

July 10, 2015

BY COURIER & RESS

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

**RE: EB-2015-0029 – Union Gas Limited (“Union”) – 2015-2020 DSM Plan Technical Conference Undertaking Responses**

Dear Ms. Walli,

Please find attached Union’s responses to the following technical conference undertakings received in the above case: JT2.2, JT2.4, JT2.6, JT2.9, JT2.10, JT2.11, JT2.12, JT2.14, JT2.15, JT2.16, JT2.17, JT2.18, JT2.19, JT2.20, JT2.21, JT2.22 and JT2.23.

Union also filed two Excel files (JT2.14 Excel Attachment 1 and JT2.16 Excel Attachment 1) on the RESS.

If you have any questions with respect to this submission please contact me at 519-436-5334.

Yours truly,

*[Original Signed by]*

Vanessa Innis  
Manager, Regulatory Initiatives

Encl.

cc: Lawrie Gluck, Board Staff  
Alex Smith, Torys  
All Intervenors (EB-2015-0029)

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Elson ("ED")

Union to provide the gross TRC number.

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Gross TRC for the Large Volume (Rate T1, Rate T2, Rate 100) Program in 2013 was \$549,133,488. Net TRC was \$252,262,463 as shown at Exhibit A, Tab 3, Appendix B, p. 200.

UNION GAS LIMITED

Undertaking of Ms. Brooks

To Mr. Gardner ("LIEN")

To provide the costs of liability insurance the delivery agents would incur.

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Union has had further discussions with one of its delivery agents and confirmed that the costs outlined in Exhibit B.T5.Union.LIEN.6, Table 1 are approximately the total incremental costs for a direct install of kitchen and bathroom aerators in single family homes. Upon further review the delivery agent has indicated incremental liability insurance is not required as their current insurance will suffice covering any costs that may arise from the installation of kitchen and bathroom aerators.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Poch ("GEC")

To clarify the units, whether they are nominal or real; to clarify whether the costs are avoided T&D or Just D.

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The avoided costs outlined in Exhibit B.T9.Union.GEC.17, Attachment 1 are in nominal  $\$/\text{m}^3$ . The reference to T&D Avoided Costs within the spreadsheet should be changed to Distribution Avoided Costs.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Chernick ("GEC")

Union to provide the spreadsheet that explains the calculation on Page 4 of GEC.21.

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The calculation on p. 4 of Exhibit B.T9.Union.GEC.21 is in reference to the calculation of long-term commodity price escalators. This calculation is presented at Exhibit B.T9.Union.GEC.21 Excel Attachment 1. Specifically, the calculation is in Step 6 within this attachment, starting in cell E41.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Chernick (“GEC”)

To explain how intra-month variation is accounted for in the sendout model.

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There is no intra-month variation in the SENDOUT model as there is no daily modeling done within the model. Demands are input to the model as a monthly number and outputs from the model are on a monthly basis. Commodity prices entered into the model are on a monthly basis. The commodity prices are calculated based on the same methodology as used for Union’s Quarterly Rate Adjustment Mechanism (“QRAM”) filings (the 21 day average of the monthly NYMEX strip over the term of the plan).

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Chernick (“GEC”)

Union to provide sendout model outputs on a best efforts basis.

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Union will not provide the output of the SENDOUT model. The output of the SENDOUT model totals approximately 42,000 lines of information, which is used for Union’s annual Gas Supply Planning process. Union’s Gas Supply Planning process as well as key inputs and outputs of the plan are described in detail in the Gas Supply Memorandum which was filed in both 2014 (EB-2014-0145, Exhibit A, Tab 4, Appendix C) and 2015 (EB-2015-0010, Exhibit A, Tab 5). In its response to Exhibit B.T9.Union.GEC.65, Union provided the same Excel files that were provided to ICF in order for ICF to evaluate Union’s avoided costs for the report filed at Exhibit A, Tab 2, Appendix C.

Union has also provided further detail on avoided commodity costs in its response to Exhibit JT2.7.

UNION GAS LIMITED

Undertaking of Mr. Dibaji  
To Ms. Girvan ("CCC")

To confirm whether, without the 15 percent non-energy benefit adder, the Home Reno Rebate Program is not TRC positive.

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Confirmed. The 2016 Home Reno Rebate offering TRC ratio would equate to 0.65 using the 2014 avoided costs. The TRC ratio is 1.48 using the 2016 avoided costs (Exhibit A, Tab 3, Appendix A, p. 23, Table 7).

UNION GAS LIMITED

Undertaking of Mr. Dibaji  
To Mr. Poch ("GEC")

Union to provide documentation supporting targets in areas of per-unit rebates, total rebates per-measure, and non-rebate costs per program, unless that has already been provided elsewhere.

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Please see Exhibit JT2.14 Excel Attachment 1.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Poch ("GEC")

Union to use best efforts to obtain any market size data that Marbek developed or relied on in providing their earlier study for Union.

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Union spoke with staff at ICF Marbek (now ICF International) regarding any market size data available from the 2008 Achievable Potential study, further to the documents provided in the response to Exhibit B.T2.Union.GEC.6. Staff at ICF International were not able to provide any further market size data than what has already been provided, either in the response to Exhibit B.T2.Union.GEC.6, or in the study filed in Union's 2012-2014 DSM Plan (EB-2011-0327, Exhibit A, Tab 1, Appendix K). Any further analysis on the 2008 study would require time and resources, and could not be completed in time to inform intervenor evidence and the hearing. The 2011 update was an economic update and did not include any market size data updates.

UNION GAS LIMITED

Undertaking of Ms. Brooks  
To Mr. Neme ("GEC") and Mr. Shepherd ("SEC")

Union to provide data in a single excel file format.

To advise the actual average paid for 2012 to 2014, and budgeted average to be paid in 2016 to 2020.

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Please see Exhibit JT2.16 Excel Attachment 1 for the tables from Exhibit B.T5.Union.GEC.45 in Excel format.

Please see Attachment 1 for the actual 2012 to 2014 average incentive paid and 2016 to 2020 average incentive budgeted, which is also included in Exhibit JT2.16 Excel Attachment 1.

New Construction/Retrofit	Measure Name	2012 Average Incentive Paid	2013 Average Incentive Paid	2014 Average Incentive Paid	2016 Average Incentive Budgeted	2017 Average Incentive Budgeted	2018 Average Incentive Budgeted	2019 Average Incentive Budgeted	2020 Average Incentive Budgeted
Retrofit	Air Curtains - Pedestrian Single Door - ≥ 46ft² & < 96ft²	\$150	\$250	\$250	\$600	\$600	\$600	\$600	\$600
Retrofit	Air Curtains - Pedestrian Double Door - ≥ 96ft²	-	\$500	\$500	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
New Const/Retrofit	Air Curtains - Shipping and Receiving - ≥ 100ft²	\$1,200	\$1,500	\$1,500	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500
New Const/Retrofit	Air Curtains - Shipping and Receiving - ≥ 80ft² & < 100ft²	-	\$1,000	\$1,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Retrofit	Air Curtains - Shipping and Receiving - ≥ 64ft² & < 80ft²	\$600	\$1,000	-	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	Condensing Boiler - Space Heating- 1000 Mbtu/hr and up	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
New Const/Replace	Condensing Boiler - Space Heating 300 to 999 Mbtu/hr	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
New Construction	Condensing Boiler - Space Heating (200 to 299 Mbtu/h)-90% AFUE-New	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600
Replacement	Condensing Boiler - Space Heating (200 to 299 Mbtu/h)-90% AFUE-Existing	-	\$600	\$600	\$600	\$600	\$600	\$600	\$600
New Const/Replace	Condensing Boiler - DHW (1000 to 1499 Mbtu/h)-90% or greater AFUE-New/Existing	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
New Const/Replace	Condensing Boiler - DHW (300 to 599 Mbtu/h)-90% or greater AFUE-New/Existing	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
New Construction	Condensing Boiler - DHW (100 to 199 Mbtu/h)-90% or greater AFUE-New	-	\$600	\$600	\$600	\$600	\$600	\$600	\$600
Replacement	Condensing Boiler - DHW (200 to 299 Mbtu/h)-90% or greater AFUE- Existing	-	\$600	\$600	\$600	\$600	\$600	\$600	\$600
New Const/Replace	Condensing Gas Water Heater	\$150	\$350	\$350	\$500	\$500	-	-	-
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Imp efficiency 1000 -4999 cfm	\$300	\$500	\$500	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Imp efficiency ≥ 5000 cfm	\$1,000	\$1,200	\$1,200	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Efficiency + 2 speed 1000 -4999 cfm	-	\$1,000	-	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Efficiency + 2 speed ≥ 5000 cfm <sup>15</sup>	-	-	\$1,800	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Efficiency + VFDs 1000 -4999 cfm	\$1,200	\$1,400	-	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	Condensing Rooftop Units (MUA) Multifamily & Healthcare Efficiency + VFDs ≥ 5000 cfm <sup>15</sup>	-	\$2,600	\$2,600	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency Imp efficiency 1000 -4999 cfm	\$300	-	\$500	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency Imp efficiency ≥ 5000 cfm	\$1,000	\$1,200	-	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency + 2 speed 1000 -4999 cfm	-	\$1,000	\$1,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency + 2 speed ≥ 5000 cfm	\$1,600	\$1,800	-	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency + VFDs >1000 -4999 cfm	-	\$1,400	\$1,400	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	Condensing Rooftop Units (MUA) All other Commercial Efficiency + VFDs ≥ 5000 cfm	\$2,400	\$2,600	\$2,600	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
New Const/Replace	DCKV Fast Casual (< 5000 cfm)	\$1,000	\$1,200	\$1,200	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	DCKV Dinner House (10000 - 15000 cfm)	\$3,500	\$4,000	-	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
New Const/Replace	DCKV Full Menu (5000 - 9999 cfm)	\$2,500	\$3,000	\$3,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
New Const/Replace	DCV Office – RTU/MUA < 2,500 sq ft ventilated with CO2 Sensor - (DCV) controls with CO2 sensors -New w/o maintenance plan	-	-	\$100	\$400	\$400	\$400	\$400	\$400
New Const/Replace	DCV Retail - RTU/MUA < 5,000 sq ft ventilated with CO2 Sensor- (DCV) controls with CO2 sensors -New w/o maintenance plan	-	-	\$150	\$400	\$400	\$400	\$400	\$400
New Const/Replace	DCV Retail – RTU/MUA ≥ 5,000 sq ft ventilated with CO2 Sensor- (DCV) controls with CO2 sensors -New w/o maintenance plan	-	-	\$350	\$400	\$400	\$400	\$400	\$400
Retrofit	DCV Office – RTU/MUA < 2,500 sq ft ventilated with CO2 Sensor - (DCV) controls with CO2 sensors -Retrofit w/o maintenance plan	-	-	\$100	\$500	\$500	\$500	\$500	\$500
Retrofit	DCV Office – RTU/MUA ≥ 2,500 sq ft with CO2 Sensor - (DCV) controls with CO2 sensors -Retrofit w/o maintenance plan	-	-	\$200	\$500	\$500	\$500	\$500	\$500
Retrofit	DCV Retail - RTU/MUA < 5,000 sq ft ventilated with CO2 Sensor- (DCV) controls with CO2 sensors -Retrofit w/o maintenance plan	-	-	\$150	\$500	\$500	\$500	\$500	\$500
Retrofit	DCV Retail – RTU/MUA ≥ 5,000 sq ft ventilated with CO2 Sensor- (DCV) controls with CO2 sensors -Retrofit w/o maintenance plan	-	-	\$350	\$500	\$500	\$500	\$500	\$500
New Const/Retrofit	Destratification Fan	\$1,300	\$1,300	\$1,300	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
New Const/Replace	Energy Star Dishwasher - Rack Conveyor - Multi Tank - High Temperature - Purchase	-	-	\$400	\$450	\$450	\$450	\$450	\$450
New Const/Replace	Energy Star Dishwasher - Rack Conveyor - Single Tank - High Temperature - Purchase	\$400	\$400	\$400	\$450	\$450	\$450	\$450	\$450
New Const/Replace	Energy Star Dishwasher - Stationary Rack - Door Type - High Temperature - Purchase	\$100	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Dishwasher - Stationary Rack - Door Type - Low Temperature - Purchase	\$100	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Dishwasher - Stationary Rack - Single Rack - High Temperature - Purchase	-	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Dishwasher - Stationary Rack - Single Rack - Low Temperature - Purchase	\$100	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Dishwasher - Undercounter - High Temperature - Purchase	\$100	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Dishwasher - Undercounter - Low Temperature - Purchase	\$100	\$100	\$100	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Convection Oven	\$200	\$200	-	\$250	\$250	\$250	\$250	\$250
New Const/Replace	Energy Star Steam Cooker (boiler-based)	-	\$200	-	\$250	\$250	\$250	\$250	\$250
New Const/Replace	Energy Star Fryer - from Final TRM sub doc	\$200	\$200	\$200	\$250	\$250	\$250	\$250	\$250
New Construction	ERV 1 - up to 2000CFM - Multi Family, Health Care, Nursing <sup>29</sup>	\$600	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Retrofit	ERV 1 - up to 2000CFM - Multi Family, Health Care, Nursing <sup>30</sup>	-	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
New Construction	ERV 2 - over 2000CFM - Multi Family, Health Care, Nursing <sup>31</sup>	\$1,500	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Retrofit	ERV 2 - over 2000CFM - Multi Family, Health Care, Nursing <sup>32</sup>	\$1,500	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Construction	ERV 3 - up to 2000CFM - Hotel, Restaurant, Retail <sup>33</sup>	\$600	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Retrofit	ERV 3 - up to 2000CFM - Hotel, Restaurant, Retail <sup>34</sup>	-	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
New Construction	ERV 4 - over 2000CFM - Hotel, Restaurant, Retail <sup>35</sup>	\$1,500	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Retrofit	ERV 4 - over 2000CFM - Hotel, Restaurant, Retail <sup>36</sup>	\$1,500	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Construction	ERV 5 - up to 2000CFM - All Other Commercial <sup>37</sup>	\$600	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Retrofit	ERV 5 - up to 2000CFM - All Other Commercial <sup>38</sup>	-	\$600	\$600	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
New Construction	ERV 6 - over 2000CFM - All Other Commercial <sup>39</sup>	\$1,500	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Retrofit	ERV 6 - over 2000CFM - All Other Commercial <sup>40</sup>	-	\$1,500	\$1,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Construction	HRV 500 to 2,000cfm-Hotel, Restaurant, Retail, Rec <sup>44</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
Retrofit	HRV 500 to 2,000cfm-Hotel, Restaurant, Retail, Rec <sup>45</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
New Construction	HRV >2,000cfm-Hotel, Restaurant, Retail, Rec <sup>41</sup>	\$700	-	\$700	\$750	\$750	\$750	\$750	\$750
Retrofit	HRV >2,000cfm-Hotel, Restaurant, Retail, Rec <sup>42</sup>	-	\$700	\$700	\$750	\$750	\$750	\$750	\$750
New Construction	HRV 500 to 2,000cfm - All other commercial <sup>43</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500

Retrofit	HRV 500 to 2,000cfm - All other commercial <sup>43</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
New Construction	HRV ≥2,000cfm-All other commercial <sup>43</sup>	\$700	\$700	\$700	\$750	\$750	\$750	\$750	\$750
Retrofit	HRV ≥2,000cfm-All other commercial <sup>43</sup>	\$700	\$700	\$700	\$750	\$750	\$750	\$750	\$750
New Construction	HRV ≥2,000cfm- Multi Family, Health Care, Nursing <sup>46</sup>	-	-	-	\$750	\$750	\$750	\$750	\$750
Retrofit	HRV ≥2,000cfm- Multi Family, Health Care, Nursing <sup>46</sup>	-	-	-	\$750	\$750	\$750	\$750	\$750
New Construction	HRV 500 to 2000cfm- Multi Family, Health Care, Nursing <sup>46</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
Retrofit	HRV 500 to 2000cfm- Multi Family, Health Care, Nursing <sup>47</sup>	\$400	\$400	\$400	\$500	\$500	\$500	\$500	\$500
New Const/Replace	Infrared Heating 1- 20 to 99 MBtu/hr 1-Stage	-	\$300	\$300	\$300	\$300	\$300	\$300	\$300
New Const/Replace	Infrared Heating 2- 100-300 MBtu/hr 1-Stage	-	\$300	\$300	\$300	\$300	\$300	\$300	\$300
New Const/Replace	Infrared Heating 3- 20 to 99 MBtu/hr 2-Stage	-	\$300	\$300	\$400	\$400	\$400	\$400	\$400
New Const/Replace	Infrared Heating 4- 100-300 MBtu/hr 2-Stage	-	\$300	\$300	\$400	\$400	\$400	\$400	\$400
New Const/Retrofit	Ozone WE =< 60 lbs cap & 100,000 to 199,999lbs/yr.	\$1,000	\$1,000	\$1,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
New Const/Retrofit	Ozone WE =< 60 lbs cap & => 200,000 lbs/yr	\$1,500	\$1,500	\$1,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
New Const/Retrofit	Ozone WE >60 lbs & =< 120lbs & => 200,000 lbs/yr.	-	-	\$1,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
New Const/Retrofit	Ozone WE > 120lbs & <500lbs & => 260,000 lbs/yr.	\$6,000	\$6,000	\$6,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000
New Const/Replace	High Efficiency Under-Fired Broiler	-	-	-	\$250	\$250	\$250	\$250	\$250
New Const/Replace	Commercial Condensing Tankless Gas Water Heater	-	-	-	\$750	\$750	\$750	\$750	\$750
New Const/Replace	Boiler Load Controls Basic - CI (purchase)	-	-	-	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	Boiler Load Controls Basic - MURBs (purchase)	-	-	-	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
New Const/Replace	Boiler Load Controls Temp Sensor- MURBs (existing buildings)	-	-	-	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
New Const/Replace	Boiler Load Controls Temp Sensor- MURBs (new buildings)	-	-	-	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
New Const/Replace	Combination Boiler - Multi Family Residential	-	-	-	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
New Const/Replace	CEE Tier 2 Front-Loading Clothes Washer. Multi-Family.	\$50	-	-	\$200	\$200	\$200	\$200	\$200
New Const/Replace	Energy Star Front-Loading Clothes Washer. Multi-Family.	\$50	-	-	\$50	\$50	\$50	\$50	\$50
New Const/Replace	Condensing Unit Heaters	-	-	-	\$500	\$500	\$500	\$500	\$500
Replacement	High Efficiency Condensing Furnace	-	-	-	\$400	\$400	\$400	\$400	\$400

UNION GAS LIMITED

Undertaking of Mr. Goulden  
To Mr. Poch ("GEC")

Union to replicate Table 1 but split out what portion is O&M Repair and what portion is O&M Replacement.

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Union does not track custom projects by types of O&M. However, based on a review of the 2012-2014 data reflected in Exhibit B.T5.Union.GEC.47 Table 1, approximately one half of Union's historical incentives and lifetime savings from O&M projects reflect O&M repair activities.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Shepherd (“SEC”)

To advise where the principle came from.

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The principle referred to is not in direct relation to interactive effects. As Union noted, interactive effects between measures are not automatically captured in prescriptive input assumptions. Union is referring to the principle of including a deemed savings offering as part of an energy efficiency portfolio and the validity of that approach. Union’s periodic review of the Technical Reference Manuals (“TRMs”) of leading DSM jurisdictions in North America has shown numerous examples of jurisdictions that follow an ex ante (deemed) approach to energy savings values for prescriptive technologies. The jurisdictions include California, Massachusetts, Illinois and Vermont, in addition to many others throughout North America. California’s Database of Energy Efficiency Resources (“DEER”) is also a leading example of ex ante savings values used in North America.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Shepherd (“SEC”)

To provide the specific program areas being focused on at the discussions.

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The program areas for potential collaboration that have been identified in discussions with the 12 LDCs referenced at Exhibit B.T11.Union.Staff.31 part a) are provided in the table below.

<b>LDC</b>	<b>Areas of Interest</b>
1	Residential and Low-Income (Aboriginal)
2	Low-Income and Industrial
3	Low-Income
4	Low-Income
5	Low-Income
6	Low-Income
7	Low-Income (Aboriginal)
8	Low-Income and Industrial
9	Low-Income (Aboriginal)
10	Low-Income (Aboriginal)
11	Low-Income
12	Low-Income

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Shepherd (“SEC”)

To confirm number of schools in School Boards.

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Union confirms the figures shown as “Number of School Boards” represent number of school boards rather than number of schools. Exhibit B.T5.Union.Staff.35 Table 1 includes publicly funded school boards and Table 2 includes both publicly and privately funded school boards.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Shepherd (“SEC”)

Union to provide the proposal for the specific mechanics of the cost-effectiveness carryover.

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As stated on p. 24 of the Framework, the cost-efficiency incentive allows the gas utility to roll-forward and use any remaining approved DSM budget amounts in the following year with no subsequent impact on the approved targets for the following year.

Union proposes that the cost-efficiency incentive is triggered once Union has achieved the target utility incentive (\$4.18 million). Achievement of the target utility incentive may be driven by any scorecard.

Union will calculate the rolled-forward budget as the total approved budget less the total actual spend, not including any amount spent from the 15% DSMVA allowance. For example, if in 2016 Union’s total approved budget is \$57.254 million, and Union achieves the target utility incentive with a total spend of \$56.254 million, not including any amount spent from the 15% DSMVA allowance, then \$1 million will be added to Union’s 2017 total approved budget. Union will have the flexibility to spend the rolled-forward amount on any element of the 2017 budget.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Shepherd (“SEC”)

To provide answers to the questions in Mr. Shepherd’s letter.

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Union did not receive a letter from Mr. Shepherd, however has responded to the questions asked in Transcript Volume 2, pp. 206 to 211.

**Q1: The respondents:**

(Transcript p. 206, lines 15 - 19)

- The initial list for the survey process was the contact information available for the premise (location) in Union’s customer database. The research supplier (TNS) conducted pre-screening to identify respondents familiar with energy using applications and technologies at the specific location. During the course of the full interview, allowance was made to obtain an alternate respondent for the final block of questions pertaining to the decision-making process, in the event that the initial contact was not able to provide the answers. The process was designed to provide a complete interview for every premise. The survey did not ask for the location of the individual who completed the survey. As a result, Union does not know the extent to which school boards participated directly in the interview process through this two staged approach.

**Q2: Distribution of total interviewed by group (Segment=Education):**

(Transcript p. 206, lines 21 - 24)

No. of premises: <sup>(1)</sup>	Number	Percent
Those with 4 or fewer premises	207	95.39%
Those with 5 to 9 premises	3	1.38%
Those with 10+ premises	7	3.22%
<b>Total</b>	<b>217</b>	<b>100%</b>

(1) The question asked was: How many buildings (are on this campus?) (does this hospital/municipality occupy?).

**Q3: The universe:**

(Transcript p. 207, lines 18 - 21)

- Total universe for Education segment = 3,658:
  - Child daycare service = 414 (11%).
  - Colleges & universities = 743 (20%).
  - **Elementary & secondary schools = 1,929 (53%).**
  - All other – language, art etc. = 572 (16%).

**Q4: Actual interviews:**

(Transcript p. 208, lines 9 - 11)

- Total completed interviews for the Education segment = 217:
  1. Child daycare service = 43 (19.81%).
  2. Colleges & universities = 10 (4.60%).
  - 3. Elementary & secondary schools = 139 (64.05%).**
  4. All other – language, art etc. = 25 (11.52%).

**Q5: Barriers:**

(Transcript p. 209, lines 7 - 14)

*The actual question asked was:*

*Thinking about the barriers in implementing energy conservation initiatives at your organization, how would rate [INSERT ITEM] as a barriers? Please use a scale from 1 to 10 where 1 means “not a barrier at all” and 10 means “a very significant barrier”. How about [INSERT NEXT ITEM]?*

**LIST OF ITEMS:**

*Availability of funds*

*Allocation of time*

*Payback period*

*Return on investment*

*Risk associated with the initiatives*

*Complexity of the initiatives*

*Administrative burden*

*Availability of incentives*

*Lack of information*

*Impact on operations*

*Reduction in government funding*

**Q6: Energy management decision:**

(Transcript p. 209, lines 17 - 21)

The 21% stated by Mr. Shepherd refers to the % where one employee has responsibility for identifying and implementing new energy management opportunities. The actual question asked was:

*In addition to a purchasing policy, is there an employee or a group of employees who are responsible for identifying and implementing new energy management opportunities in your establishment?*

*YES – ONE EMPLOYEE*

*YES – GROUP OF EMPLOYEES*

*NO*

*DON'T KNOW*

**Q7: Total indoor space:**

(Transcript p. 210, lines 5 - 8)

The square footage of the indoor floor is by premise (location). The actual question asked was:

*What is the approximate square footage of the indoor floor space at this location, including basement and storage, but not including parking or loading areas?*

*DO NOT READ LIST*

*LESS THAN 500 SQUARE FEET*

*500 TO 999*

*1,000 TO 2,999*

*3,000 TO 4,999*

*5,000 TO 9,000*

*10,000 TO 24,999*

*25,000 TO 49,000*

*50,000 TO 99,999*

*100,000 TO 499,999*

*500,000 TO 999,999*

*1,000,000 OR MORE*

*DON'T KNOW*

**Q8: Past DSM participation:**

(Transcript p. 210, lines 15 - 24)

The two columns in the table on p. 2 of Attachment 6 have different bases. That is, the question regarding Past Undertakings was asked to all participants. Those who stated having past undertakings were then asked if their past undertakings were part of Union Gas DSM Program.

A correct interpretation of the information provided in the table would be:

- 28% in the Education segment stated having undertaken any specific projects or initiatives in the last year or two that were designed to reduce the usage, or improve the efficiency of their natural gas consumption.
- In turn, 30% of those with stated past undertakings (28%) mentioned that their past undertakings were part of Union's DSM program.

UNION GAS LIMITED

Undertaking of Ms. Lynch  
To Mr. Millar (Board Staff)

Union to advise how they screen out free riders from the programs.

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Union works with customers with which Union maintains long-term, account managed relationships to determine energy efficiency upgrades that would not have been undertaken if the DSM program did not exist. DSM program eligibility is assessed on a project by project basis to establish the appropriate inputs to quantify DSM savings. This determination relies on judgement by the utility and the customer. In addition, Union applies an overall portfolio free rider adjustment to all custom projects to determine net savings for the DSM program.