4191	5,224	5.5279	0.1088	102.82	2.0%
14	TES and ITE Deferral Credits	-	-	-	-	-	-	-
15	Gas Supply Charges	15,352	16.2455	15,352	16.2455	-	-	0.0%
16	Total Bill	20,473	21.6646	20,576	21.7734	0.1088	102.82	0.5%
17	Sales Service Impact						102.82	0.5%
18	Direct Purchase Impact						102.82	2.0%
<u>Small Rate T1</u>								
19	Delivery Charges	129,998	1.7248	132,591	1.7592	0.0344	2,592.68	2.0%
20	TES and ITE Deferral Credits	-	-	-	-	-	-	-
21	Gas Supply Charges	1,224,423	16.2455	1,224,423	16.2455	-	-	0.0%
22	Total Bill	1,354,421	17.9703	1,357,014	18.0047	0.0344	2,592.68	0.2%
23	Sales Service Impact						2,592.68	0.2%
24	Direct Purchase Impact						2,592.68	2.0%
<u>Average Rate T1</u>								
25	Delivery Charges	198,345	1.7149	202,460	1.7505	0.0356	4,114.81	2.1%
26	TES and ITE Deferral Credits	-	-	-	-	-	-	-
27	Gas Supply Charges	1,878,944	16.2455	1,878,944	16.2455	-	-	0.0%
28	Total Bill	2,077,290	17.9604	2,081,405	17.9960	0.0356	4,114.81	0.2%
29	Sales Service Impact						4,114.81	0.2%
30	Direct Purchase Impact						4,114.81	2.1%
<u>Large Rate T1</u>								
31	Delivery Charges	437,508	1.7074	446,949	1.7443	0.0368	9,441.87	2.2%
32	TES and ITE Deferral Credits	-	-	-	-	-	-	-
33	Gas Supply Charges	4,162,760	16.2455	4,162,760	16.2455	-	-	0.0%
34	Total Bill	4,600,267	17.9529	4,609,709	17.9898	0.0368	9,441.87	0.2%
35	Sales Service Impact						9,441.87	0.2%
36	Direct Purchase Impact						9,441.87	2.2%
<u>Small Rate T2</u>								
37	Delivery Charges	494,864	0.8351	499,015	0.8421	0.0070	4,150.36	0.8%
38	TES and ITE Deferral Credits	-	-	-	-	-	-	-
39	Gas Supply Charges	9,626,433	16.2455	9,626,433	16.2455	-	-	0.0%
40	Total Bill	10,121,298	17.0806	10,125,448	17.0876	0.0070	4,150.36	0.0%
41	Sales Service Impact						4,150.36	0.0%
42	Direct Purchase Impact						4,150.36	0.8%
<u>Average Rate T2</u>								
43	Delivery Charges	1,141,889	0.5773	1,149,115	0.5810	0.0037	7,226.12	0.6%
44	TES and ITE Deferral Credits	-	-	-	-	-	-	-
45	Gas Supply Charges	32,131,950	16.2455	32,131,950	16.2455	-	-	0.0%
46	Total Bill	33,273,839	16.8228	33,281,065	16.8265	0.0037	7,226.12	0.0%
47	Sales Service Impact						7,226.12	0.0%
48	Direct Purchase Impact						7,226.12	0.6%
<u>Large Rate T2</u>								
49	Delivery Charges	1,860,652	0.5028	1,871,306	0.5056	0.0029	10,654.51	0.6%
50	TES and ITE Deferral Credits	-	-	-	-	-	-	-
51	Gas Supply Charges	60,122,808	16.2455	60,122,808	16.2455	-	-	0.0%
52	Total Bill	61,983,460	16.7483	61,994,115	16.7511	0.0029	10,654.51	0.0%
53	Sales Service Impact						10,654.51	0.0%
54	Direct Purchase Impact						10,654.51	0.6%
<u>Large Rate T3</u>								
55	Delivery Charges	3,220,759	1.1810	3,227,974	1.1837	0.0026	7,215.12	0.2%
56	TES and ITE Deferral Credits	-	-	-	-	-	-	-
57	Gas Supply Charges	44,303,428	16.2455	44,303,428	16.2455	-	-	0.0%
58	Total Bill	47,524,187	17.4265	47,531,402	17.4292	0.0026	7,215.12	0.0%
59	Sales Service Impact						7,215.12	0.0%
60	Direct Purchase Impact						7,215.12	0.2%

Notes:

(1) Reflects Board-approved rates per Appendix A in Union's 2015 Rate Order filing (EB-2015-0187).

UNION GAS LIMITED

Undertaking Response  
To Mr. Rubenstein

To provide charts for this project.

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Union’s Community Expansion Project Proposal is a direct response to the government’s desire to complete the maximum number of expansion projects without the need for government funding and, the Board’s invitation to propose plans to support that objective. The need for such a proposal was unknown at the time of Union’s current IRM framework approval. Although the intent may be similar, the capital pass-through mechanism proposed in this Application does not, nor was it intended to, meet all of the specific criteria of the IRM capital pass-through mechanism.

**Capital Pass-through Mechanism Criteria**

	<b>Criterion</b>	<b>Applicability</b>
i)	A minimum increase, or a minimum decrease, of \$5 million in net delivery revenue requirement for a single new project (the “Rate Impact Threshold”).	No specific Community Expansion Project proposed in this Application meets this criterion.
ii)	The capital cost of the project must exceed \$50 million.	No specific Community Expansion Project proposed in this Application meets this criterion.
iii)	The project is outside the base rates on which the IRM is set.	Union’s Community Expansion Project proposal was not included in 2013 base rates.
iv)	The project must be needed to serve customers and/or to maintain system safety, reliability or integrity, and cannot reasonably be delayed, and is demonstrated to be the most cost effective manner of achieving the project’s objective relative to the reasonably available alternatives.	The need behind Union’s Community Expansion Project Proposal is in response to the Ontario Energy Board’s (“the Board”) initiative to address the Ontario government’s desire to expand natural gas distribution systems to communities that do not have access to natural gas as soon as possible.
v)	The project will be identified to stakeholders and the Board as soon as possible, including in that year’s IRM stakeholder review session where practical.	Union identified the potential for a Community Expansion Program in the IRM stakeholder meetings held on April 9, 2014 and April 8, 2015.
vi)	The project will be subject to a full regulatory review; for any project that requires leave-to-construct approval of the Board, the full regulatory review in which the applicant must demonstrate need, safety or reliability purposes, and economic viability prior to inclusion in rates will be conducted in that proceeding. For any project that does not require Leave-to-Construct approval of the Board, Union commits to filing its annual rate adjustment application with the Board by July 1 of the year prior to the rate impacts of the project going into effect, to allow sufficient	This Application involves a full regulatory review of Union’s Community Expansion Project Proposal. This review includes the rate recovery of the net revenue requirement for the four proposed expansion projects as well as leave to construct (“LTC”) for those projects that meet the Board’s LTC criteria.  Union will file LTC Applications for future Community Expansion Projects including requests for approval of the net revenue requirement associated with these Projects. Union will also apply for franchise and certificate applications for future Projects, if necessary. For future Projects that do not require LTC approval, Union will seek Board approval of the forecast net revenue

	time for a full regulatory review of the project in its rates application.	requirements.
vii)	Union will allocate the net revenue requirement using EB-2011-0210 Board-approved cost allocation methodologies. Any party, including Union, may take any position with respect to the proposed allocation for any particular capital project during review of the project, or its rate impacts, by the Board.	Union has allocated the net revenue requirement using EB-2011-0210 Board-approved cost allocation methodologies.
viii)	The project will include a deferral account request to capture any differences between the forecast annual net delivery revenue requirement and the actual net delivery revenue requirement for each year of the IRM for which the project is included in rates.	This Application includes a request for a "Community Expansion Project Costs" deferral account. Please see Exhibit A, Tab 1, Appendix G, p.1.