SCHOOL ENERGY COALITION

CROSS-EXAMINATION MATERIALS

UNION/ENBRIDGE DSM PLANS

EB-2015-0029/49

UNION PANEL 2

were asking you how you -- about your sensitivity analysis, and you've referred us to Staff 15. Staff 15 does talk about programs that you considered and did not include in your plan, but it doesn't address alternative portfolio mixes.

MR. NEME: We assume, in other words, that -- I mean, I think it's a partial answer. When we asked you -- you have a proposed plan with a proposed mix of programs, and when we asked you what alternative of mixes of programs did you consider, you referred us to Staff 15, which talks about programs that you considered but didn't include in the plan.

But there's another component to the -- to the -- there's another way you could have constructed a different portfolio, which is to take the programs you currently have but put different weights on them you know, less residential, more commercial, less this residential program, more that residential program, et cetera.

Did you -- did you look at different mixes of programs in your portfolio than the one you ultimately ended up proposing, and if so, what were those different mixes, and how did you end up choosing the one you chose instead of the other ones?

[Witness panel confers]

MS. BROOKS: The process in which we put our plan, I would say there was nothing significantly different in our alternatives than what we finally proposed.

MR. NEME: Okay. So you didn't do an alternative

scenario and then compare them and said, "Well, this one saves more here but produces less of a different kind of policy objective." You mostly looked at the portfolio you looked at and qualitatively considered some tweaks to it, but that was about it?

MS. BROOKS: That's correct.

MR. NEME: Is that a fair characterization?

MS. BROOKS: Yes.

MR. NEME: Okay.

MR. POCH: Okay. All right. Let's move on then to number 31, which had to do with your formulaic approach to adjusting targets, and there was some follow-up questions we had.

MR. SMITH: Sorry, what topic?

MR. POCH: This is -- I'm sorry. This is still the same topic, topic 2, GEC 31.

Am I right in assuming that the application of the prospective only approach on assumptions would not apply to custom projects? Or did I gather --

MR. DIBAJI: They would be any changes to input assumptions that apply to any programs in our portfolio.

So if a net-to-gross changed across the board and that affected the custom, that would also apply. But it does not include any CPSV that happens in that current year. So that process would stay the same any custom savings project verification.

MR. POCH: any CPSV?

MR. DIBJAJI: Yes, customs project savings

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, p. 7

a) Please provide the calculation of amount of $2.497 million for inflation.

b) Please confirm that the budget shows $21.284 million for direct incentives and program costs, or 70.7% of the budget before inflation and special studies.

c) Please provide a breakdown of the $21.284 million between incentives paid to customers, promotion, and any other costs included in that total. Please advise the total amount included in that total for internal costs including staff, overheads, and any other costs not paid to arms-length third parties.

d) Please confirm that the budget shows $1.895 million for regular research and evaluation, or 6.3% of the budget before inflation and special studies.

e) Please confirm that the budget shows $6.913 million in administrative costs, or 23.0% of the budget before inflation and special studies. Please provide all studies, reports, memoranda and other such material comparing and/or benchmarking the administrative costs of the Union Gas DSM activity with the administrative costs of other gas utility DSM programs.

Response:
a)

	2012	2013	2014	2015
DSM Budget Subtotal Pre-Inflation ($000)	$30,091	$30,091	$30,091	30,091
Inflation Rate	2.87%	2.22%	1.29%	1.68%
Cumulative Inflation ($000)	$864	$1,551	$1,959	$2,497
Calculation of Cumulative Inflation	=(30,091)*2.87%	=864+(30,954) *2.22%	=1,551+(31,641)*1.29%	=1,959 + (32,049)*1.68%
Total Budget ($000)	**$30,954**	**$31,641**	**$32,049**	**$33,988**

b) Confirmed.

c) The table below shows the split between the pre-inflation incentive and promotion costs. All costs associated with Union's staff and overheads are captured under the administration budget line items found at Exhibit A, Tab 2, p. 7, Table 4.

Pre-inflation Budget Items	2015 Proposed ($000)
Incentives	17,462
Promotion	3,821
Total	**21,284**

d) Confirmed.

e) Confirmed. Union does not have such materials as benchmarking administrative costs across utilities is highly variable. The administration costs associated with DSM programs are dependent on whether the program administrator has internal versus external program delivery, program design, marketing, EM&V, etc.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, p. 6

With respect to Table 2:

a) Please confirm that the inflation amounts, totalling $14,978 million, are additions to the budget components above them, and that a pro rata allocation of the inflation increase is reasonable. Please restate the table showing the inflation amounts included in the line items to which they relate.

b) Please provide a functional budget showing the annual costs, and the total costs for the five years, in the following categories , with inflation included in each line item:

   i) Incentives paid to customers and/or channel partners

   ii) Promotion costs paid to third parties

   iii) Promotion costs – internal

   iv) Research and evaluation costs

   v) Pilot projects – costs paid to third parties

   vi) Pilot projects – internal costs

   vii) Development, startup and administrative costs

   viii) Capital costs.

Response:

a) Union confirms that the cumulative inflation budget identified for each year at Exhibit A, Tab 3, p. 6, Table 2 are in addition to the budget components above them. Union will determine the appropriate allocation of the inflation amounts across the overall budget as required. Union will assess increases to costs for each of its programs and will allocate the inflation budget accordingly. For illustrative purposes Union has provided Attachment 1 and has

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, pp. 37 & 38

With respect to the cost efficiency incentive, Union indicates that if it meets it annual savings targets it would be able to carry forward any remaining approved DSM budget amounts to the immediately following year and that these amounts would be incremental to the approved budget for the following year and can be used to help achieve the targets for the following year.

a) Does this carry forward apply to the program budgets only or also to the portfolio budget? Please explain fully.

b) Are any carry forward amounts that may exist to be carried forward and remain within the same program budget for the following year? For example, if Union had a $1 million carry forward from the low income program, would that $1 million be added to the approved low income budget for the following year or could Union add it to any combination of the programs it wanted?

c) A number of the metrics targets are based on yield from the previous year times the budgeted amount for the current year. If Union were to carry forward an amount from one year to the next, would this amount be included in the calculation of the target for the following year? If not, please explain why not.

Response:

a) As per Section 5.2, p. 24 of the Framework, "the gas utility may choose to roll-forward and use any remaining approved DSM budget amounts in the following year".

   Union's understanding is that any remaining approved budget amounts, including program and portfolio, may be rolled forward.

b) As per Section 5.2, p. 24 of the Framework, "The funds carried forward would be in addition to the approved budget level for the following year and enable the gas utility to work towards achieving the following year's annual target with the benefit of incremental funds. This is a significant benefit, as the gas utilities are afforded greater flexibility and resources to achieve established target levels if they can efficiently produce results".

   Union's understanding of the benefits of the cost-efficiency incentive is to provide the utility with flexibility and resources to achieve its targets. The flexibility is not limited by which

program the rolled-forward budget can be spent on.

c) No. As per Section 5.2, p. 24 of the Framework, “the gas utility may choose 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 GAS LIMITED

Undertaking of Ms. Lynch
To Mr. Shepherd ("SEC")

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

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

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, pp. 17-18
EB-2014-0134, Report of the Board, Section 5.2

Preamble: Section 5.2 of the DSM Framework states that targets should be set at three levels of achievement for each metric: 75%, 100% (target) and 150%.

Union proposed to set the upper band of its target at 125% of the target level. Union stated that the upper band multiplier was established with consideration that Union has to achieve a 25% increase above the target with additional funding of only 15% above the approved DSM budget. Union noted that the 125% upper band was approved by the OEB for Union's 2012-2014 DSM Plan.

a) Please provide a more detailed explanation for setting the upper band at 125% of the target in the context of section 5.2 of the DSM Framework that sets the upper band at 150% of the target.

b) Please confirm that under Union's proposal it would be awarded 40% of the maximum shareholder incentive ($4.2 million) if it achieves 100% of its performance scorecard and the maximum shareholder incentive ($10.45 million) if it achieves 125% of its performance scorecard.

Response:

a) Union could establish the upper band achievement level at 150%, but based on the Plan proposed this would require Union to lower the target and lower band levels as outlined below. Union established its target, lower band and upper band taking into account the budget guidance provided by the Board. As referenced in Exhibit A Tab 3 pp. 17-18 Union believes that the upper band should be set at a level that represents an achievable stretch, in order to encourage the utility to aggressively pursue programs that prove to be very successful.

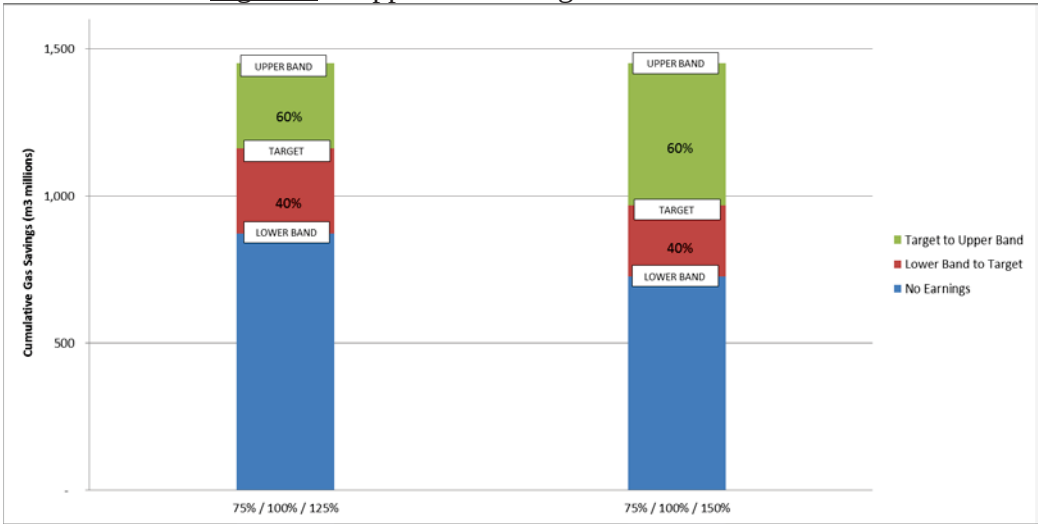
As outlined in Section 11.2 of the Guidelines, *"…..the natural gas utility will be permitted to recover from ratepayers up to 15% above its annual DSM budget recorded in its DSMVA provided that:*

A) It had achieved its weighted scorecard target(s) (i.e., 100%) on a pre-audited basis for the program(s) prior to additional spending being made on those programs; and,

B) The DSMVA funds were used to produce results in excess of those targets (i.e., in excess of 100%) on a pre-audit basis."

With 15% budget overspend available for achievement beyond the 100% target, Union believes a 150% stretch is not proportional. As outlined in Figure 1, if Union had used a 75%/100%/150% scorecard design, it would have resulted in lower 75% and 100% target levels in order to ensure the upper band level was attainable with the available budget.

Figure 1 – Upper Band Target – 125% vs. 150%



Union recognizes that the Framework outlined that the upper band should be set at 150% of target, however, when Union considered this asymmetrical approach to target levels of achievement against the symmetrical target approach of 75%, 100% (target) and 125% proposed, it became evident that it did not align with the principle in section 5.2 of the Framework that states;

"To encourage performance beyond the 100% target level, a pivot point should be introduced at the 100% level. More specifically, 40% of the maximum shareholder incentive available (or $4.2 million) should be provided for performance achieving a scorecard weighted score of 100%, with the remaining 60% (or $6.3 million) available for performance at 150%..."

If Union were to set the lower band and upper band to 75% and 150% of target, one unit of measurement would be worth more between the lower band and target than between the target and upper band. Union does not believe this aligns with the intention of the 40/60 incentive structure, and the result would be a scorecard design that does not necessarily encourage performance above target.[1]

[1] Using 75% and 150% of target for the lower band and upper band, one unit of measurement between the lower band and target would be worth 1.6% of the shareholder incentive (40% of shareholder incentive / 25 units of

Union's proposed scorecard design (75%/100%/125%) uses a symmetrical spread between the lower band and target and between the target and upper band. This design maintains the 40/60 incentive structure on a per-measurement-unit basis, as one unit of measurement is worth more between the target and upper band than between the lower band and target.[2]

To illustrate this, the sum of Union's cumulative m^3 savings target levels for the 2016 Resource Acquisition and 2016 Low Income scorecards are compared below, using the proposed 125% upper band design in Table 1, and a 150% upper band scenario in Table 2:

Table 1 – Union 2016 RA & LI Scorecard Totals (cumulative m3) – 125% Upper Band

	Lower Band	**Target**	**Upper Band**
Resource Acquisition	832 million m^3	1,110 million m^3	1,387 million m^3
Low Income	39 million m^3	51 million m^3	64 million m^3
TOTAL	**871 million m^3**	**1,161 million m^3**	**1,451 million m^3**

Table 2 – Union 2016 RA & LI Scorecard Totals (cumulative m3) – 150% Upper Band

	Lower Band	**Target**	**Upper Band**
Resource Acquisition	694 million m^3	925 million m^3	1,387 million m^3
Low Income	32 million m^3	43 million m^3	64 million m^3
TOTAL	**726 million m^3**	**968 million m^3**	**1,451 million m^3**

For illustrative purposes, if the target levels above were eligible for the full $10.45 million shareholder incentive ($4.18 million for achievement between lower band and target, and the remaining $6.27 million for achievement between target and upper band), the shareholder incentive per m3 saved would be as follows:

Table 3 –2016 Shareholder Incentive per 100 cumulative m3 saved – 125% vs. 150% Upper Band

	75% 100% 125%	**75% 100% 150%**
Lower Band to Target	$1.44	$1.73
Target to Upper Band	$2.16	$1.30

measurement). Between the target and upper band, one unit of measurement would be worth 1.2% of the shareholder incentive (60% of shareholder incentive / 50 units of measurement). In other words, one unit of measurement between the target and upper band would be worth 0.75 times a unit of measurement between the lower band and target.

[2] Using 75% and 125% of target for the lower band and upper band, one unit of measurement between the lower band and target is worth 1.6% of the shareholder incentive (40% of shareholder incentive / 25 units of measurement). Between the target and upper band, one unit of measurement is worth 2.4% of the shareholder incentive (60% of shareholder incentive / 25 units of measurement). In other words, one unit of measurement between the target and upper band is worth 1.5 times a unit of measurement between the lower band and target.

In order to maintain the Board's objective of encouraging performance above the 100% target, and to maintain a 40/60 incentive structure on a per-m3-saved basis, Union has symmetrically set the lower band and upper band levels to 75% and 125%, respectively. Furthermore, by setting the upper band to 125% instead of 150%, Union has pulled the target and lower band levels upwards, making them more difficult to achieve. To illustrate this, Union's 2016 shareholder incentives payout structure is compared below, using the proposed 125% upper band design in Table 1 above, and the 150% upper band scenario in Table 2 above:

At 871 million m^3 saved:

- Union will have earned $0 in shareholder incentive, using the proposed 125% upper band design
- Union will have earned $2.5 million in shareholder incentive, using the 150% upper band scenario (24% of maximum shareholder incentive)

At 968 million m^3 saved:

- Union will have earned $1.4 million in shareholder incentive, using the proposed 125% upper band design (13% of maximum shareholder incentive)
- Union will have earned $4.2 million in shareholder incentive, using the 150% upper band scenario (40% of maximum shareholder incentive)

At 1,161 million m^3 saved:

- Union will have earned $4.2 million in shareholder incentive, using the proposed 125% upper band design (40% of maximum shareholder incentive)
- Union will have earned $6.7 million in shareholder incentive, using the 150% upper band scenario (64% of maximum shareholder incentive)

b) Confirmed. Union would receive 40% of the maximum shareholder incentive ($4.2 million) for achieving the proposed targets on all scorecards and the maximum shareholder incentive ($10.45 million) for achieving the upper band proposed for all scorecards.

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 3, p. 17

Is the Company suggesting that its targets in future years would be formulaically adjusted as TRM and/or NTG assumptions change? If so, how would the mechanics of that adjustment work?

Response:

Yes. It is Union's expectation that the TRM and Net-to-gross study will be completed in 2015, and will be incorporated into the proposed 2016 Scorecard targets accordingly, ensuring the 2016 targets and achievements are based on the same input assumptions. This will ensure targets are not easier or harder to achieve as a result of changes to input assumptions resulting from these studies.

In addition, as per Exhibit A, Tab 3, p. 17, Union proposes that updates to input assumptions be applied to targets prospectively. Any updates to input assumptions would be applied to the post audit results for a given year so that those results would inform the following year's targets based on Union's formulaic scorecards. For illustrative purposes the shareholder incentive amounts for the 2016 year will be based on the input assumptions used to develop the 2016 targets. Any changes/updates to the input assumptions resulting from the evaluation and audit of the 2016 results would then be applied to 2016's results only for the purpose of setting the 2017 targets. The 2017 target achievement would now be based on the same input assumptions used to establish the 2017 program targets. This process ensures an accurate measurement of achievement vs. target. As noted in Union's response at Exhibit B.T7.Union.Staff.26 part a), 81% of U.S jurisdictions apply updated input assumptions prospectively, including leading jurisdictions such as California, Vermont, Rhode Island, Connecticut and New York.

MR. DeROSE: So you're deriving your 75 -- your 100 percent target based on what you believe you can achieve on the upper band with the budget, not on what you believe you can achieve at 100 percent with your actual budget without the DSM VA?

MS. LYNCH: So we're setting the -- just for clarity, we're setting the target based on the target budget and then the upper band based on the assumption that we have the DSM VA, so the 15 percent, available to achieve the upper band.

MR. DeROSE: Well, but if -- if you're basing the 100 percent target on your budget without the DSM VA, why is the target different in table 1 and table 2?

I don't think that is what you're doing.

[Witness panel confers]

MS. LYNCH: So again it comes back to -- if you look our target, and we have set that at the 1.1, and you look at what would be a reasonable stretch on that, considering the budget that would be available, it would not be reasonable to put a 50 percent addition with a 15 percent budget availability.

So what we're showing in this illustrative example is that in order to balance that, keeping in mind the budget available, we would need to adjust the target accordingly.

MR. DeROSE: Is this not another way of saying that you think that the Board's view of 150 percent was just too aggressive?

MS. LYNCH: What we've done is -- essentially. But

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, Section 3.0

a) Please provide the scorecards that were in place in 2012, 2013 and 2014.

b) Please provide the percentage of target level achieved for each metric on each scorecard in 2012, 2013, and 2014.

c) Please provide the shareholder incentive received related to each scorecard for each year over the 2012-2014 period.

d) Please provide the total shareholder incentive received for each year over the 2012-2014 period.

e) Please provide the percentage of maximum shareholder incentive received for each year over the 2012-2014 period.

Response:

a) through d) The 2012, 2013 and 2014 scorecards and scorecard results are provided below. For additional details, please refer to the 2012, 2013 and 2014 DSM Annual Reports.

2012 Scorecard Results

2012 Resource Acquisition Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings (m^3)	619,500,000	826,000,000	1,032,500,000	90%	887,302,617	115%	103%
Deep Savings – Residential	120	160	200	5%	73	-9%	-0.4%
Deep Savings - C/I	4%	5%	6%	5%	9.36%	318%	16%
				Total Scorecard Target Achieved			***119%***
				Scorecard Incentive Achieved			***$3,496,862***

2012 Low Income Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings from Single Family (m^3)	20,600,000	30,000,000	37,500,000	65%	44,042,693	194%	126%
Cumulative Natural Gas Savings from Multi-Family (m^3)	9,750,000	13,000,000	16,250,000	35%	11,871,819	83%	29%
				Total Scorecard Target Achieved			***150%***[1]
				Scorecard Incentive Achieved			***$ 2,725,227***

2012 Large Industrial Rate T1 and Rate 100 Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings (m^3)	750,000,000	1,000,000,000	1,250,000,000	100%	1,392,931,990	179%	*179%*
				Total Scorecard Target Achieved			***150%***[2]
				Scorecard Incentive Achieved			***$1,806,595***

2012 Market Transformation Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Residential New Build - Top 10 Builders Participating	1	2	4	50%	3	125%	*63%*
Residential New Build - Top 50 Builders Participating	5	8	15	50%	8	100%	*50%*
				Total Scorecard Target Achieved			***113%***
				Scorecard Incentive Achieved			***$181,734***

Union achieved a total of $8.210 million in DSM incentives as a result of its program performance results in 2012.

[1] Scorecard achievement was actually 155%. Maximum achievement is capped at 150%.
[2] Scorecard achievement was actually 179%. Maximum achievement is capped at 150%.

2013 Scorecard Results

2013 Resource Acquisition Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings (m^3)	639,840,620	853,120,826	1,066,401,033	90%	920,774,950	116%	104%
Deep Savings – Residential	120	160	200	5%	203	154%	7.7%
Deep Savings - C/I	9.36%	10.36%	11.36%	5%	8.97%	31%	2%
					Total Scorecard Target Achieved		113%
					Scorecard Incentive Achieved		$3,143,206

2013 Low Income Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings from Single Family (m^3)	19,500,000	26,000,000	32,500,000	60%	40,236,650	210%	126%
Cumulative Natural Gas Savings from Multi-Family (m^3)	13,200,000	17,600,000	22,000,000	40%	15,267,883	73%	29%
					Total Scorecard Target Achieved		***150%***[3]
					Scorecard Incentive Achieved		***$2,728,501***

2013 Large Volume Rate T1, Rate T2/R100 Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Rate T1 Cumulative Natural Gas Savings (m3)	150,477,098	200,636,131	250,795,164	60%	180,388,329	80%	48%
Rate T2 / Rate100 Cumulative Natural Gas Savings (m3)	821,502,546	1,095,336,728	1,369,170,910	40%	1,664,166,592	204%	82%
					Total Scorecard Target Achieved		***129%***
					Scorecard Incentive Achieved		***$ 1,362,407***

[3] Actual scorecard achievement result is 155%. Maximum achievement is capped at 150%.

2013 Market Transformation Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
New Participating Builders	6	8	15	60%	8	100%	*60%*
Prototype Homes Built	20%	30%	40%	40%	63%	266%	*106%*
					Total Scorecard Target Achieved		*150%*[4]
					Scorecard Incentive Achieved		*$550,259*

Union achieved a total of $7.784 million in DSM incentives as a result of its program performance results in 2013.

2014 Scorecard Results (Pre-Audit)

Draft 2014 Resource Acquisition Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings (m^3)	591,060,012	788,080,016	985,100,020	90%	1,091,829,914	177%	159%
Deep Savings – Residential	204	254	304	5%	996	842%	42%
Deep Savings - C/I	8.97%	9.97%	10.97%	5%	8.84%	44%	2%
					Total Scorecard Target Achieved		**150%**[5]
					Scorecard Incentive Achieved		**$ 5,666,634**

Draft 2014 Low-Income Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Cumulative Natural Gas Savings from Single Family (m^3)	19,500,000	26,000,000	32,500,000	60%	36,105,327	178%	107%
Cumulative Natural Gas Savings from Multi-Family (m^3)	13,200,000	17,600,000	22,000,000	40%	23,549,797	168%	67%
					Total Scorecard Target Achieved		***150%***[6]
					Scorecard Incentive Achieved		***$ 2,763,699***

[4] Actual scorecard achievement result is 166%. Maximum achievement is capped at 150%.
[5] Scorecard is capped at 150%. Actual scorecard achievement is 204%.
[6] Actual scorecard achievement result is 174%. Maximum achievement is capped at 150%.

Draft Large Volume Rate T1, Rate T2/Rate 100 Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
Rate T2 / Rate 100 Cumulative Natural Gas Savings (m^3)	795,074,195	1,060,098,927	1,325,123,659	40%	1,010,819,454	91%	*36%*
Rate T1 Cumulative Natural Gas Savings (m^3)	156,530,251	208,707,001	260,883,751	60%	94,788,072	-9%	*-5%*
					Total Scorecard Target Achieved		***31%***
					Scorecard Incentive Achieved		***$ 0***

Draft Market Transformation Scorecard and Results

Metrics	Metric Target Levels			Weight	Achievement	% of Metric Achieved	Weighted % of Scorecard Achieved
	Lower Band	Target	Upper Band				
New Participating Builders	2	4	10	40%	3	75%	*30%*
Prototype Homes Built	50% of participating builders	60% of participating builders	70% of participating builders	40%	86.36%	232%	*93%*
Homes Built (>20% above OBC 2012) by Participating Builders	3%	6%	9%	20%	14.73%	245%	*49%*
					Total Scorecard Target Achieved		**150%**[7]
					Scorecard Incentive Achieved		**$ 557,358**

Union's pre-audit, draft DSM incentive amount from all 2014 scorecards is $8.988 million.

e) Please see Table 1 below.

Table 1

Year	Percentage of Maximum Shareholder Incentive
2012	79%
2013	73%
2014 (Pre-Audit)	83%

[7] Scorecard is capped at 150%. Actual scorecard achievement is 172%.

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, pp. 20-37

a) Please confirm that the DSM incentive cap is based on the weighted scorecard score for each of the resource acquisition, performance based, low income and market transformation scorecards and not on the score for the individual metrics within each scorecard.

b) Please confirm that if Union hit 132% of both the single family cumulative natural gas savings and the social and assisted multi-family cumulative natural gas savings metrics and less than 75% of the market rate multi-family cumulative natural gas metric in the low income scorecard, Union would qualify the maximum incentive for the low income scorecard.

c) Please confirm that Union would qualify for the maximum incentive associated with the resource acquisition scorecard if it achieved 150% of the cumulative natural gas savings metric and 50% of the home reno rebate participants metric.

Response:

a) Confirmed.

b) Confirmed.

c) Confirmed.

rates for those savings, three times what it costs them to buy the gas delivered, right?

I think it's 88 cents or something. Isn't it 88 cents per cubic metre?

MR. TETREAULT: I'm not sure what you're referring to, Mr. Shepherd, 88 cents?

MR. SHEPHERD: I thought your cost per CCM was 88 cents for behavioural. It's not cost-effective, right?

MR. TETREAULT: I don't know.

[Witness panel confers]

MR. SHEPHERD: I'm going to move on, because I don't have that much time.

Let me move to T2, Staff 5, and I just want to confirm something. The way the scorecard currently works, and the way you are proposing to make it work, is that if you over-perform in one metric within a scorecard, that can save you from bad performance on the other metric or metrics, right?

So I will give you an example. On page 4 of this, you have -- you have the market transformation scorecard, you have prototype homes built. The weight is 40 percent, but because you're at 266, you're already getting your target incentive just by that 40 percent weight, right?

MR. DIBAJI: Which page are you referencing to?

MR. SHEPHERD: Page 4. T2, Staff 5, page 4.

[Witness panel confers]

MS. LYNCH: So in the scorecard structure here, you can over-achieve on a metric, or you can under-achieve on a metric, which would have a negative impact.

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 3, Appendix A, pp. 96-98

a) Why does the Company believe it is appropriate to support its furnace replacement offering and multi-family custom offering when those offerings have TRC ratios of 0.37 and 0.44, respectively? Wouldn't those funds be better spent on reaching more low income customers with offerings that have TRC ratios of at least 0.7? If not, why not?

b) Please provide in Excel spreadsheet form, with formulas intact, the calculations underpinning the cost-effectiveness screening results presented for 2016.

Response:

a) The rationale for inclusion of the furnace replacement offering and multi-family custom offering is:

Market Demand

- Key stakeholders in the social and assisted housing market have repeatedly emphasized the need for Union's incentives to overcome the financial barrier for upgrading to a higher efficiency option.
- During the 2012-2014 period Union heard through Social Service agencies, Union's Low Income consultatives and Union's delivery agents that a furnace upgrade to high efficiency is not affordable for Low Income private market customers. Offering an incentive that covers the full cost to upgrade addresses that barrier.

Comprehensive Offering

- As noted at Exhibit A, Tab 3, Appendix A, p. 73, line 14, the Low Income program goal is to continue to develop the breadth and depth of Low Income offerings over the term of the multi-year plan.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, Appendix C, p. 64

Please confirm that Union calculates a net positive TRC for each custom project. If not confirmed, please explain the circumstances under which Union would proceed with a custom project that is not cost-effective.

Response:

Not confirmed. Union does not calculate a net positive TRC for each custom project. There are non-energy benefits that customers factor in to their decision making process that are not captured in the TRC test. These include, but are not limited to; data management, accounting systems, controls and time savings.

As noted in Section 5.1.3. of the 2012-2014 Guidelines, "For screening purposes, the TRC test should be performed at the program level only." Per Union's 2013 Annual Report, the custom C/I portfolio had a TRC value of $44.5 million and a TRC ratio of 1.89.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, Appendix A, pp. 37-40

a) For the C/I Custom offering, please indicate the rate classes which have customers eligible for these programs, the number of eligible customers per customer segment and the total annual gas consumption per customer segment.

b) Please provide the Return on Investment (ROI), or payback period threshold, that these customer segments typically have and how these financial indicators have been taken into consideration in the design and delivery of these custom offerings in order to minimize free riders.

c) Please indicate whether Union considered payback period or ROI in the design of this offering's eligibility criteria.

d) Please indicate whether Union designed this offering assuming that the free ridership values will be similar to those used for the same offering over the 2012-2014 period.

Response:

a) Please see Sections 1.1.1 and 1.1.2 of Union's evidence, Exhibit A, Tab 3, Appendix A. All C/I customers within these rate classes may be eligible for these programs.

b) The range of paybacks experienced by these customer segments are illustrated in EB-2014-0273, Exhibit B.Staff.7 to 9 (please see Attachment 1).

Payback is one of many factors that influences a customer's decision of whether or not to move forward with an energy efficiency project and has an impact on free ridership. Payback was a consideration used to design the incentive structure for Union's program offerings. Union increased the project incentive available for general service customers to $\$0.20/m^3$ saved annually (from $0.10), and increased the incentive cap for contract customer incentives to $100,000 per project.

c) Due to variability by customer and project type, Union did not consider payback period or ROI as an eligibility criteria for program offerings.

d) Union's existing approved free rider rates were applied determine savings and targets for existing programs. As noted in Exhibit A, Tab 3, pp. 46-47, a custom net to gross study is currently underway and the results will be used to adjust the targets for 2016

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit B, Tab 2, Table 4 (Low Income Custom Projects), page 20

Please provide a new table in Excel format that includes the following:

a) Annual gas savings for each project
b) Annual electricity, water and other savings for each project, if any
c) Total annual cost savings associated with a) and b) above
d) Incremental costs of the project
e) Incentive amount provided to the customer
f) Simple payback based on the information above (before the incentive was provided)

Response:

Please see Attachment 1.

Low Income Custom Projects

Line No.	Project ID	Project Description	Audited m3 Annual Gas Savings (m^3/Yr) a.	Audited Annual Electrical Savings (kWh/Yr) b.	Audited Annual Water Savings (Liters/Yr) c.	Total Annual Cost Savings d.	Audited Incremental Cost ($) e.	Incentive f.	Simple Payback* g.	Rate Class h.	2013 Avg Gas Unit Price[1] ($/$m^3$) i.	2013 Electricity Unit Price[2] ($/kWh) j.	2013 Water Unit Price[2] ($/L) k.
1	2013-COM-0014	High Efficiency Building	20,757	28,970	219,000	$ 7,484	$ 258,200	$ 57,378	34.5	M2	$ 0.21677	$ 0.10299	$0.00000311
2	2013-COM-0013	High Efficiency Building	28,720	80,860	365,000	$ 14,555	$ 254,000	$ 55,341	17.5	M2	$ 0.21677	$ 0.10299	$0.00000311
3	2013-COM-0271	Temperature Controls	20,428	0	0	$ 4,428	$ 71,100	$ 34,050	16.1	M2	$ 0.21677	$ 0.10299	$0.00000311
4	2013-COM-0218	Windows and doors	17,935	423	0	$ 3,859	$ 350,641	$ 25,083	90.9	M1	$ 0.21274	$ 0.10299	$0.00000311
5	2013-COM-0239	Windows	5,995	316	0	$ 1,308	$ 386,303	$ 17,813	295.4	M1	$ 0.21274	$ 0.10299	$0.00000311
6	2013-COM-0172	Windows	5,998	0	0	$ 1,300	$ 148,500	$ 14,611	114.2	M2	$ 0.21677	$ 0.10299	$0.00000311
7	2013-COM-0130	ERV	9,665	34,718	0	$ 6,709	$ 9,720	$ 4,860	1.4	01	$ 0.32417	$ 0.10299	$0.00000311
8	2013-COM-0240	Pipe Insulation	9,554	-72,360	0	-$ 5,381	$ 48,000	$ 10,266	NA[3]	M2	$ 0.21677	$ 0.10299	$0.00000311
9	2013-COM-0128	Windows	4,614	227	0	$ 1,005	$ 91,955	$ 8,748	91.5	M1	$ 0.21274	$ 0.10299	$0.00000311
10	2013-COM-0016	Pipe Insulation	1,098	385	0	$ 278	$ 121,050	$ 4,828	436.0	M2	$ 0.21677	$ 0.10299	$0.00000311
11	2013-COM-0263	Windows	673	1	0	$ 143	$ 7,951	$ 1,241	55.5	M1	$ 0.21274	$ 0.10299	$0.00000311
			125,437	**73,540**	**584,000**	**$ 35,687**	**$ 1,747,420**	**$ 234,218**					

*Simple Payback has been provided for illustrative purposes only and includes all audited project savings.

[1]Average Gas Unit Prices are the average 2013 unit rate per m3 by rate class delivered to customers on system supply exclusive of fixed customer charges (non-fixed charges include delivery, demand, transportation, storage and gas commodity).

[2]Electricity and Water Unit Prices are the 2013 values from the OPA Conservation and Demand Management Cost Effectiveness Guide, October 15, 2010, Appendix A, Ratepayer Assumptions

[3]Increased cost of additional electricity use is greater than cost savings of gas saved.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit B, Tab 2, Table 6 (Commercial/Industrial Custom Projects), pages 24-25

Please provide a new table in Excel format that includes the following:

a) Annual gas savings for each project
b) Annual electricity, water and other savings for each project, if any
c) Total annual cost savings associated with a) and b) above
d) Incremental costs of the project
e) Incentive amount provided to the customer
f) Simple payback based on the information above (before the incentive was provided)

Response:

Please see Attachment 1.

Commercial/Industrial Custom Projects

Line No.	Project ID	Project Description	Audited m3 Annual Gas Savings (m^3/Yr) a.	Audited Annual Electrical Savings (kWh/Yr) b.	Audited Annual Water Savings (Liters/Yr) c.	Total Annual Cost Savings d.	Audited Incremental Cost ($) e.	Incentive f.	Simple Payback* g.	Rate Class h.	2013 Avg Gas Unit Price[1] ($/$m^3$) i.	2013 Electricity Unit Price[2] ($/kWh) j.	2013 Water Unit Price[2] ($/L) k.
1	2013-COM-0101	New construction warehouse with roof insulation (R-30) exceeding code (R-27)	13,924	0	0	$ 3,018	$ 90,800	$ 1,392	30.1	M2	$ 0.21677	$ 0.10299	$0.00000311
2	2013-IND-0196	Gas leak repairs	0	0	0	$ -	$ 3,000	$ 1,500	N/A[3]	M4	$ 0.20164	$ 0.10299	$0.00000311
3	2013-IND-0045	Starch dryer steam preheater	0	0	0	$ -	$ 95,169	$ 20,000	N/A[4]	20	$ 0.24013	$ 0.10299	$0.00000311
4	2013-IND-0457	Newly constructed asphalt plant to replace 2 nearby aging plants	544,277	0	0	$ 105,539	$ 3,200,000	$ 40,000	30.3	M5	$ 0.19391	$ 0.10299	$0.00000311
5	2013-IND-0256	5.1 acre expansion to an existing 4.6 acre greenhouse.	321,899	0	0	$ 62,418	$ 342,070	$ 32,190	5.5	M5	$ 0.19391	$ 0.10299	$0.00000311
6	2013-IND-0186	Line speed improvements	1,112,600	0	0	$ 224,344	$ 9,291,257	$ 40,000	41.4	M4	$ 0.20164	$ 0.10299	$0.00000311
7	2013-IND-0013	"B" deodorizer project	2,864,979	0	0	$ 555,539	$ 2,874,132	$ 80,000	5.2	M5	$ 0.19391	$ 0.10299	$0.00000311
8	2013-IND-0455	HVAC improvement	5,927,716	0	0	$ 1,181,296	$ 497,200	$ 120,000	0.4	M7	$ 0.19928	$ 0.10299	$0.00000311
9	2013-IND-0267	Greenhouse expansion (22.5 acres)	3,085,122	0	0	$ 598,226	$ 3,844,283	$ 85,000	6.4	M5	$ 0.19391	$ 0.10299	$0.00000311
10	2013-IND-0185	HVAC improvement - space heating	1,741,055	0	0	$ 351,065	$ 83,870	$ 40,000	0.2	M4	$ 0.20164	$ 0.10299	$0.00000311
11	2013-IND-0083	New greenhouse - multiple measures	1,531,967	0	0	$ 297,059	$ 1,188,285	$ 50,000	4.0	M5	$ 0.19391	$ 0.10299	$0.00000311
12	2013-IND-0037	Tank & hot oil pipe insulation	667,000	0	0	$ 134,493	$ 790,008	$ 40,000	5.9	M4	$ 0.20164	$ 0.10299	$0.00000311
13	2013-IND-0046	Spray dryer steam coil preheat	402,543	0	0	$ 96,664	$ 95,131	$ 20,000	1.0	20	$ 0.24013	$ 0.10299	$0.00000311
14	2013-IND-0177	5.2 acre expansion to an existing 4.6 acre greenhouse.	567,304	0	0	$ 110,004	$ 339,980	$ 40,000	3.1	M5	$ 0.19391	$ 0.10299	$0.00000311
15	2013-IND-0055	Pipe & vessel insulation	286,100	0	0	$ 55,477	$ 350,001	$ 38,140	6.3	M5	$ 0.19391	$ 0.10299	$0.00000311
16	2013-COM-0162	Dock door seals	342,886	61,961	0	$ 101,320	$ 297,340	$ 34,973	2.9	10	$ 0.27688	$ 0.10299	$0.00000311
17	2013-IND-0042	Steam leak repairs	158,733	0	2,010,869	$ 30,786	$ 8,793	$ 4,395	0.3	M5	$ 0.19391	$ 0.10299	$0.00000311
18	2013-COM-0026	Grain dryer replacement	11,633	0	0	$ 2,522	$ 58,560	$ 7,977	23.2	M2	$ 0.21677	$ 0.10299	$0.00000311
19	2013-IND-0064	Steam trap replacement	172,935	19,375	358,691	$ 35,530	$ 3,124	$ 1,562	0.1	M5	$ 0.19391	$ 0.10299	$0.00000311
20	2013-COM-0149	Heat transfer improvement	25,660	0	0	$ 5,562	$ 14,895	$ 2,566	2.7	M2	$ 0.21677	$ 0.10299	$0.00000311
21	2013-COM-0069	Window & door replacements	14,480	0	0	$ 3,139	$ 168,436	$ 1,448	53.7	M2	$ 0.21677	$ 0.10299	$0.00000311
			19,792,813	**81,336**	**2,369,560**	**$ 3,954,000**	**$ 23,636,334**	**$ 701,143**					

*Simple Payback has been provided for illustrative purposes only and includes all audited project savings.

[1]Average Gas Unit Prices are the average 2013 unit rate per m3 by rate class delivered to customers on system supply exclusive of fixed customer charges (non-fixed charges include delivery, demand, transportation, storage and gas commodity).

[2]Electricity and Water Unit Prices are the 2013 values from the OPA Conservation and Demand Management Cost Effectiveness Guide, October 15, 2010, Appendix A, Ratepayer Assumptions Table

[3]Savings for this project were removed for reasons of project eligibility.

[4]Savings for this project were removed as a result of the project being removed from service.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit B, Tab 2, Table 8 (Large Volume Projects), pages 30-31

Please provide a new table in Excel format that includes the following:

a) Annual gas savings for each project
b) Annual electricity, water and other savings for each project, if any
c) Total annual cost savings associated with a) and b) above
d) Incremental costs of the project
e) Incentive amount provided to the customer
f) Simple payback based on the information above (before the incentive was provided)

Response:

Please see Attachment 1.

Large Volume Custom Projects

Line No.	Project ID	Project Description	Audited m3 Annual Gas Savings (m^3/Yr) a.	Audited Annual Electrical Savings (kWh/Yr) b.	Audited Annual Water Savings (Liters/Yr) c.	Total Annual Cost Savings d.	Audited Incremental Cost ($) e.	Incentive f.	Simple Payback* g.	Rate Class h.	2013 Avg Gas Unit Price[1] ($/$m^3$) i.	2013 Electricity Unit Price[2] ($/kWh) j.	2013 Water Unit Price ($/L) k.
1	2013-IND-0348	Coke oven gas pipe replacement	5,820,000	0	0	$ 1,321,114	$ 1,188,280	$ 170,000	0.9	100	$ 0.22700	$ 0.10299	$ 0.00000311
2	2013-IND-0469	Coke oven gas burners installed in an existing boiler	6,940,000	0	0	$ 1,236,062	$ 272,833	$ 40,000	0.2	T2	$ 0.17811	$ 0.10299	$ 0.00000311
3	2013-IND-0120	Steam leak repairs	4,097,000	0	42,920,000	$ 729,838	$ 178,191	$ 20,000	0.2	T2	$ 0.17811	$ 0.10299	$ 0.00000311
4	2013-IND-0121	Steam leak repairs	1,678,000	0	17,570,000	$ 298,918	$ 155,021	$ 20,000	0.5	T2	$ 0.17811	$ 0.10299	$ 0.00000311
5	2013-IND-0416	Steam leak repairs	1,247,000	0	12,305,000	$ 222,138	$ 702,644	$ 15,000	3.2	T2	$ 0.17811	$ 0.10299	$ 0.00000311
6	2013-IND-0074	Steam leak repairs	2,206,000	130,550	25,630,000	$ 424,158	$ 21,250	$ 10,625	0.05	T1	$ 0.18614	$ 0.10299	$ 0.00000311
7	2013-IND-0240	Steam leak repairs	1,934,000	0	30,430,000	$ 344,553	$ 17,709	$ 8,855	0.05	T2	$ 0.17811	$ 0.10299	$ 0.00000311
8	2013-IND-0229	Heat recovery from equipment cooling to boiler feed water	1,707,000	0	826,500,000	$ 320,317	$ 133,469	$ 40,000	0.4	T1	$ 0.18614	$ 0.10299	$ 0.00000311
9	2013-IND-0542	Burner metering equipment upgrades on heat treating furnace	98,580	0	0	$ 18,350	$ 19,542	$ 9,771	1.1	T1	$ 0.18614	$ 0.10299	$ 0.00000311
10	2013-IND-0123	Steam trap repairs	1,116,000	0	3,418,000	$ 198,778	$ 66,475	$ 20,000	0.3	T2	$ 0.17811	$ 0.10299	$ 0.00000311
11	2013-IND-0101	Install heat recovery steam generator (HRSG) on an existing gas turbine generator to offset boiler-generated steam usage; savings claimed for proposed replacement of electric chillers with turbo-chillers which provide for more annual hours of use	3,405,000	0	0	$ 633,819	$ 1,232,775	$ 40,000	1.9	T1	$ 0.18614	$ 0.10299	$ 0.00000311
12	2013-IND-0273	Condensate heat recovery	1,239,000	0	0	$ 281,248	$ 30,073	$ 20,000	0.1	100	$ 0.22700	$ 0.10299	$ 0.00000311
13	2013-IND-0124	Re-commission existing 3rd reaction tower previously bypassed due to worn out screens	32,310,000	0	108,562,869	$ 5,754,972	$ 4,000,000	$ 41,091	0.7	T2	$ 0.17811	$ 0.10299	$ 0.00000311
14	2013-IND-0157	Shut down AHUs, including steam lines, in abandoned portion of plant	2,998,000	0	18,510,000	$ 680,590	$ 35,281	$ 17,641	0.1	100	$ 0.22700	$ 0.10299	$ 0.00000311
15	2013-IND-0205	Implementation of more precise product trimming equipment	2,324,000	0	0	$ 413,920	$ 552,405	$ 40,000	1.3	T2	$ 0.17811	$ 0.10299	$ 0.00000311
16	2013-IND-0117	Greenhouse expansion with efficient materials and heating equipment	2,085,000	0	0	$ 388,109	$ 2,160,899	$ 55,000	5.6	T1	$ 0.18614	$ 0.10299	$ 0.00000311
17	2013-IND-0159	Replacement of steam-heated AHUs with indirect gas-fired units	233,000	0	0	$ 43,371	$ 1,907,390	$ 20,837	44.0	T1	$ 0.18614	$ 0.10299	$ 0.00000311
18	2013-IND-0230	Turbine inlet fogging	236,500	0	0	$ 53,684	$ 57,025	$ 18,609	1.1	100	$ 0.22700	$ 0.10299	$ 0.00000311
19	2013-IND-0450	Replacement of pipe insulation	7,343,000	0	0	$ 1,307,839	$ 564,798	$ 73,646	0.4	T2	$ 0.17811	$ 0.10299	$ 0.00000311
20	2013-IND-0451	Replacement of pipe insulation	4,895,000	0	0	$ 871,833	$ 376,532	$ 49,098	0.4	T2	$ 0.17811	$ 0.10299	$ 0.00000311
21	2013-IND-0179	Replacement of pipe insulation	7,180,000	0	0	$ 1,278,808	$ 583,058	$ 10,000	0.5	T2	$ 0.17811	$ 0.10299	$ 0.00000311
22	2013-IND-0072	Replacement of pipe insulation	477,000	0	0	$ 88,790	$ 39,681	$ 19,841	0.4	T1	$ 0.18614	$ 0.10299	$ 0.00000311
23	2013-IND-0204	Replacement of pipe insulation	155,000	0	0	$ 28,852	$ 168,137	$ 20,000	5.8	T1	$ 0.18614	$ 0.10299	$ 0.00000311
			91,724,080	**130,550**	**1,085,845,869**	**$ 16,940,062**	**$ 14,463,468**	**$ 780,013**					

*Simple Payback has been provided for illustrative purposes only and includes all audited project savings.

[1]Average Gas Unit Prices are the average 2013 unit rate per m3 by rate class delivered to customers on system supply exclusive of fixed customer charges (non-fixed charges include delivery, demand, transportation, storage and gas commodity).

[2]Electricity and Water Unit Prices are the 2013 values from the OPA Conservation and Demand Management Cost Effectiveness Guide, October 15, 2010, Appendix A, Ratepayer Assumptions Table

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 3, Appendix A, pp. 27-30
Exhibit A, Tab 3, Appendix A, pp. 30-36

a) For the C/I Prescriptive and Direct Install offerings, please provide typical payback periods associated with the efficiency equipment included in these offers.

b) Please indicate whether Union undertook any research on the current penetration of these technologies in the marketplace. If yes, please provide estimates of penetration rates in Union's franchise area for each relevant technology.

c) Please explain how payback and market penetration have been taken into consideration in the design of this offering in the context of minimizing free ridership.

d) Please indicate the free ridership rate that will be used for these offerings.

Response:

a) Direct Install:
The pilot will inform the program design for the Direct Install offering, including the incentive level and type of equipment as referenced in "Knowledge Gaps" Exhibit A, Tab 3, Appendix A, p. 31. Consequently, Union has not assessed the payback period for this offering.

C/I Prescriptive:
Table 1 below provides the variances in payback before and after Union's incentives. Ranges have been used to show the payback for the various equipment sizes in each measure offering.

Table 1

CI Prescriptive Measure	Average Simple Payback (years)	Average Simple Payback after 2016-2020 Incentives (years)
Air Curtains	2.12 - 9.18	1.39 - 5.84
CEE Tier 2 Front-Loading Clothes Washers	7.93	5.29
Condensing Boilers	4.84 - 7.82	3.64 - 5.47
Condensing Gas Water Heaters	6.03 - 28.17	4.68 - 21.86
Energy Star Convection Ovens	4.29	3.06
Energy Star Steam Cookers	0.49	0.37
Demand Control Ventilation with CO2 Sensors	1.25 - 39.32	0.77 - 24.34
Destratification Fans	2.44	1.82
Energy Star Dishwashers	0.48 - 3.19	0.31 - 2.49
Energy Star Clothes Washers	3.54	2.36
Energy Recovery Ventilator	2.18 - 6.51	1.59 - 5.25
Energy Star Fryer	10.14	9.40
Heat Recovery Ventilator	3.22 - 9.96	2.14 - 9.62
Infrared Heating Unit	1.87 - 3.22	0.94 - 2.64
Demand Control Kitchen Ventilation Unit	1.92 - 3.61	1.20 - 2.53
Condensing Make-Up Air Unit	1.27 - 9.73	0.49 - 5.62
Laundry Washing Equipment with Ozone	4.86 - 10.93	2.87 - 6.96
Condensing Unit Heaters	10.06	7.46
Condensing Furnace	20.65	7.54
Boiler Load Controls	7.86 - 14.80	4.91 - 9.52
Combination Boilers	9.96	8.87
Tankless Water Heaters	17.18 - 33.91	11.28 - 22.26
High-Efficiency Under-Fired Broiler	1.59 - 3.17	1.38 - 2.76
Demand Control Ventilation with CO2 Sensors (other comm)	1.25 - 39.32	0.77 - 24.34

MS. LYNCH: That's definitely the goal.

MR. SHEPHERD: Next is T7, Staff 25. I thought you talked about this a bit, but there is one part of it I still don't understand, and that is the last paragraph on the first page.

I don't understand what you're saying. You're saying that free rider should be zero because of this, which is this paragraph and I don't understand what it means.

Can you help me?

MR. GOULDEN: I can try, Mr. Shepherd.

MR. SHEPHERD: Sure.

MR. GOULDEN: The only people that will be participating in both of those programs are those that are enrolled in the program, and are signed-up for the program.

So to the extent that there are actually results from their participation, there are no free riders.

MR. SHEPHERD: I don't understand why that is. Couldn't that be true of any program, that people who sign-up for the program are people who want to be in the program, and you don't know whether they're free riders or not. Sometimes you know, but mostly you don't.

Why couldn't somebody sign up for a Strategic Energy Management, because they have a plan to do this and you're going to give them money?

MR. GOULDEN: Our assumption is we are finding customers who would otherwise not participate in the program, because the program is a unique offering.

MR. SHEPHERD: But the big customers that you're

targeting for SEM are exactly the people who might have a plan to manage their energy strategically, aren't they?

MR. GOULDEN: If they already have a plan to manage their energy strategically, then they wouldn't be eligible for the program.

MR. SHEPHERD: Well, they're not going to tell you, though, are they? If you're waiving a $100,000 cheque, they're going to say no, no, we don't have a plan. Never mind the thing on the corner of the desk, that's not a plan. Isn't that right?

MR. GOULDEN: That's theoretically an argument you can make, but it is not one we accept.

MR. SHEPHERD: The reason I am asking this is because it sounds like you're not planning to test, as you do with custom, for example, you have -- there's a net-to-gross study going on, right? And you're not planning to test whether there are free riders in this program, are you?

MR. GOULDEN: I think the test would be at the time we would enrol the customers in the program.

MR. SHEPHERD: All right, I see. Next is tab 8, SEC 25. We asked you to confirm that each custom project would have a net positive TRC, or you wouldn't do it. And your answer was no, you don't.

I'm not sure I understand why you would do a project if it didn't have a positive TRC.

MR. GOULDEN: Let me perhaps give an illustrative example. We're not required to screen individual projects, and we haven't screened them. And an example of how you

might have a good project that might have a negative TRC would be something like a building automation system.

So as a result of discussions with the customer, the customer determines they want to install a building automation system. There are a lot of benefits associated with that building automation system. One of the most significant benefits is around the energy savings, but there is other benefits as well. You're saving time, so you're potentially saving staff time. You have potentially greater productivity in the plant as a result of building an automation system.

When we do the project, we would actually identify the costs associated with the building automation system project. We don't necessarily have the ability to peel-out those pieces of the building automation system project that are energy-related. So consequently, in that case, our costing might be conservative, because we would be unable to actually identify those pieces of the building automation system project that are directly related to energy, but it is still a legitimate energy saving project.

So that is an example of where it might be a negative TRC, but still, in our view, a good project.

MR. SHEPHERD: So if that were the case, then, you would presumably screen that project on an overall cost-effectiveness basis, not just TRC, but TRC plus other benefits to make sure that it was at least cost-effective on an overall basis, right?

MR. GOULDEN: No, we don't screen individual projects.

We screen the portfolio.

MR. SHEPHERD: These are big projects, right? Typically they're big projects?

MR. GOULDEN: Yes.

MR. SHEPHERD: So your example is not a really good example, because in fact you wouldn't know whether the project was cost-effective or not.

Forget TRC; you just wouldn't know whether it is cost-effective.

[Witness panel confers]

MR. GOULDEN: We'd certainly use our judgment to determine whether it was a good project or not. So we wouldn't go ahead with the project if we didn't think it was a good project. That is why we have a relationship with our customers.

MR. SHEPHERD: Why wouldn't you do -- I mean, it takes an hour to do a spreadsheet to figure out whether it is cost-effective. Presumably, the client has the customer has the data. Why wouldn't you do that for every one of these projects? They're big enough; you've only have fifty or a hundred of them.

MR. GOULDEN: As I identified, you don't necessarily have the ability to peel-out the energy related costs associated with the project independently.

Consequently, in terms of assessing the project, you don't necessarily have energy-only data that you can use to do screening.

MR. SHEPHERD: But you said you would use your

judgment to see whether there is other benefits, so that if it's negative TRC -- of course, you wouldn't even know whether it is negative TRC, right, because you never do that analysis?

MR. GOULDEN: We don't on an individual project basis. I was hoping to be helpful by providing an illustrative example.

MR. SHEPHERD: So then how do you use your judgment to see whether it's cost-effective on an overall basis, if in fact you don’t even do the calculation of TRC? I'm missing something here.

[Witness panel confers]

MR. GOULDEN: We determine if the project is beneficial to the customer, including having significant energy benefits.

MR. SHEPHERD: But I don't understand how you determine if it's beneficial, if you don't know -- if you can't balance the costs and the benefits.

I mean, if there is any benefit, it doesn't matter how much it costs? I just -- I am missing something here.

MR. GOULDEN: In the example I've given and in the situation where we have negative TRC projects, it is because we can't necessarily monetize all of the benefits aside from the energy benefits, which is what I was trying to identify.

MR. SHEPHERD: Right. Let me move on.

Tab 10, Staff 30. And what we're trying to understand here is you're going to spend -- what is it -- $6 million

UNION GAS LIMITED

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

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

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.

that would provide all of that information.

MR. SHEPHERD: There's nothing --

MS. LYNCH: I have identified areas that we're speaking with these LDCs on specific -- like, specific program areas that we're focusing on at these discussions. So I do have...

MR. SHEPHERD: Okay. Could you provide whatever you have like that?

MS. LYNCH: Yes, we could provide that.

MR. MILLAR: JT2.19.

UNDERTAKING NO. JT2.19: TO PROVIDE THE SPECIFIC PROGRAM AREAS BEING FOCUSED ON AT THE DISCUSSIONS

MR. SHEPHERD: Thank you.

MR. SMITH: Just to be clear, the undertaking was to provide whatever you have "like that," maybe we could get a clear sense --

MR. SHEPHERD: Yeah. That was a technical term. "Like that" is a technical term, meaning as you described, things that are about what you're talking to them about and what their responses are and how much take-up you have and how you're going to overcome the barriers, those sort of things. Okay?

MS. LYNCH: Hmm-hmm.

MR. SHEPHERD: Thanks.

You -- my next question is on T5, Staff 16. And I'm also going to refer to T5, Staff 16.

MR. GOULDEN: Sorry, you said T5, Staff 16, and what was the other one?

MR. SHEPHERD: Fifty. These are actually -- they have funny markings up at the top corner, and I don't know what they mean.

Oh, I think they're from 2014-0273. But they're also filed here in 0029, right?

MR. GOULDEN: Those are some of the attachments to 16.

MR. SHEPHERD: Oh, okay. I see, all right. Well, then that makes it easier.

So I am looking at attachment on page 4 and page 6, and what this appears to say is that for your large volume custom projects in 2013, about 90% of the savings had a less than one-year payback. Is that about right? Or will you accept that, subject to check?

MR. GOULDEN: Yes.

MR. SHEPHERD: That's on page 6, then on page 4 you have the C&I custom projects, and it looks like about 43 percent, 8.4 million m^3 annual savings are one year or less, is that right? Will you accept that, subject to check?

MR. GOULDEN: Yes.

MR. SHEPHERD: Now, you don't -- I think I heard you talk about this earlier today. You don't screen projects for free ridership; like, you don't look and say, well, this is a payback of eight minutes, so obviously you're a free rider and you don't need our money, do you?

MR. GOULDEN: We would eliminate projects, but where there is an obvious free rider.

MR. SHEPHERD: Okay. So I don't understand this. So you've got one here, for example, that has a payback -- you

have a couple that have a payback of 0.1 years, a month.

How would those not be free riders? Do you have customers that wouldn't do one month payback projects?

MR. GOULDEN: They may not do those projects, that's correct.

MR. SHEPHERD: How do you factor-in payback period into screening out free riders?

MR. GOULDEN: We don't directly factor-in payback period in screening out free riders. It is one of many considerations.

MR. SHEPHERD: All right. My next question is tab 5, GEC 45, and I'm on page 4 of 8.

These incentive levels that you have listed for the various measures -- these incentive levels, many of them have ranges. So I wonder if you could undertake to provide us with a table that would tell us what the average actual incentive paid was for each of these, wherever there is a range, what the average actual was?

So, for example, you have air curtains in 2014 was 250 to 1500. But you actually know how many you incented and how much you paid.

MR. SMITH: I think this undertaking has already been given.

MR. SHEPHERD: Has it been?

MR. SMITH: Yes, JT2.16, I believe.

MR. SHEPHERD: Okay. Did that also include the assumed for 2016 to 2020, which also have ranges?

[Witness panel confers]

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 3, Appendix A, pp. 27-30

Regarding the Company's proposed C&I prescriptive rebate program:

a) For each measure on first bulleted lists on p. 27, please provide

i) The number of units the Company rebated in each year from 2012 through 2014.

ii) The first year and lifetime savings that the Company generated from each measure in each year from 2012 through 2014.

iii) The rebate level in effect for each measure from 2012 through 2014.

iv) The rebate level that the Company assumed it would provide from 2016 through 2020 for the measure.

v) The portion of incremental measure cost that rebate is estimated to cover.

vi) The number of units the Company is forecasting it will rebate in each year from 2016 through 2020.

vii) The first year and lifetime savings that the Company is forecasting will come from each measure from 2016 through 2020.

viii) Whether the Company's estimates of per unit savings in 2016 through 2020 for any measure are different than its estimates for 2012 through 2014. If so, for which measures, how are the savings estimates different and why?

ix) Whether the measure is offered in the RETROFIT market or NEW/REPLACEMENT markets. Please list the measure separately if both.

x) The Company's best estimate of the size of the market in its service territory for the measure. For measures purchased at time of natural replacement, that would be the annual number of units sold when existing equipment in buildings are replaced. For measures that can be retrofit (e.g. demand controls for ventilation), the estimate would be the number of units that could be installed in existing buildings.

xi) The Company's best estimate of the baseline market share for each product. For measures purchased at natural time of replacement, percent of all product sales that would be high efficiency absent the Company's program.

b) For the second bulleted list of measures on pp. 27-28 (i.e. those the company says it will explore adding to the prescriptive offering in the future), please:

i) Indicate whether they have been part of the Company's prescriptive programs in the past? For those that were included in the past, please provide the number of units the Company rebated in each year from 2012 through 2014.

ii) Explain why they are not being included right away.

iii) Whether the measure will be offered in the RETROFIT market or NEW/REPLACEMENT markets. Please list the measure separately if both.

iv) Provide the Company's best estimate of the size of the market in its service territory for the measure. For measures purchased at time of natural replacement, that would be the annual number of units sold when existing equipment in buildings are replaced. For measures that can be retrofit (e.g. demand controls for ventilation), the estimate would be the number of units that could be installed in existing buildings.

v) Provide the Company's best estimate of the baseline market share for each product. For measures purchased at natural time of replacement, percent of all product sales that would be high efficiency absent the Company's program.

Response:

a)

i) Number of units Union rebated in each year from 2012 – 2014 (note: "NA" indicates that the technology was not offered that year):

	Units		
CI Prescriptive Measures	2012 - Post Audit	2013 - Post Audit	2014 - Pre Audit
Air Curtains	22	45	31
CEE Tier 2 Front-Loading Clothes Washers	251	NA	NA
Condensing Boilers	429	552	555
Condensing Gas Water Heaters	109	279	146
Energy Star Convection Ovens	2	2	NA
Energy Star Steam Cookers	NA	1	NA
Demand Control Ventilation with CO2 Sensors	NA	NA	163
Destratification Fans	17	40	87
Energy Star Dishwashers	198	201	150
Energy Star Clothes Washers	2	NA	NA
Energy Recovery Ventilator	232	524	528
Energy Star Fryer	100	83	95
Heat Recovery Ventilator	60	173	117
Infrared Heating Unit	1,017	2,054	1,309
Demand Control Kitchen Ventilation Unit	17	19	26
Condensing Make-Up Air Unit	33	50	36
Laundry Washing Equipment with Ozone	101	43	49

ii) First year and lifetime savings Union generated from 2012 – 2014 (note: "NA" indicates that the technology was not offered that year):

	2012 - Post Audit		2013 - Post Audit		2014 - Pre Audit	
CI Prescriptive Measures	First Year m3	Lifetime m3	First Year m3	Lifetime m3	First Year m3	Lifetime m3
Air Curtains	97,694	1,465,413	423,116	6,346,736	87,933	1,318,994
CEE Tier 2 Front-Loading Clothes Washers	26,430	290,733	NA	NA	NA	NA
Condensing Boilers	3,559,977	88,999,429	3,734,870	93,371,747	3,843,574	96,089,351
Condensing Gas Water Heaters	131,375	1,707,869	336,657	4,376,544	172,379	2,240,932
Energy Star Convection Ovens	1,355	16,262	1,355	16,262	NA	NA
Energy Star Steam Cookers	NA	NA	2,579	25,792	NA	NA
Demand Control Ventilation with CO2 Sensors	NA	NA	NA	NA	305,664	3,056,636
Destratification Fans	351,609	5,274,140	754,568	11,318,515	946,784	14,201,764
Energy Star Dishwashers	129,655	1,991,948	136,660	2,102,158	147,058	2,200,502
Energy Star Clothes Washers	79	869	NA	NA	NA	NA
Energy Recovery Ventilator	1,836,334	25,708,683	3,295,687	46,139,617	2,028,378	28,397,291
Energy Star Fryer	86,640	1,039,680	71,911	862,934	107,008	1,284,096
Heat Recovery Ventilator	210,750	2,950,507	732,490	10,254,860	576,049	8,064,681
Infrared Heating Unit	1,457,921	29,158,428	1,925,753	38,515,057	1,558,752	31,175,042
Demand Control Kitchen Ventilation Unit	175,659	2,634,882	145,246	2,178,683	232,898	3,493,473
Condensing Make-Up Air Unit	261,839	3,927,588	591,494	8,872,403	276,608	4,149,121
Laundry Washing Equipment with Ozone	837,547	12,563,204	308,466	4,626,990	442,939	6,644,082

iii) Rebate levels in effect for each measure from 2012 – 2014 (note: "NA" indicates that the technology was not offered that year):

	Incentive Levels		
CI Prescriptive Measures	2012	2013	2014
Air Curtains	$150-$1,200	$250-$1,500	$250-$1,500
CEE Tier 2 Front-Loading Clothes Washers	$50	NA	NA
Condensing Boilers	$600-$4,500	$600-$4,500	$600-$4,500
Condensing Gas Water Heaters	$150	$350	$350
Energy Star Convection Ovens	$200	NA	NA
Energy Star Steam Cookers	$200	NA	NA
Demand Control Ventilation with CO2 Sensors	NA	NA	$100-$350
Destratification Fans	$1,300	$1,300	$1,300
Energy Star Dishwashers	$100-$400	$100-$400	$100-$400
Energy Star Clothes Washers	$50	NA	NA
Energy Recovery Ventilator	$600-$1,500	$600-$1,500	$600-$1,500
Energy Star Fryer	$200	$200	$200
Heat Recovery Ventilator	$400-$700	$400-$700	$400-$700
Infrared Heating Unit	$300	$300	$300
Demand Control Kitchen Ventilation Unit	$1,000-$3,500	$1,200-$4,000	$1,200-$4,000
Condensing Make-Up Air Unit	$300-$2,400	$500-$2,600	$500-$2,600
Laundry Washing Equipment with Ozone	$1,000-$6,000	$1,000-$6,000	$1,000-$6,000

iv) Rebate levels assumed for each measure from 2016 – 2020:

CI Prescriptive Measures	2016-2020 Incentive Levels
Air Curtains	$600-$3,500
CEE Tier 2 Front-Loading Clothes Washers	$200
Condensing Boilers	$600-$4,500
Condensing Gas Water Heaters	$500
Energy Star Convection Ovens	$250
Energy Star Steam Cookers	$250
Demand Control Ventilation with CO2 Sensors	$400-$500
Destratification Fans	$1,800
Energy Star Dishwashers	$200-$450
Energy Star Clothes Washers	$50
Energy Recovery Ventilator	$1,000-$2,500
Energy Star Fryer	$250
Heat Recovery Ventilator	$500-$750
Infrared Heating Unit	$300-$400
Demand Control Kitchen Ventilation Unit	$3,000-$7,500
Condensing Make-Up Air Unit	$1,200-$5,000
Laundry Washing Equipment with Ozone	$4,000-$8,000
Condensing Unit Heaters	$500
Condensing Furnace	$400
Boiler Load Controls	$3,000-$6,000
Combination Boilers	$2,500
Tankless Water Heaters	$750
High-Efficiency Under-Fired Broiler	$250
Demand Control Ventilation with CO2 Sensors (in other commercial segments)	$400-$500

v) The portion of incremental measure cost covered by the 2016-2020 rebates (note: the percentages reflect the average portion of incremental costs covered by the different rebate levels within each measure grouping):

CI Prescriptive Measures	2016-2020 Average % of Incremental Cost Covered by Incentive
Air Curtains	37%
CEE Tier 2 Front-Loading Clothes Washers	33%
Condensing Boilers	25%
Condensing Gas Water Heaters	22%
Energy Star Convection Ovens	29%
Energy Star Steam Cookers	24%
Demand Control Ventilation with CO2 Sensors	34%
Destratification Fans	26%
Energy Star Dishwashers	93%
Energy Star Clothes Washers	33%
Energy Recovery Ventilator	41%
Energy Star Fryer	7%
Heat Recovery Ventilator	29%
Infrared Heating Unit	34%
Demand Control Kitchen Ventilation Unit	34%
Condensing Make-Up Air Unit	49%
Laundry Washing Equipment with Ozone	32%
Condensing Unit Heaters	26%
Condensing Furnace	64%
Boiler Load Controls	37%
Combination Boilers	11%
Tankless Water Heaters	34%
High-Efficiency Under-Fired Broiler	13%
Demand Control Ventilation with CO2 Sensors (in other commercial segments)	34%

vi) Number of units Union forecasted it will rebate from 2016-2020:

	Units				
CI Prescriptive Measures	2016	2017	2018	2019	2020
Air Curtains	55	80	100	100	100
CEE Tier 2 Front-Loading Clothes Washers	600	600	600	600	600
Condensing Boilers	560	560	560	560	560
Condensing Gas Water Heaters	180	100	0	0	0
Energy Star Convection Ovens	15	20	40	40	40
Energy Star Steam Cookers	5	10	20	20	20
Demand Control Ventilation with CO2 Sensors	180	200	225	225	225
Destratification Fans	120	125	125	125	125
Energy Star Dishwashers	225	230	230	230	230
Energy Star Clothes Washers	15	15	15	15	15
Energy Recovery Ventilator	650	675	675	675	675
Energy Star Fryer	100	110	120	120	120
Heat Recovery Ventilator	130	130	130	130	130
Infrared Heating Unit	1800	1900	2000	2000	2000
Demand Control Kitchen Ventilation Unit	40	50	60	60	60
Condensing Make-Up Air Unit	70	86	105	105	105
Laundry Washing Equipment with Ozone	91	98	105	105	105
Condensing Unit Heaters	60	80	100	100	100
Condensing Furnace	60	80	100	100	100
Boiler Load Controls	30	35	40	40	40
Combination Boilers	10	10	10	10	10
Tankless Water Heaters	120	180	240	240	240
High-Efficiency Under-Fired Broiler	30	30	30	30	30
Demand Control Ventilation with CO2 Sensors (in other commercial segments)	120	189	200	200	200

vii) The first year and lifetime savings that the Company is forecasting that will come from each measure from 2016 – 2020:

	2016		2017		2018		2019		2020	
CI Prescriptive Measures	First Year m3	Lifetime m3	First Year m3	Lifetime m3	First Year m3	Lifetime m3	First Year m3	Lifetime m3	First Year m3	Lifetime m3
Air Curtains	315,646	4,734,691	364,511	5,467,668	385,535	5,783,021	385,535	5,783,021	385,535	5,783,021
CEE Tier 2 Front-Loading Clothes Washers	63,180	694,980	63,180	694,980	63,180	694,980	63,180	694,980	63,180	694,980
Condensing Boilers	4,110,024	102,750,606	4,110,024	102,750,606	4,110,024	102,750,606	4,110,024	102,750,606	4,110,024	102,750,606
Condensing Gas Water Heaters	204,065	2,652,842	122,232	1,589,013	0	0	0	0	0	0
Energy Star Convection Ovens	10,272	123,264	13,696	164,352	27,392	328,704	27,392	328,704	27,392	328,704
Energy Star Steam Cookers	35,556	426,672	71,112	853,344	142,224	1,706,688	142,224	1,706,688	142,224	1,706,688
Demand Control Ventilation with CO2 Sensors	332,937	3,329,370	362,519	3,625,187	409,106	4,091,060	409,106	4,091,060	409,106	4,091,060
Destratification Fans	1,305,912	19,588,680	1,360,325	20,404,875	1,360,325	20,404,875	1,360,325	20,404,875	1,360,325	20,404,875
Energy Star Dishwashers	284,812	4,305,401	293,292	4,432,601	293,292	4,432,601	293,292	4,432,601	293,292	4,432,601
Energy Star Clothes Washers	593	6,521	593	6,521	593	6,521	593	6,521	593	6,521
Energy Recovery Ventilator	2,923,912	40,934,763	2,690,344	37,664,822	2,690,344	37,664,822	2,690,344	37,664,822	2,690,344	37,664,822
Energy Star Fryer	112,640	1,351,680	123,904	1,486,848	135,168	1,622,016	135,168	1,622,016	135,168	1,622,016
Heat Recovery Ventilator	878,776	12,302,870	878,776	12,302,870	878,776	12,302,870	878,776	12,302,870	878,776	12,302,870
Infrared Heating Unit	2,345,391	46,907,816	2,506,933	50,138,666	2,668,476	53,369,517	2,668,476	53,369,517	2,668,476	53,369,517
Demand Control Kitchen Ventilation Unit	409,722	6,145,826	525,905	7,888,572	649,869	9,748,040	649,869	9,748,040	649,869	9,748,040
Condensing Make-Up Air Unit	584,930	8,773,945	742,715	11,140,729	917,714	13,765,715	917,714	13,765,715	917,714	13,765,715
Laundry Washing Equipment with Ozone	685,147	10,277,200	730,721	10,960,811	757,097	11,356,457	757,097	11,356,457	757,097	11,356,457
Condensing Unit Heaters	56,790	1,022,220	75,720	1,362,960	94,650	1,703,700	94,650	1,703,700	94,650	1,703,700
Condensing Furnace	6,336	114,048	8,448	152,064	10,560	190,080	10,560	190,080	10,560	190,080
Boiler Load Controls	126,040	1,890,594	147,862	2,217,929	169,684	2,545,263	169,684	2,545,263	169,684	2,545,263
Combination Boilers	94,915	2,277,948	94,915	2,277,948	94,915	2,277,948	94,915	2,277,948	94,915	2,277,948
Tankless Water Heaters	51,749	1,034,978	76,827	1,536,542	101,905	2,038,106	101,905	2,038,106	101,905	2,038,106
High-Efficiency Under-Fired Broiler	89,039	1,068,470	89,039	1,068,470	89,039	1,068,470	89,039	1,068,470	89,039	1,068,470
Demand Control Ventilation with CO2 Sensors (other comm)	188,081	1,880,809	316,141	3,161,413	325,918	3,259,183	325,918	3,259,183	325,918	3,259,183

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p. 36

The evidence indicates that the DSM incentive will be allocated between the scorecards based on the approved program budget shares and that the target amount of $4.18 million will be built into rates to minimize large out of period adjustments. Will the DSM incentive be allocated between the scorecards based on the actual (rather than budgeted) share of costs as part of the true-up? If not, please explain why not?

Response:

As outlined at Exhibit A, Tab 3, p. 36, the target utility incentive and maximum utility incentive for each scorecard is determined based on their respective budget share, not actual budget spend. This methodology is consistent with the Board's direction outlined in Section 5.2 of the Framework. Furthermore, this method ensures that focus is given to each scorecard based on budget share. If this method was revised to allow for the utility incentive to be split between scorecards based on actual spend (instead of budgeted share) then the utility could transfer budget away from an unsuccessful scorecard to a more successful scorecard making that scorecard worth more in utility incentive.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 1, p. 8

Please explain why Union is now proposing to build 100% of the DSM incentive target into rates.

Response:

Union is proposing to build 100% of the DSM incentive target into rates as a direct result of feedback from contract customers (e.g. automotive, manufacturing and greenhouse sectors). Embedding the DSM utility incentive into rates at 100% allows a smaller amount to be either credited/or debited as a true-up based on actual performance, rather than the full out of period charge being applied when actual results are available.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

For each year 2010-2020 please provide the total cost to achieve a cubic meter of gas savings for each of Union's residential programs.

Response:

Please see Attachment 1. Please note 2014 figures are pre-audit.

	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Pre-Audit	2015 Proposed Pre-Inflation	2016 Proposed Pre-Inflation	2017 Proposed Pre-Inflation	2018 Proposed Pre-Inflation	2019 Proposed Pre-Inflation	2020 Proposed Pre-Inflation
Promotion and Incentive Budget ($000)	**$2,888**	**$2,699**	**$2,507**	**$2,828**	**$2,982**	**$2,567**	**$8,745**	**$13,569**	**$15,916**	**$15,916**	**$15,916**
Home Retrofit/Home Reno Rebate	NA	NA	$178	$1,181	$1,997	$2,202	$7,233	$9,880	$12,226	$12,226	$12,226
Behavioural	NA	NA	NA	NA	NA	NA	$1,124	$3,303	$3,303	$3,303	$3,303
Energy Savings Kit	$2,888	$2,699	$2,330	$1,647	$985	$365	$389	$387	$386	$386	$386
Cumulative Natural Gas Savings (000 m³)	**31,014**	**35,085**	**28,941**	**35,726**	**61,660**	**44,839**	**89,941**	**120,075**	**147,587**	**147,840**	**147,840**
Home Retrofit/Home Reno Rebate	NA	NA	1,799	6,073	26,518	33,370	77,951	103,934	129,918	129,918	129,918
Behavioural	NA	NA	NA	NA	NA	NA	NA	4,051	5,570	5,823	5,823
Energy Savings Kit	31,014	35,085	27,141	29,652	35,141	11,469	11,991	12,090	12,100	12,100	12,100
Cost per Cubic Meter ($/m3)	**$0.09**	**$0.08**	**$0.09**	**$0.08**	**$0.05**	**$0.06**	**$0.10**	**$0.11**	**$0.11**	**$0.11**	**$0.11**
Home Retrofit/Home Reno Rebate	NA	NA	$0.10	$0.19	$0.08	$0.07	$0.09	$0.10	$0.09	$0.09	$0.09
Behavioural	NA	NA	NA	NA	NA	NA	NA	$0.82	$0.59	$0.57	$0.57
Energy Savings Kit	$0.09	$0.08	$0.09	$0.06	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03

Figure 1: Behavioural Program Engagement[24]

Utility	State	# of Households	% of Res. Customers
National Grid	MA	400,000	52%
Nicor Gas	IL	330,000	18%
CenterPoint Energy	MN	200,000	27%
North Shore Gas	IL	171,000	20%
Columbia Gas of Ohio	OH	100,000	32%

2.12 Market Potential

A behavioural program is not limited to a specific type of customer, resulting in every customer being eligible to receive a HER. However, in practice control group size and cost effectiveness considerations prevent programs from being rolled out to every customer. In addition, natural gas behavioural programming has not been extended beyond residential customers so its applicability and associated market potential for non-residential customers is not definitive. The market potential varies by utility, but in most cases includes an analysis on the maximum number of customers that can be reached cost effectively. Consumption level is the primary factor in determining the portion of the customer base that should receive reports.

For Union Gas, that equates to about 250,000 Residential customers, with about 42,000 being low-income.[25] Initial identification of SMB market potential is about 30,000 customers. Further analysis should be done for evaluating the market potential of micro-commercial customers once results from the pilot have been evaluated.

2.13 Program Impact Model Summary

Opower requires that at least 50,000 accounts be included in a program for results to be statistically significant – 25,000 treatment group and 25,000 control group (non-program customers). Although the customers within the treatment and control groups must be in the same customer segment, they do not have to display similar natural gas consumption patterns. For example, the Residential/Low-Income treatment group's average consumption does not have to align with the control group. The residential and low-income offerings satisfy the minimum account requirement. However, for SMBs the upper consumption threshold of 5,000 m3 had to be increased to 9,000 m3 in order to reach the required number of customers to produce statistically significant results.

Based on the jurisdictional scan, the business case assumes a 1.5% reduction in consumption for Residential and Low-Income participants, and a 1% reduction for SMBs attributed to the behavioural program. A 1-year measure life, 1% opt-out rate, and a 100% Net-to-Gross ratio were assumed based on Opower data.

The program is projected to realize cumulative m3 savings of more than 63 million over the 5 year program life. This estimate assumes reports are sent to about 205k Residential customers, 41k Low Income customers, and 27k SMB customers.

Move-out's can be handled in several ways, and will be determined during vendor contract negotiations. The business case assumes customers move prior to the winter season, thus

[24] Gas Case Studies, Opower, 17 Dec 2013.

[25] All residential customers, including Low-Income, with annual consumption between 3000 and 5000 m3 annually.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, Appendix A, pp. 14 and 15

Please confirm that the figures on the following spreadsheet are correct. The figures are all 2016-2020 totals, derived from Tables 2 through 6. If any of the figures are incorrect, please provide corrected information.

Residential Program Budget and Forecasts				
'000 omitted				
Category	**Home Reno Rebate**	**Behavioural**	**ESK**	**Total**
Direct Budget	$53,791	$14,336	$1,934	$70,061
Development, Startup, Evaluation and Admin	$8,422	$2,245	$303	$10,970
Total Program	$62,213	$16,581	$2,237	$81,031
Portfolio Costs - Share	$7,914	$2,109	$285	$10,307
Shareholder Incentive	$4,455	$43	$120	$4,618
Total Cost of Savings	$74,582	$18,732	$2,641	$95,956
Forecast CCM	571,637	21,267	60,379	653,283
Cost per CCM (cents)	13.047	88.082	4.375	14.688

Response:

Some figures are incorrect. Please see Table 1 below. Administration is tracked at the program level and cannot be shown by offering, therefore Development and Start-up, and Evaluation does not include Administration (total Administration is shown in the Total column). Shareholder Incentive is derived from each offering's cumulative m^3s attributed to the overall Resource Acquisition scorecard, as well as from the Home Reno Rebate's Participant metric.

Table 1

Residential Program Budget, 2016 to 2020 (000s)				
Category	**Home Reno Rebate**	**Behavioural**	**ESK**	**Total**
Direct Budget	$53,791	$14,336	$1,935	$70,062
Development and Start-up, Evaluation	$3,600	$1,925	$168	$5,693
Administration				$5,275
Total Program	$57,391	$16,261	$2,103	$81,030
Share of portfolio costs	$7,957	$2,339	$313	$10,609
Shareholder Incentive	$4,810	$40	$116	$4,966
Total Cost of Savings	$70,158	$18,640	$2,532	$96,605
Forecast CCM (m3 000)	571,637	21,268	60,379	653,284
Cost per CCM (cents)	12.3	87.6	4.2	14.8

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 3, p. 24

For the Home Reno Rebate Program please explain why Union is using a 15% reduction in annual natural gas use instead of 25%.

Response:

Union is using a 15% reduction in annual natural gas use instead of 25% to reflect that for 2016 – 2020 Union will be changing the approach for modeling the heating system efficiency. It will be modeled as at least 90% AFUE for a furnace and 82% AFUE for a boiler. Please see Union's proposal at Exhibit A, Tab 3, Appendix C, p. 10 for a table outlining the furnace/boiler baseline determination methodology.

This change will reduce the annual savings for heating system and building envelope measures implemented by participants. This is a conservative approach to measuring savings, as it assumes all heating systems are at code even where the existing system efficiency is below this level.

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 3, Appendix A, pp. 2-8

a) How many homes are in what Union considers to be part of the "target market?

b) Regarding the proposed prescriptive rebate levels shown on p. 5:

   i) How were they developed?

   ii) What fraction of incremental cost do they represent?

   iii) How do they compare to Union's current rebate offerings? To its 2014 offerings (if different than current)?

   iv) How was it determined that these levels of incentives would lead to the 2016 forecast target participation level of 3000?

Response:

a) The Home Reno Rebate target market includes residential customers in single family homes (detached, semi-detached, townhouses and individually metered row townhouses) with a natural gas furnace or boiler. Union estimates a target market of approximately 860,000[1] homes.

   Additional factors will impact the likelihood of customers to participate in the Home Reno Rebate offering within this target market, such as:

   - Household characteristics, such as age of the home and natural gas consumption
   - Percentage of customers who have previously retrofitted their homes, including those that participated in the federal *ecoEnergy Retrofit – Homes* program and the provincial *Home Energy Savings Program*

[1] Based on 1,303 previous participants, natural gas heating penetration of 96% and a Low-income rate of 22% amongst 1.150 million single family homes.

b) i) and ii) Rebate amounts were developed with consideration for the cost and natural gas savings potential of the measure. Rebates are highest, for example, for measures that are both expensive and yield strong natural gas savings.

Union has provided considerations in developing the prescriptive rebate levels, as well as the fraction of incremental costs they represent, in Table 1 below.

Table 1
Home Reno Rebate Measures, 2014 Average Rebate as a Fraction of Incremental Cost and Rebate Considerations

Measure	2014 Rebate as a Fraction of Incremental Cost	Considerations in Development of Prescriptive Rebate Levels
Basement Insulation	35%	As insulation measures are the primary focus of the program offering the average rebate as a share of incremental cost was set to be higher than for equipment measures. The incentive for exterior wall insulation was set to be higher due to scale and invasive nature of the project.
Attic Insulation	40%	
Wall Insulation	51%	
Air Sealing	86%	Union pays a large share of the incremental cost due to the high savings available from this upgrade. Air sealing provides the highest estimated savings per rebate dollar of any measure supported by the program offering. Union also established this rebate to ensure homeowners do not overlook air sealing at the time of other retrofits.
Furnace/Boiler	10%	The incentive was established to act as a lead-in for the program offering while ensuring the building envelope upgrades remained the priority in terms of the average share of cost rebated.
Water Heater	8%	Union established this rebate as a lower percentage due to the relatively low savings of the measure.
Window/Door/Skylight	6%	The $40 rebate per window reflects that this measure results in relatively low savings, however it ensures windows are considered as a component of whole-home retrofits. Despite the relatively low rebate, the estimated savings per rebate dollar is lowest of all the measures.

iii) The prescriptive rebate levels at Exhibit A, Tab 3, Appendix A, Table 1 are consistent with Union's current rebate offerings and 2014 offerings.[2]

iv) In forecasting the 3,000 target participation level, Union considered the rebate level in tandem with other factors. Context for Union's targets is provided at Exhibit A, Tab 3, Appendix A, Section 1.0.10 Rationale for Targets.

[2] In Q1 2014, minor adjustments were made to rebates levels relative to 2013 rebate levels. For example, the rebate for attic insulation was adjusted from $600 to $500 (to at least R-50 from R-12 or less) and $300 to $250 (to at least R-50 from R-13 to R-25).

program that the incentives could actually amount to $5,000 per customer. Is that correct?

MS. BROOKS: That's a new maximum cap we're proposing, yes.

MS. GIRVAN: Okay. And I've asked this before, but I guess specifically in this point, I just wondered if you'd surveyed your customers regarding this specific program, if you had had discussions with your customers on this.

And what I'm really looking at is sort of the views of those unable to participate versus those that might be able to participate. Have you done any customer surveys?

[Witness panel confers]

MS. BROOKS: Generally, through our research, customers have shown that they have a preference for incentives, but we have not done anything specific to this program.

MS. GIRVAN: Okay. And did you consider starting with a lower incentive just to see what the take-up would be and then, if you're having trouble getting the take-up, then maybe providing customers with a larger incentive, ramping that up versus saying, "Okay. You know, we'll be willing to provide $5,000"?

MS. BROOKS: So the intention of increasing the cap from our current $2,500 to 5,000 wasn't necessarily to increase take-up, but it was to ensure that we were addressing lost opportunities within the home so that customers would consider more options in the home when we were in the home as opposed to increasing the overall take-

up.

MS. GIRVAN: Okay. Have you done any sensitivity analysis about the incentives, whether, you know, greater incentives would bring in more savings or no, or have you done any of that analysis?

[Witness panel confers]

MS. BROOKS: Not specific to this program, but generally, yes.

MS. GIRVAN: Okay. Thank you. And then could you please turn to tab 5, BOMA No. 14, please?

So the question was whether Union was aware of any studies that determined how homes built to the Ontario Building Code 2012 actually perform relative to the energy modelling results, and the answer was no. And I just wondered why wouldn't you do this, look to see if the homes are actually performing consistent with the modelling results.

MR. GOULDEN: I can maybe help with this, Ms. Girvan.

MS. GIRVAN: Sure.

MR. GOULDEN: I'm aware that there has been some work done at sort of an industry level through some of the Ontario Building Code work underway.

And, effectively, in order to -- to model actual results, you have to identify what arc archetype home you want to model. So is it a big house? Is it a little house? Is it a townhouse? Does it face north? Does it face east? All of that stuff. It's very complex.

So the industry is aware of this, and through the

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 3, p. 32

a) How many of its customers are eligible to participate in RunSmart? Please explain how this number was estimated.

b) How many of its customers are eligible to participate in its SEM program? Please explain how this number was estimated?

c) How were the targets developed? Put another way, why are 25 RunSmart participants and 2 SEM participants reasonable targets? Why are they more reasonable than 50 and 5 program participants, respectively?

Response:

a) As indicated at Exhibit, Tab 3, Appendix A, p. 60, lines 25-28, approximately 1,900 commercial general service customers are eligible to participate in the RunSmart program. Each of the 1,900 customers meets Union's size eligibility criteria of greater than 50,000 m^3 per year consumption of natural gas, and has no prior DSM participation history.

b) As indicated at Exhibit A, Tab 3, Appendix A, p. 61, approximately 100 industrial manufacturing distribution contract customers are eligible to participate in the SEM program. Each of the 100 customers meets Union's size eligibility criteria of greater than 1,000,000 m^3 per year consumption of natural gas.

c) Union used its judgement in establishing participation targets and related budget for the RunSmart and SEM programs, considering:
    1. Cost effectiveness – Union balanced the participation targets against other programs, considering cost effectiveness (i.e. RunSmart and SEM are less cost effective than the other custom programs)
    2. Long-term customer commitments – Achieving the participation targets of 10% of eligible RunSmart customers and 15% of eligible SEM customers will be a challenge, given these new program offers require long-term customer commitments
    3. Scalability – Union has proposed annual participation targets that increase over time, to first establish the programs and then expand over the 2016-2020 timeframe

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 3, p. 33 of 73 "*RunSmart Participants"*

Why is Union limiting focusing on customers without prior DSM participation history for its RunSmart Program, particularly given the empirical evidence from the performance based conservation approach presented in evidence by Environmental Defence in EB-2012-0451 that even buildings with recent efficiency upgrade projects can benefit from the implementing the principles embedded in RunSmart?

Response:

Customers without prior DSM participation history are expected to have a static baseline to demonstrate savings from the RunSmart program. Customers that have previously participated in Union's DSM program may not have a static baseline and may require baseline period adjustments to attribute savings to the activities supported by the RunSmart program. Additionally, this approach is expected to increase new DSM participants.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, Appendix A, p. 54

Please confirm that RunSmart is not available for the 60% of schools in the Union Gas franchise area that are in rates M1 and 01, and is not available to larger schools if they have recently implemented energy conservation measures (i.e. almost all large schools).

Response:

Union confirms that RunSmart is not available to Rate M1/Rate 01 customers, although the custom and prescriptive programs are available to these customers.

Union's proposed RunSmart program is targeted at commercial customers (i.e. Rate M2/Rate 10), consuming greater than 50,000 m^3 per year of natural gas, that have not recently completed energy efficiency projects through its DSM programs. Approximately 400 elementary and secondary schools meet these criteria within Union's franchise.

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 1, p. 10 of 23

> ***"****Union is proposing a Strategic Energy Management offering designed to increase the adoption of an energy management system to establish a baseline for existing operations and to track performance over time for continuous improvement. Incentives are available to support the implementation of a system and for performance improvements throughout the five year term. Taking a comprehensive approach in energy management through monitoring and tracking will assist customers in identifying and prioritizing further improvements and minimizing lost opportunities."*

Why is this offering limited to industrial customers? Given it is similar to Enbridge's Comprehensive Energy Management Program, is there are any possibility to harmonize the names between the utilities?

Response:

The Strategic Energy Management (SEM) program is limited to industrial manufacturing customers because they have the greatest potential for energy savings. SEM is designed to look at consumption variables beyond just comfort heating, such as industrial production and processes that require significant thermal energy. SEM is focused on continuous improvement opportunities, and is intended for customers willing to adopt an energy management system approach to their operation (e.g. ISO 50001).

Union understands that Enbridge's CEM program is similar to Union's, but has some significant differences (e.g. Enbridge CEM program is a single-year evaluation of savings, whereas Union's SEM program is a multi-year evaluation of savings). Consequently, Union does not believe that harmonizing the SEM program name with Enbridge would be appropriate.

program, Mr. Neme, so what we wanted to do was we wanted to identify the biggest customers that we would get involved first. It is conceivable that down the road we will obviously discover how the program works and consequently we might change it at that point.

MR. NEME: Okay. And did you -- did you compare your 1 million cubic metre cut-off to the kind of thresholds that utilities in other jurisdictions that run similar programs use?

MR. GOULDEN: Qualitatively, we did. And what I mean by that is we didn't say, "Who else has got a million cubic metres?" But we sort of did a, you know, rule of thumb, does it feel about the right size?

It was more about the pool of customers, the hundred customers, than it was necessarily about the million cubic metre size. We wanted to deal with a reasonable size pool of customers, and that's where sort of the threshold volume kicked out.

MR. NEME: Okay. And you talked about, in this answer also, that the focus is on contract rate customers. Do you have any other non-contract rate customers that have that level of consumption?

MR. GOULDEN: For the SEM program?

MR. NEME: No, I'm asking just in general.

MR. GOULDEN: Very few. We may have --

MR. NEME: Any reason why they couldn't participate, if they were big enough?

MR. GOULDEN: It may be possible that there's an

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p. 12

Please advise whether Union has reviewed the Energy Leaders and School Energy Competition programs being proposed by Enbridge. If Union has reviewed those programs, why is it not offering them in the Union franchise area? Please advise what programs Union has proposed that are targeted, like Energy Leaders, at C/I customers that are early adopters and/or have already implemented substantial energy savings projects.

Response:

Union was not aware of the Energy Leaders and School Competition program being proposed by Enbridge, prior to filing its Plan. Union has now reviewed the evidence pertaining to the Energy Leaders and School Competition programs proposed by Enbridge, and will further assess the program when additional details are available.

Union has not proposed a program that specifically targets early adopters or customers who have already implemented substantial energy savings projects. However, Union's C/I programs are available to all C/I customers, except for those programs with eligibility criteria (e.g. RunSmart and SEM).

program does apply.

I think Enbridge's answer was we don't have a situation like that, in terms of eligibility. I'm not asking for other ways in which the information is used, but just whether it would rule out any particular building from any program.

MR. GOULDEN: With regards to eligibility, Mr. Brett, specifically with regards to the custom program, there's nothing which hinges on customer size, although certainly bigger customers and bigger projects generally have more attention than smaller projects.

MR. BRETT: I understand.

MR. GOULDEN: However, we also have an extensive national account program.

To your other question yesterday about schools and eligibility --

MR. BRETT: Of buildings, yes.

MR. GOULDEN: Yes, we would -- in our parlance, we would deal with the meter. So it would be the total cubic metres per meter. So it would be per school as opposed to per school board with regards to how we would deal with specific projects.

MR. BRETT: With the eligibility question?

MR. GOULDEN: You're not limited. But again, with regards to eligibility, we care about per meter. Not per entity, like a school board or a national --

MR. BRETT: Okay. So you're different than what Enbridge was telling us, I think.

An Evaluation of Volume Breakpoint and Rate Harmonization Proposals

Union Gas Limited

May 20, 2015

homogeneity is improved by lowering the annual volume breakpoint to 5,000 m^3/year[7]. In support of its argument, Union provides the volume information describing average use by class in Union South under different assumed breakpoints. In addition to the information provided by Union in Table 7 of Exhibit H1, Tab 1, page 19, the following Exhibit provides a calculation of the standard deviation of average usage across customer type within each rate considered:

Exhibit III-1
Union South General Service Rate Class Profiles
(2010 Actual Data)

	Rate M1			Rate M2		
	Annual Volumes (m^3)	Number of Meters	Average Use per Customer (m^3)	Annual Volumes (m^3)	Number of Meters	Average Use per Customer (m^3)
50,000 m^3 Breakpoint						
Residential	2,066,157,260	915,184	2,258	4,623,316	41	112,764
Commercial	561,651,565	73,418	7,650	706,677,068	5,078	139,164
Industrial	51,749,801	3,982	12,996	260,062,298	1,109	234,502
Total	2,679,558,626	992,584	2,700	971,362,682	6,228	155,967
Standard Deviation			5,369			64,039
5,000 m^3 Breakpoint						
Residential	1,949,672,659	898,064	2,171	121,107,917	17,161	7,057
Commercial	90,773,709	42,241	2,149	1,177,554,925	36,255	32,480
Industrial	3,437,553	1,432	2,401	308,374,546	3,659	84,278
Total	2,043,883,921	941,737	2,170	1,607,037,388	57,075	28,157
Standard Deviation			139			39,354

These numbers demonstrate the significant differences in average use per Residential (2,258 m^3/year), Commercial (7,650 m^3/year) and Industrial (12,996 m^3/year) customers within Rate M1 with an assumed 50,000 m^3/year breakpoint and how the average use per Residential, Commercial and Industrial customer within Rate M1 converges (2,171; 2,149; and 2,401 m^3/year, respectively) when the breakpoint is defined at 5,000 m^3/year. This is also confirmed by the calculated standard deviation, which declines from 5,369 to 139 under Union's proposed 5,000 m^3/year breakpoint. The standard deviation calculation also shows that homogeneity has been improved in Rate M2, dropping from 64,039 to 39,354.

[7] Case No. EB-2011-0210, Exhibit H1, Tab 1, Pages 18 to 22.

A similar, but not quite as marked, improvement in rate homogeneity is observed for customers served under Rate 01 in the North:

Exhibit III-2
Union North General Service Rate Class Profiles
(2010 Actual Data)

	Rate 01			Rate 10		
	Annual Volumes (m^3)	Number of Meters	Average Use per Customer (m^3)	Annual Volumes (m^3)	Number of Meters	Average Use per Customer (m^3)
50,000 m^3 Breakpoint						
Residential	614,276,579	272,963	2,250	221,100	4	55,275
Commercial	222,217,874	26,413	8,413	202,757,756	1,619	125,236
Industrial	901,507	33	27,318	41,976,551	112	374,791
Total	837,395,960	299,409	2,797	244,955,407	1,735	141,185
Standard Deviation			13,063			167,959
5,000 m^3 Breakpoint						
Residential	578,531,023	267,742	2,161	35,966,652	5,225	6,884
Commercial	30,835,838	13,498	2,284	394,139,792	14,534	27,118
Industrial	4,456	6	743	42,873,602	139	308,443
Total	609,371,317	281,246	2,167	472,980,046	19,898	23,770
Standard Deviation			857			168,568

While average Industrial customer consumption (743 m^3/year) continues to exhibit a significant difference from the average consumption of all customers served under Rate 01 in the North, Union notes that there are only six Industrial customers classified as smaller customers in the North under the new breakpoint. Furthermore, the calculated standard deviations confirm the improvement in Rate 01 rate homogeneity under Union's proposed 5,000 m^3/year breakpoint (decline from 13,063 to 857). While the standard deviation calculation also shows that homogeneity declines under this proposal in Rate 10 (168,568 under the 5,000 m^3/year breakpoint as compared to 167,959 under the 50,000 m^3/year breakpoint) the increase in standard deviation is quite small (less than 0.5%).

Analysis of Evidence. It is clear that the average usage by type of customer becomes more homogeneous as the volume breakpoint between larger and smaller General Service

Union Residential GS Customers 2010

Class	*Category*	*#*	*Volumes ('000)*	*Average*
M1	Up to 5,000	898,064	1,949,673	2,171
	5,000 to 50,000	17,120	116,484	6,804
01	Up to 5,000	267,742	578,531	2,161
	5,000 to 50,000	5,221	35,746	6,847
Totals	Up to 5,000	1,165,806	2,528,204	2,169
	5,000 to 50,000	22,341	152,230	6,814
	Aggregate	**1,188,147**	**2,680,434**	**2,256**
	Percent	**92%**	**76%**	

Union C/I GS Customers 2010

Class	*Category*	*#*	*Volumes ('000)*	*Average*
M1	Up to 5,000	43,673	94,211	2,157
	5,000 to 50,000	33,727	519,190	15,394
01	Up to 5,000	12,942	30,840	2,383
	5,000 to 50,000	13,504	192,279	14,239
Totals	Up to 5,000	56,615	125,051	2,209
	5,000 to 50,000	47,231	711,469	15,064
	Aggregate	**103,846**	**836,520**	**8,055**
	Percent	**8%**	**24%**	

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, p. 9 and Exhibit A, Tab 3, p. 10

Please confirm that the total proposed allocation to Rates M1/01 for 2015 is $15.223 million, plus any amount from the DSMVA (up to 15% of the total budget, or $5,982 million) plus any shareholder incentive allocated to those classes (up to 40% of the shareholder incentive, or $4.180 million at the maximum). Please confirm that the allocation of DSM costs to those classes applies to all customers in the class, regardless of whether there are programs available for those customers, and regardless of whether the programs offered focus on a subset of that class, such as Residential customers. Please confirm that Union Gas does not have a "Residential customer class".

Response:

Confirmed.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 3, Appendix E, S1

Please calculate the maximum cost proposed to be borne by Rates M1 and 01 customers in each of 2016 through 2020, including the full 15% DSMVA and the share allocated to those classes of the maximum shareholder incentive. For each of those years, and using current volumes, please calculate the unit costs of that total (increase in fixed monthly charge and increase in volumetric charges, or rate riders if that is the expected method of charging customers in those classes). By way of example, provide an estimate that the 2016 total cost to that class will be, say, $44 million, and it will be recovered $1 per month in the fixed monthly charge and $0.0023 per cubic meter in the volumetric charge. Please provide an estimate for each year of the cost of that budget to be borne by a school in M1 with an annual volume of 40,000 cubic meters.

Response:

Please see Attachment 1 for the bill impacts on a Rate 01 and Rate M1 school consuming 40,000 m^3 per year, based on the 2016 to 2020 DSM Plan, including the full 15% DSMVA and the maximum utility incentive.

All DSM costs in Rate 01 and Rate M1 are recovered through volumetric delivery rates.

UNION GAS LIMITED
Maximum Cost of 2016-2020 DSM Program
Bill Impacts by year for a school using 40,000 m³/year under Rate M1 and Rate 01

Line No.	Rate Class	DSM Budget (1) ($000s)	15% DSMVA Overspend ($000s)	15% Low Income Overspend ($000s)	150% Utility Incentive ($000s)	Total Maximum DSM Amount ($000s)	2015 Billing Units (2) (10^3m^3)	Proposed DSM Rates (cents/m^3)	Annual Billing Units (m^3)	Annual Bill Impact ($)
		(a)	(b)	(c)	(d)	(e) = (a+b+c+d)	(f)	(g) = (e / f)	(h)	(i) = (g * h)
	2016									
1	Rate 01	8,628	802	511	1,240	11,181	927,922	1.2050	40,000	482.00
2	Rate M1	23,194	2,392	1,138	4,858	31,582	2,921,516	1.0810	40,000	432.40
	2017									
3	Rate 01	8,734	827	502	1,293	11,355	927,922	1.2237	40,000	489.49
4	Rate M1	23,548	2,466	1,117	5,016	32,146	2,921,516	1.1003	40,000	440.13
	2018									
5	Rate 01	9,939	956	555	1,336	12,786	927,922	1.3779	40,000	551.17
6	Rate M1	26,861	2,847	1,237	5,144	36,089	2,921,516	1.2353	40,000	494.11
	2019									
7	Rate 01	10,225	966	589	1,345	13,126	927,922	1.4145	40,000	565.81
8	Rate M1	27,559	2,880	1,311	5,220	36,971	2,921,516	1.2655	40,000	506.19
	2020									
9	Rate 01	10,618	981	634	1,338	13,571	927,922	1.4626	40,000	585.02
10	Rate M1	28,506	2,924	1,412	5,245	38,087	2,921,516	1.3037	40,000	521.47

Notes:
(1) EB-2015-0029, Exhibit A, Tab 3, Appendix E, Schedule 1, Sum of DSM Program budget, Low Income Program budget and Inflation Factor.
(2) EB-2014-0271, Working Papers, Schedule 4.

Average Consumption per Rate Class
based on Actuals for Year Ended December 31, 2014 (1)

Line No.	Particulars	Annual Volume (m^3) (a)	Number of Customers (b)	Average Volume (m^3) (c)=(a/b)
	General Service			
1	Rate M1 Firm	3,328,692,472	1,078,289	3,087
2	Rate M2 Firm	1,284,427,920	6,940	185,076
3	Rate 01 Firm	1,053,067,393	331,780	3,174
4	Rate 10 Firm	379,430,429	2,019	187,930
5	**Total General Service**	6,045,618,214	1,419,028	
	Contract			
6	Rate M4	484,403,834	154	3,145,479
7	Rate M7	392,255,849	28	14,009,137
8	Rate 20	535,626,300	48	11,158,881
9	Rate 100	1,710,927,884	11	155,538,899
10	Rate T-1	470,810,707	36	13,078,075
11	Rate T-2	4,305,103,293	22	195,686,513
12	Rate M5	259,358,333	82	3,162,906
13	**Total Contract**	8,158,486,199	381	

Notes:

(1) Annual volumes and number of customers as provided at Exhibit A, Tab 1, Appendix A, Schedules 4, 5.

Table 1

UNION GAS LIMITED
Throughput Volume by Service Class and Rate Class
All Customer Rate Classes
Year Ended December 31

Line No.	Volumes in 10^3m^3	Actual: Year 2014 Residential (a)	Commercial (b)	Industrial (d)	Total (f)	
	General Service					
1	Rate M1 Firm	2,503,641	754,225	70,826	3,328,692	
2	Rate M2 Firm	386	919,280	364,762	1,284,428	
3	Rate 01 Firm	766,176	285,639	1,252	1,053,067	
4	Rate 10 Firm		282,474	96,957	379,430	
5	**Total General Service**	**3,270,204**	**2,241,617**	**533,797**	**6,045,618**	
	Contract					
6	Rate M4		124,965	359,439	484,404	
7	Rate M7		148,469	243,786	392,256	
8	Rate 20			535,626	535,626	
9	Rate 100		48,210	1,662,718	1,710,928	
10	Rate T-1		107,399	363,412	470,811	
11	Rate T-2		147,221	4,157,883	4,305,103	
12	Rate M5		159,578	99,780	259,358	
13	**Total Contract**	-	**735,842**	**7,422,645**	**8,158,486**	
14	**Total Throughput Volume**	**3,270,204**	**2,977,459**	**7,956,441**	**14,204,104**	Ties to Exh A/T1/Appendix A/S4
	Rate M9 Firm			67,138	67,138	
	Rate M10 Firm		30	282	312	
	Rate T-3			288,979	288,979	
	Rate 25			186,550	186,550	
	Rate 30				0	
	Total Throughput Volume	**3,270,204**	**2,977,489**	**8,499,390**	**14,747,083**	Ties to Exh A/T1/Appendix A/S1

UNION GAS LIMITED

Answer to Interrogatory from
Green Energy Coalition ("GEC")

Reference: Exhibit A, Tab 1, Appendix A, S4 and S5

For residential customers:

a) What is the company's best estimate of how many are in single-family homes? In answering please explain what you include in your definition of single family.

b) Please provide the average annual consumption in usage deciles (i.e. for the top 10% of customers, for customers in the 80% to 90% decile, for customers in the 70% to 80% decile, etc.). Please provide it separately for all residential, single-family residential and non-single family residential.

Response:

a) Union has approximately 1.1 million residential customers in single-family homes.

b) Average annual consumption in usage deciles for Residential, Single-family Residential, and all Non Single-family Residential customers is provided in Table 1 below.

Table 1

Percentage of Average Consumption	All Residential	Single-family Residential	Non Single-family Residential
Total	2583 m^3	2716 m^3	1830 m^3
Top 10% of users	5301 m^3	5344 m^3	4567 m^3
80-90% of users	3598 m^3	3702 m^3	2541 m^3
70 – 79% of users	3109 m^3	3216 m^3	2171 m^3
60 – 69% of users	2783 m^3	2896 m^3	1931 m^3
50 – 59% of users	2524 m^3	2644 m^3	1738 m^3
40 – 49% of users	2292 m^3	2421 m^3	1561 m^3
30 – 39% of users	2066 m^3	2207 m^3	1381 m^3
20 – 29% of users	1824 m^3	1981 m^3	1173 m^3
10 – 19% of users	1518 m^3	1706 m^3	875 m^3
Bottom 10% of users	818 m^3	1046 m^3	357 m^3

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, p. 12, Table 7
Exhibit A, Tab 3, p. 20, Table 4
Exhibit A, Tab 3, p. 26, Table 5
Exhibit A, Tab 3, p. 32, Table 7

Preamble: In Union's 2015 Resource Acquisition scorecard, the weight allocated to cumulative natural gas savings is 90%. However, in Union's 2016-2020 Resource Acquisition scorecards, the weight allocated to cumulative natural gas savings is 75%.

a) Please provide further rationale for the reduced weighting on cumulative natural gas savings in the 2016-2020 Resource Acquisition scorecards (Exhibit A / Tab 3 / p. 20 / Table 4).

b) Please provide the amount and the percentage of the cumulative natural gas savings in the Resource Acquisition scorecard that will be evaluated using metered/billing data as opposed to modeled or prescriptive savings (Exhibit A / Tab 3 / p. 20 / Table 4).

c) Please provide the amount and the percentage of the cumulative natural gas savings in the Low-Income scorecard that will be evaluated using metered/billing data as opposed to modeled or prescriptive savings (Exhibit A / Tab 3 / p. 26 / Table 5).

d) Please provide the amount and the percentage of the RunSmart savings and Strategic Energy Management savings in the Performance-based scorecard that will be evaluated using metered/billing data as opposed to modeled or prescriptive savings (Exhibit A / Tab 3 / p. 32 / Table 7).

Response:

a) Union endeavoured to strike the appropriate balance between the guiding principles and key priorities as set out in the Framework and Guidelines with the design of its Resource Acquisition scorecard. For 2016-2020 Union has placed a higher weighting on the Home Reno Rebate Participant (Homes) metric based on the Board's key priority: "ensure that programs take a holistic-approach and identify and target all energy savings opportunities throughout a customer's home or business" as outlined in Section 6.2 of the Framework. The metric weighting for Home Reno Rebate (Homes) is in line with the increased level of effort required for this offering within the Resource Acquisition programs. This is evident in the

Residential budget share for Resource Acquisition programs increasing from approximately 22% in 2015 to 48% in 2018.

b) Union's Residential Behavioural offering will utilize a randomized control trial based on metered/billing data to evaluate savings; however, Union currently cannot forecast the amount and percentage of savings as evaluation protocols have not been developed.

Union is unable to forecast the portion of custom projects that will be evaluated using metered/billing data, since project-specific judgement is required to determine if it is appropriate. This judgement is applied based on the characteristics of the project considered. Where savings cannot be shown or attributed using metered/billing data (e.g. new construction), engineering calculations are used to estimate savings.

Prescriptive projects do not use metered/billing data.

c) Please see the response to part b) above.

d) As stated at Exhibit A, Tab 3, Appendix A, p. 56 and p. 59 the savings for RunSmart and Strategic Energy Management offerings will be based on actual metered data.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Allocation of DSM Budget by Rate Class

Line No.	Particulars ($000s)	2015 Approved DSM Budget in Rates (1)	2016 DSM Program Budget	2016 Low Income Program Budget	2016 Inflation Factor Budget	2016 Max Utility Incentive	2016 Total DSM	2017 DSM Program Budget	2017 Low Income Program Budget	2017 Inflation Factor Budget	2017 Max Utility Incentive	2017 Total DSM
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Union North											
1	Rate 01	3,843	5,181	3,304	143	1,240	9,868	5,258	3,189	286	1,293	10,026
2	Rate 10	1,222	1,933	450	40	380	2,804	1,808	434	76	364	2,683
3	Rate 20	1,004	1,681	276	33	351	2,341	1,509	266	60	333	2,168
4	Rate 100	1,852	293	292	10	-	595	274	282	19	-	575
5	Total Union North	7,920	9,089	4,322	225	1,972	15,608	8,850	4,172	441	1,990	15,452
	Union South											
6	Rate M1	10,763	15,455	7,356	383	4,858	28,052	15,676	7,100	772	5,016	28,564
7	Rate M2	4,012	7,665	965	145	1,525	10,300	7,146	931	274	1,460	9,811
8	Rate M4	1,655	3,227	237	58	692	4,215	2,887	229	106	655	3,877
9	Rate M5A	2,763	2,214	252	41	470	2,977	1,983	244	75	445	2,747
10	Rate M7	933	2,233	80	39	468	2,820	2,005	77	71	443	2,595
11	Rate T1	1,855	1,679	204	32	466	2,381	1,448	197	56	442	2,143
12	Rate T2	2,687	517	812	22	-	1,351	484	784	43	-	1,311
13	Total Union South	24,668	32,990	9,908	721	8,478	52,096	31,629	9,562	1,396	8,460	51,047
14	Total Union (line 5 + line 13)	32,588	42,078	14,230	946	10,450	67,704	40,478	13,734	1,837	10,450	66,499

Notes:
(1) Per EB-2014-0271, Working Papers, Schedule 11. Includes inflation factor of 1.68%.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Allocation of DSM Budget by Rate Class

Line No.	Particulars ($000s)	2018 DSM Program Budget	2018 Low Income Program Budget	2018 Inflation Factor Budget	2018 Max Utility Incentive	2018 Total DSM	2019 DSM Program Budget	2019 Low Income Program Budget	2019 Inflation Factor Budget	2019 Max Utility Incentive	2019 Total DSM	2020 DSM Program Budget	2020 Low Income Program Budget	2020 Inflation Factor Budget	2020 Max Utility Incentive	2020 Total DSM
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
	Union North															
1	Rate 01	5,980	3,475	485	1,336	11,275	5,943	3,623	659	1,345	11,570	5,933	3,837	849	1,338	11,956
2	Rate 10	1,917	473	123	351	2,864	1,882	494	164	347	2,887	1,897	523	210	348	2,978
3	Rate 20	1,525	290	93	317	2,226	1,471	302	122	308	2,204	1,490	320	157	306	2,273
4	Rate 100	283	307	30	-	621	292	320	42	-	654	301	339	56	-	695
5	Total Union North	9,705	4,546	730	2,005	16,986	9,588	4,739	987	2,001	17,315	9,620	5,019	1,272	1,991	17,902
	Union South															
6	Rate M1	17,815	7,737	1,310	5,144	32,005	17,717	8,066	1,777	5,220	32,780	17,686	8,542	2,278	5,245	33,751
7	Rate M2	7,031	1,015	412	1,407	9,865	6,915	1,058	549	1,389	9,911	6,973	1,120	703	1,391	10,188
8	Rate M4	2,917	250	162	625	3,954	2,814	260	212	607	3,893	2,850	276	271	602	3,998
9	Rate M5A	2,004	265	116	425	2,810	1,933	277	152	413	2,774	1,957	293	195	409	2,854
10	Rate M7	2,026	84	108	422	2,641	1,954	88	141	411	2,593	1,979	93	180	407	2,659
11	Rate T1	1,467	215	86	421	2,190	1,400	224	112	410	2,145	1,423	237	144	406	2,210
12	Rate T2	499	854	69	-	1,423	515	891	97	-	1,503	530	943	128	-	1,602
13	Total Union South	33,759	10,420	2,264	8,445	54,888	33,246	10,863	3,040	8,449	55,598	33,398	11,504	3,901	8,459	57,261
14	Total Union (line 5 + line 13)	43,464	14,966	2,995	10,450	71,874	42,834	15,602	4,027	10,450	72,914	43,018	16,523	5,172	10,450	75,163

UNION GAS LIMITED
2015 - 2020 DSM Plan
Bill Impacts - Including Union's Rate M7 Proposal

Line No.	Rate Class	2015 DSM Budget in Rates (1) ($000s) (a)	Percent of Total Budget (%) (b)	2016 Proposed DSM Budget (2) ($000s) (c)	Percent of Total Budget (%) (d)	2015 Billing Units (1) (10^3m^3) (e)	2015 DSM Rate In Rates (cents/m^3) (f) = (a / e)	2016 Proposed DSM Rates (cents/m^3) (g) = (c / e)	Change from 2015 to 2016 (%) (h)	Change from 2015 to 2016 ($) (i) = (g - f) * (j)	Representative Annual Billing Units (m^3) (j)	Total 2016 DSM Amounts in Bill: Annual Bill Impacts ($) (k) = (g * j)	Total 2016 DSM Amounts in Bill: Monthly Bill Impacts ($) (l) = (k / 12)	Jan 2015 QRAM Total Bill (3) ($) (m)	Percent of Bill (%) (n) = (k / m)
	Union North														
1	Rate 01 - small	3,843	12%	9,868	15%	927,922	0.4142	1.0635	157%	14.29	2,200	23.40	1.95	1,033	2.3%
2	Rate 10 - large	1,222	4%	2,804	4%	346,746	0.3523	0.8087	130%	1,141	250,000	2,022	168.47	76,478	2.6%
3	Rate 20 - large	1,004	3%	2,341	3%	618,460	0.1623	0.3785	133%	32,439	15,000,000	56,781	4,731.74	3,686,149	1.5%
4	Rate 100 - large	1,852	6%	595	1%	1,857,374	0.0997	0.0320	-68%	(162,420)	240,000,000	76,858	6,404.85	60,449,971	0.1%
5	Total Union North	7,920	24%	15,608	23%										
	Union South														
6	Rate M1 - small	10,763	33%	28,052	41%	2,921,516	0.3684	0.9602	161%	13.02	2,200	21.12	1.76	755	2.8%
7	Rate M2 - large	4,012	12%	10,300	15%	1,146,167	0.3501	0.8986	157%	1,371	250,000	2,247	187.21	56,836	4.0%
8	Rate M4 - small	1,655	5%	3,698	5%	381,593	0.4337	0.9692	123%	4,685	875,000	8,481	706.71	197,728	4.3%
9	Rate M5 - large	2,763	8%	4,960	7%	511,770	0.5399	0.9692	80%	27,906	6,500,000	62,998	5,249.84	1,368,969	4.6%
10	Rate M7 - large	933	3%	1,353	2%	139,645	0.6679	0.9692	45%	108,462	36,000,000	348,912	29,076.02	7,272,749	4.8%
11	Rate T1 - average	1,855	6%	2,381	4%	529,553	0.3503	0.4496	28%	11,492	11,565,938	52,002	4,333.52	2,324,627	2.2%
12	Rate T2 - average	2,687	8%	1,351	2%	4,732,620	0.0568	0.0286	-50%	(55,802)	197,789,850	56,479	4,706.57	37,503,575	0.2%
13	Total Union South	24,668	76%	52,096	77%										
14	Total Union	32,588	100%	67,704	100%										
15	Total Rate 01 & M1	14,606	45%	37,920	56%	3,849,438	0.3794	0.9851	160%	13.32	2,200	21.67	1.81		
16	Total Rate M4, M5 & M7	5,351	16%	10,012	31%	1,033,009	0.5180	0.9692							

Notes:
(1) EB-2014-0271, Working Papers, Schedule 4. 2015 DSM Budget does not include any incentive amount in approved rates.
(2) Proposed 2016 budget of $57.3 million and 150% utility incentive of $10.5 million.
(3) Total Sales Service Bill based on EB-2014-0356 (January 2015 QRAM) excluding price adjustments.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Bill Impacts - Including Union's Rate M7 Proposal

Line No.	Rate Class	2015 DSM Budget in Rates (1) ($000s)	Percent of Total Budget (%)	2017 Proposed DSM Budget (2) ($000s)	Percent of Total Budget (%)	2015 Billing Units (1) (10^3m^3)	2015 DSM Rate In Rates (cents/m^3)	2017 Proposed DSM Rates (cents/m^3)	Change from 2015 to 2017 (%)	Change from 2015 to 2017 ($)	Representative Annual Billing Units (m^3)	Total 2017 DSM Amounts in Bill: Annual Bill Impacts ($)	Total 2017 DSM Amounts in Bill: Monthly Bill Impacts ($)	Jan 2015 QRAM Total Bill (3) ($)	Percent of Bill (%)
		(a)	(b)	(c)	(d)	(e)	(f) = (a / e)	(g) = (c / e)	(h)	(i) = (g - f) * (j)	(j)	(k) = (g * j)	(l) = (k / 12)	(m)	(n) = (k / m)
	Union North														
1	Rate 01 - small	3,843	12%	10,026	15%	927,922	0.4142	1.0805	161%	14.66	2,200	23.77	1.98	1,033	2.3%
2	Rate 10 - large	1,222	4%	2,683	4%	346,746	0.3523	0.7736	120%	1,053	250,000	1,934	161.18	76,478	2.5%
3	Rate 20 - large	1,004	3%	2,168	3%	618,460	0.1623	0.3506	116%	28,244	15,000,000	52,586	4,382.17	3,686,149	1.4%
4	Rate 100 - large	1,852	6%	575	1%	1,857,374	0.0997	0.0310	-69%	(164,954)	240,000,000	74,324	6,193.69	60,449,971	0.1%
5	Total Union North	7,920	24%	15,452	23%										
	Union South														
6	Rate M1 - small	10,763	33%	28,564	43%	2,921,516	0.3684	0.9777	165%	13.40	2,200	21.51	1.79	755	2.8%
7	Rate M2 - large	4,012	12%	9,811	15%	1,146,167	0.3501	0.8559	145%	1,265	250,000	2,140	178.32	56,836	3.8%
8	Rate M4 - small	1,655	5%	3,405	5%	381,593	0.4337	0.8924	106%	4,013	875,000	7,808	650.71	197,728	3.9%
9	Rate M5 - large	2,763	8%	4,567	7%	511,770	0.5399	0.8924	65%	22,914	6,500,000	58,006	4,833.82	1,368,969	4.2%
10	Rate M7 - large	933	3%	1,246	2%	139,645	0.6679	0.8924	34%	80,812	36,000,000	321,263	26,771.90	7,272,749	4.4%
11	Rate T1 - average	1,855	6%	2,143	3%	529,553	0.3503	0.4046	16%	6,284	11,565,938	46,794	3,899.53	2,324,627	2.0%
12	Rate T2 - average	2,687	8%	1,311	2%	4,732,620	0.0568	0.0277	-51%	(57,483)	197,789,850	54,798	4,566.48	37,503,575	0.1%
13	Total Union South	24,668	76%	51,047	77%										
14	Total Union	32,588	100%	66,499	100%										
15	Total Rate 01 & M1	14,606	45%	38,590	58%	3,849,438	0.3794	1.0025	164%	13.71	2,200	22.05	1.84		
16	Total Rate M4, M5 & M7	5,351	16%	9,219	28%	1,033,009	0.5180	0.8924							

Notes:
(1) EB-2014-0271, Working Papers, Schedule 4. 2015 DSM Budget does not include any incentive amount in approved rates.
(2) Proposed 2017 budget of $56.0 million and 150% utility incentive of $10.5 million.
(3) Total Sales Service Bill based on EB-2014-0356 (January 2015 QRAM) excluding price adjustments.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Bill Impacts - Including Union's Rate M7 Proposal

Line No.	Rate Class	2015 DSM Budget in Rates (1) ($000s) (a)	Percent of Total Budget (%) (b)	2018 Proposed DSM Budget (2) ($000s) (c)	Percent of Total Budget (%) (d)	2015 Billing Units (1) (10^3m^3) (e)	2015 DSM Rate In Rates (cents/m^3) (f) = (a / e)	2018 Proposed DSM Rates (cents/m^3) (g) = (c / e)	Change from 2015 to 2018 (%) (h)	Change from 2015 to 2018 ($) (i) = (g - f) * (j)	Representative Annual Billing Units (m^3) (j)	Total 2018 DSM Amounts in Bill: Annual Bill Impacts ($) (k) = (g * j)	Total 2018 DSM Amounts in Bill: Monthly Bill Impacts ($) (l) = (k / 12)	Jan 2015 QRAM Total Bill (3) ($) (m)	Percent of Bill (%) (n) = (k / m)
	Union North														
1	Rate 01 - small	3,843	12%	11,275	16%	927,922	0.4142	1.2151	193%	17.62	2,200	26.73	2.23	1,033	2.6%
2	Rate 10 - large	1,222	4%	2,864	4%	346,746	0.3523	0.8261	134%	1,184	250,000	2,065	172.10	76,478	2.7%
3	Rate 20 - large	1,004	3%	2,226	3%	618,460	0.1623	0.3599	122%	29,640	15,000,000	53,982	4,498.52	3,686,149	1.5%
4	Rate 100 - large	1,852	6%	621	1%	1,857,374	0.0997	0.0334	-66%	(159,086)	240,000,000	80,193	6,682.73	60,449,971	0.1%
5	Total Union North	7,920	24%	16,986	24%										
	Union South														
6	Rate M1 - small	10,763	33%	32,005	45%	2,921,516	0.3684	1.0955	197%	16.00	2,200	24.10	2.01	755	3.2%
7	Rate M2 - large	4,012	12%	9,865	14%	1,146,167	0.3501	0.8607	146%	1,277	250,000	2,152	179.32	56,836	3.8%
8	Rate M4 - small	1,655	5%	3,474	5%	381,593	0.4337	0.9104	110%	4,171	875,000	7,966	663.84	197,728	4.0%
9	Rate M5 - large	2,763	8%	4,659	6%	511,770	0.5399	0.9104	69%	24,085	6,500,000	59,176	4,931.37	1,368,969	4.3%
10	Rate M7 - large	933	3%	1,271	2%	139,645	0.6679	0.9104	36%	87,296	36,000,000	327,746	27,312.19	7,272,749	4.5%
11	Rate T1 - average	1,855	6%	2,190	3%	529,553	0.3503	0.4135	18%	7,316	11,565,938	47,826	3,985.52	2,324,627	2.1%
12	Rate T2 - average	2,687	8%	1,423	2%	4,732,620	0.0568	0.0301	-47%	(52,796)	197,789,850	59,484	4,957.03	37,503,575	0.2%
13	Total Union South	24,668	76%	54,888	76%										
14	Total Union	32,588	100%	71,874	100%										
15	Total Rate 01 & M1	14,606	45%	43,280	60%	3,849,438	0.3794	1.1243	196%	16.39	2,200	24.74	2.06		
16	Total Rate M4, M5 & M7	5,351	16%	9,405	29%	1,033,009	0.5180	0.9104							

Notes:
(1) EB-2014-0271, Working Papers, Schedule 4. 2015 DSM Budget does not include any incentive amount in approved rates.
(2) Proposed 2018 budget of $61.4 million and 150% utility incentive of $10.5 million.
(3) Total Sales Service Bill based on EB-2014-0356 (January 2015 QRAM) excluding price adjustments.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Bill Impacts - Including Union's Rate M7 Proposal

Line No.	Rate Class	2015 DSM Budget in Rates (1) ($000s)	Percent of Total Budget (%)	2019 Proposed DSM Budget (2) ($000s)	Percent of Total Budget (%)	2015 Billing Units (1) (10^3m^3)	2015 DSM Rate In Rates (cents/m^3)	2019 Proposed DSM Rates (cents/m^3)	Change from 2015 to 2019 (%)	Change from 2015 to 2019 ($)	Representative Annual Billing Units (m^3)	Total 2019 DSM Amounts in Bill: Annual Bill Impacts ($)	Total 2019 DSM Amounts in Bill: Monthly Bill Impacts ($)	Jan 2015 QRAM Total Bill (3) ($)	Percent of Bill (%)
		(a)	(b)	(c)	(d)	(e)	(f) = (a / e)	(g) = (c / e)	(h)	(i) = (g - f) * (j)	(j)	(k) = (g * j)	(l) = (k / 12)	(m)	(n) = (k / m)
	Union North														
1	Rate 01 - small	3,843	12%	11,570	16%	927,922	0.4142	1.2469	201%	18.32	2,200	27.43	2.29	1,033	2.7%
2	Rate 10 - large	1,222	4%	2,887	4%	346,746	0.3523	0.8325	136%	1,200	250,000	2,081	173.44	76,478	2.7%
3	Rate 20 - large	1,004	3%	2,204	3%	618,460	0.1623	0.3564	120%	29,115	15,000,000	53,458	4,454.80	3,686,149	1.5%
4	Rate 100 - large	1,852	6%	654	1%	1,857,374	0.0997	0.0352	-65%	(154,730)	240,000,000	84,549	7,045.73	60,449,971	0.1%
5	Total Union North	7,920	24%	17,315	24%										
	Union South														
6	Rate M1 - small	10,763	33%	32,780	45%	2,921,516	0.3684	1.1220	205%	16.58	2,200	24.68	2.06	755	3.3%
7	Rate M2 - large	4,012	12%	9,911	14%	1,146,167	0.3501	0.8647	147%	1,287	250,000	2,162	180.15	56,836	3.8%
8	Rate M4 - small	1,655	5%	3,421	5%	381,593	0.4337	0.8964	107%	4,048	875,000	7,844	653.63	197,728	4.0%
9	Rate M5 - large	2,763	8%	4,588	6%	511,770	0.5399	0.8964	66%	23,175	6,500,000	58,266	4,855.53	1,368,969	4.3%
10	Rate M7 - large	933	3%	1,252	2%	139,645	0.6679	0.8964	34%	82,255	36,000,000	322,706	26,892.15	7,272,749	4.4%
11	Rate T1 - average	1,855	6%	2,145	3%	529,553	0.3503	0.4050	16%	6,333	11,565,938	46,843	3,903.61	2,324,627	2.0%
12	Rate T2 - average	2,687	8%	1,503	2%	4,732,620	0.0568	0.0317	-44%	(49,486)	197,789,850	62,794	5,232.84	37,503,575	0.2%
13	Total Union South	24,668	76%	55,598	76%										
14	Total Union	32,588	100%	72,914	100%										
15	Total Rate 01 & M1	14,606	45%	44,350	61%	3,849,438	0.3794	1.1521	204%	17.00	2,200	25.35	2.11		
16	Total Rate M4, M5 & M7	5,351	16%	9,260	28%	1,033,009	0.5180	0.8964							

Notes:
(1) EB-2014-0271, Working Papers, Schedule 4. 2015 DSM Budget does not include any incentive amount in approved rates.
(2) Proposed 2019 budget of $62.5 million and 150% utility incentive of $10.5 million.
(3) Total Sales Service Bill based on EB-2014-0356 (January 2015 QRAM) excluding price adjustments.

UNION GAS LIMITED
2015 - 2020 DSM Plan
Bill Impacts - Including Union's Rate M7 Proposal

Line No.	Rate Class	2015 DSM Budget in Rates (1) ($000s) (a)	Percent of Total Budget (%) (b)	2020 Proposed DSM Budget (2) ($000s) (c)	Percent of Total Budget (%) (d)	2015 Billing Units (1) (10^3m^3) (e)	2015 DSM Rate In Rates (cents/m^3) (f) = (a / e)	2020 Proposed DSM Rates (cents/m^3) (g) = (c / e)	Change from 2015 to 2020 (%) (h)	Change from 2015 to 2020 ($) (i) = (g - f) * (j)	Representative Annual Billing Units (m^3) (j)	Total 2020 DSM Amounts in Bill: Annual Bill Impacts ($) (k) = (g * j)	Total 2020 DSM Amounts in Bill: Monthly Bill Impacts ($) (l) = (k / 12)	Jan 2015 QRAM Total Bill (3) ($) (m)	Percent of Bill (%) (n) = (k / m)
	Union North														
1	Rate 01 - small	3,843	12%	11,956	16%	927,922	0.4142	1.2885	211%	19.23	2,200	28.35	2.36	1,033	2.7%
2	Rate 10 - large	1,222	4%	2,978	4%	346,746	0.3523	0.8588	144%	1,266	250,000	2,147	178.91	76,478	2.8%
3	Rate 20 - large	1,004	3%	2,273	3%	618,460	0.1623	0.3675	126%	30,786	15,000,000	55,129	4,594.05	3,686,149	1.5%
4	Rate 100 - large	1,852	6%	695	1%	1,857,374	0.0997	0.0374	-62%	(149,433)	240,000,000	89,845	7,487.11	60,449,971	0.1%
5	Total Union North	7,920	24%	17,902	24%										
	Union South														
6	Rate M1 - small	10,763	33%	33,751	45%	2,921,516	0.3684	1.1553	214%	17.31	2,200	25.42	2.12	755	3.4%
7	Rate M2 - large	4,012	12%	10,188	14%	1,146,167	0.3501	0.8888	154%	1,347	250,000	2,222	185.18	56,836	3.9%
8	Rate M4 - small	1,655	5%	3,513	5%	381,593	0.4337	0.9207	112%	4,261	875,000	8,057	671.38	197,728	4.1%
9	Rate M5 - large	2,763	8%	4,712	6%	511,770	0.5399	0.9207	71%	24,757	6,500,000	59,848	4,987.36	1,368,969	4.4%
10	Rate M7 - large	933	3%	1,286	2%	139,645	0.6679	0.9207	38%	91,017	36,000,000	331,468	27,622.32	7,272,749	4.6%
11	Rate T1 - average	1,855	6%	2,210	3%	529,553	0.3503	0.4173	19%	7,755	11,565,938	48,266	4,022.14	2,324,627	2.1%
12	Rate T2 - average	2,687	8%	1,602	2%	4,732,620	0.0568	0.0338	-40%	(45,347)	197,789,850	66,934	5,577.81	37,503,575	0.2%
13	Total Union South	24,668	76%	57,261	76%										
14	Total Union	32,588	100%	75,163	100%										
15	Total Rate 01 & M1	14,606	45%	45,707	61%	3,849,438	0.3794	1.1874	213%	17.77	2,200	26.12	2.18		
16	Total Rate M4, M5 & M7	5,351	16%	9,511	29%	1,033,009	0.5180	0.9207							

Notes:
(1) EB-2014-0271, Working Papers, Schedule 4. 2015 DSM Budget does not include any incentive amount in approved rates.
(2) Proposed 2020 budget of $64.7 million and 150% utility incentive of $10.5 million.
(3) Total Sales Service Bill based on EB-2014-0356 (January 2015 QRAM) excluding price adjustments.

UNION GAS LIMITED
2020 DSM Plan
Average Savings for DSM Participating Customers by Rate Class

Line No.	Rate Class	Average Annual Savings Per Participant (m^3)	Representative Annual Billing Units (m^3)	Average Variable Unit Rate (1) (cents/m^3)	Annual Savings ($)	Annual Cost in Rates (2) ($)	Annual Difference ($)	Monthly Savings ($)	Monthly Cost in Rates ($)	Monthly Difference ($)
		(a)	(b)	(c)	(d) = (a * c)	(e)	(f) = (d -e)	(g) = (d / 12)	(h) = (e / 12)	(i) = (g - h)
	Union North (3)									
1	Rate 01	65	2,200	35.2540	22.93	26.44	(3.52)	1.91	2.20	(0.29)
2	Rate 10	12,532	250,000	30.0320	3,764	1,996	1,767	314	166	147
3	Rate 20	410,796	15,000,000	24.1607	99,251	50,682	48,569	8,271	4,224	4,047
4	Rate 100	-	240,000,000	23.9014	0	89,845	(89,845)	0	7,487	(7,487)
	Union South									
5	Rate M1	65	2,200	22.7024	14.76	23.05	(8.29)	1.23	1.92	(0.69)
6	Rate M2	12,366	250,000	22.3858	2,768	2,040	728	231	170	61
7	Rate M4	187,479	875,000	19.4358	36,438	7,337	29,101	3,036	611	2,425
8	Rate M5	253,108	6,500,000	20.7493	52,518	54,500	(1,982)	4,377	4,542	(165)
9	Rate M7	491,824	14,000,000	18.7845	92,387	117,384	(24,997)	7,699	9,782	(2,083)
10	Rate T1	318,583	11,565,938	18.5976	59,249	42,950	16,299	4,937	3,579	1,358
11	Rate T2	-	197,789,850	18.4632	0	66,934	(66,934)	0	5,578	(5,578)

Notes:
(1) Derived from EB-2014-0356. Average variable unit rate excludes all monthly fixed charges.
(2) Exhibit A, Tab 3, Appendix F, Schedule 3.
(3) Representative bills and savings for Union North were based on Eastern Zone.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Tab 1, p. 7

Please explain how Union has calculated the average bill impact for residential consumers in 2020 as $2.00. Does this include all costs including shareholder incentive amounts?

Response:

The 2020 DSM amount of approximately $2.00 per month included in rates for the average residential customer is provided at Exhibit A, Tab 3, Appendix E, Schedule 2, line 15. Please see the table below for the calculation.

Calculation of Average Bill Impact
for Residential Rate 01 and Rate M1 Customers in 2020

Line No.	Particulars (000's)	Rate 01 (a)	Rate M1 (b)	Total 01/M1 (c) = (a + b)
	Proposed 2020 DSM			
1	100% DSM Budget	10,618	28,506	39,124
2	100% Incentive at Target	535	2,098	2,633
3	Total Rate 01/M1 (line 1+ line 2)	11,153	30,604	41,757
4	2015 Annual Billing Units	927,922	2,921,516	3,849,438
5	Unit Rate (line 3 / line 4) (cents/m^3)			1.0848
6	Annual Residential Volume (m^3)			2,200
7	Annual Bill Impact (line 5 * line 6) ($)			23.86
8	Monthly Bill Impact (line 7/12) ($)			1.99

The total 2020 proposed DSM budget for Rate M1 and Rate 01 of $41.757 million includes a shareholder incentive of $2.633 million (the DSM incentive at target).

UNION GAS LIMITED

Answer to Interrogatory from
London Property Management Association ("LPMA")

Reference: Exhibit A, Tab 3, p. 10 and Exhibit A, Tab 1, Appendix A, Schedule 4

a) Please explain what Union means by the residential customer class. Does this mean Rates M1 and 01 only?

b) Will Union be allocating any residential program costs to rate M2 or 10?

c) Will Union be allocating any of the commercial/industrial program costs to rates M1 or 01 given that they include significant numbers of commercial and industrial customers, as shown in Schedule 4, of Exhibit A, Tab 1, Appendix A?

Response:

a) Under the Customer Service Standards approved by the OEB, residential customers are defined by service class including Rate M1, Rate 01 and Rate M2. Service class Rate M1 and Rate 01 have usage less than 50,000 m^3 per year and service class Rate M2 has usage above 50,000 m^3 per year.

b) Union will not be allocating any Residential program costs to Rate M2 or Rate 10. There are no Rate 10 Residential customers and an insignificant number (less than 50) of Rate M2 Residential customers.

c) Yes, Union will be allocating a portion of the Commercial/Industrial program costs to Rate M1 and Rate 01 based on the methodology outlined in Exhibit A, Tab 3, p. 10.

Union's 2016 DSM Budget per rate class

Line No.	Particulars ($000s)	Residential		Commercial / Industrial		Performance-Based		Large Volume		Market Transformation		Low Income		Sub Total		Inflation
		Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	Program Budget	Portfolio Budget Allocation	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	m = (a + c + e + g + i + k)	n = (b + d + f + h + j + l)	
	Union North															
1	Rate 01	3,036	771	882	160	1	5			261	66	2,635	669	6,815	1,670	143
2	Rate 10			1,578	319	27	9					359	91	1,964	420	40
3	Rate 20			1,238	373	60	11					220	56	1,518	439	33
4	Rate 100							293				233	59	526	59	10
5	Total Union North	3,036	771	3,699	852	88	24	293	-	261	66	3,447	875	10,823	2,588	225
	Union South															
6	Rate M1	9,109	2,312	2,537	496	7	14			782	198	5,867	1,489	18,301	4,510	383
7	Rate M2			5,724	1,798	106	37					770	195	6,599	2,030	145
8	Rate M4			2,359	733	114	21					189	48	2,662	802	58
9	Rate M5A			1,623	498	79	14					201	51	1,902	564	41
10	Rate M7			1,644	496	80	14					64	16	1,787	526	39
11	Rate T1			1,095	495	75	14					163	41	1,333	550	32
12	Rate T2							517				648	164	1,165	164	22
13	Total Union South	9,109	2,312	14,981	4,516	460	115	517	-	782	198	7,902	2,006	33,750	9,147	721
14	Total Union (line 5 + line 13)	12,145	3,083	18,680	5,368	548	139	809	-	1,042	264	11,349	2,881	44,573	11,735	946

column H, and am I right in assuming that that's the closest you've got to the rate increase impact for individual classes? So 190 percent increase for rate 1, for example?

MR. TETREAULT: Yes. That 190 percent represents the -- essentially the difference between 3.8 million in 2015 rates and 11.1 for rate 1 in 2020.

MR. SHEPHERD: Yes. It's actually calculated as the difference between the volumetric rate in 2015 and the volumetric rate in 2020, isn't it?

MR. TETREAULT: Yes. It's using a unitized rate, Mr. Shepherd, to perform that calc, but based on the same billing units.

MR. SHEPHERD: And so that impact for the smaller customers in a class, it would overstate their impact because they have some of their rate. Their bill is fixed charge. But for the larger customers in the class, it would be much closer to what the actual bill impact is. Right?

MR. TETREAULT: I'm not sure I can agree with you with regard to the fixed charge. None of these costs are recovered in a fixed monthly charge.

They're all recovered in volumetric rates.

MR. SHEPHERD: Well, that's exactly my point. So if you're a small customer in rate 1, for example, your volumetric rate is going to go up 190 percent, but that's only half your bill, whereas if you're a large customer in that class, it is almost all your bill.

MR. TETREAULT: From that perspective, that's fair.

MR. SHEPHERD: Okay. Thanks.

MR. DeROSE: If I can turn you, then, to -- unless, Jay, are you done?

MR. SHEPHERD: Yes.

MR. DeROSE: Okay. If I can then turn you to the last topic, and if I can turn you to tab 2, this is Board Staff Interrogatory No. 4.

MS. LYNCH: Yes, we have it.

MR. DeROSE: And if I can start at page 3 of 4, table 1. Do you have that?

MS. LYNCH: Yes.

MR. DeROSE: And, first of all, do I understand right that this is the lower band target and upper band that you are proposing or that you're seeking approval from the Board for, for resource acquisition and low-income?

[Witness panel confers]

MR. DeROSE: I have to admit I didn't think that would be a trick question.

MS. LYNCH: We were just conferring. It's just the cubic metre metrics.

MR. DeROSE: Right.

MS. LYNCH: Yes.

MR. DeROSE: Okay. And I take it that, if you're proposing the target there of 11 -- 1,110 million cubic metres as a target -- so this is the 100 percent level -- you're comfortable with that at your 100 percent target?

MS. LYNCH: Yes. That is what we proposed as our 100

MR. SHEPHERD: Okay.

--- Recess taken at 5:03 p.m.

--- Upon resuming at 5:10 p.m.

MR. MILLAR: We are back on the air. Let's continue. Just give us a moment, Jay. I guess we're locked out of the system.

Here we go. Okay, go ahead.

MR. SHEPHERD: I have five or six quick ones, and then and one area that I have several questions on.

The first is T3, BOMA 7, and if I understand your evidence, is that even participating customers will pay more in rates to pay for DSM programs than they will receive in benefits.

Is that right -- in residential at least?

MR. TETREAULT: Yes, that's correct, Mr. Shepherd.

MR. SHEPHERD: I don't understand how that could happen. I said that to someone who has been doing DSM for twenty years, and they said that's not possible; someone has to benefit.

So I don't understand why you would even do these programs if everybody is getting a bill increase, if nobody is benefitting. Why would you do it?

I'm assuming there is an error in here somewhere.

MS. LYNCH: A couple of items. It's one year -- based on one year of savings, not the lifetime of savings. As well, it doesn't take into account incentives that would be paid to customers for participating, as well as any electricity and water savings that they would also receive

as part of the program.

MR. SHEPHERD: Okay. But it's one year for savings. But it's also one year for rate increase, right? So they're going to continue to pay the higher rates forever, right? You're not going to stop the program.

MS. LYNCH: The programs may evolve, so there may be other programs they would participate in.

MR. SHEPHERD: You're not proposing they have an increase this year, and you give it back to them later? They're going to have higher rates for DSM programs.

MS. LYNCH: They would -- which would reflect the budget that is approved in that year.

MR. SHEPHERD: All right. It's just, I -- so if the Union south customer, an average residential customer, has a 1.92 increase in rates, you're saying that the average participant has a $1.23 benefit from participating.

Is that right -- because the net is 69?

MR. TETREAULT: That's correct, Mr. Shepherd.

MR. SHEPHERD: I've always understood DSM programs to be that the participants are better off in the end than they would have been, and the non-participants suffer because they didn't participate; they should have participated.

You seem to be saying everybody's worse off. I don't understand that.

MS. LYNCH: No, I think this is a reflection of what you are seeing in the bill impacts.

Now, there's -- we've netted off free riders from a

savings perspective, not from a cost perspective, but -- so there's that.

But also a participant would have received the incentives for participating.

MR. SHEPHERD: Okay.

MS. LYNCH: So that is another benefit that is not reflected here.

MR. SHEPHERD: All right. Although for most of these, it would simply be in SK, right? The biggest number of M1 customers is going to be in ESK?

[Witness panel confers]

MS. LYNCH: So the residential M1 customer here would have the ability to participate in the home reno rebate program, the behavioural program, as well as ESK program, if they haven't participated.

MR. SHEPHERD: I understand that, except that this is an average impact on those that participate. And so those that participate -- we know what your numbers are for ESKs and behavioural, and home reno.

And ESK is way bigger than the other two, right?

MR. DIBAJI: No, actually in behavioural, there is 300,000 customers participating each year.

MR. SHEPHERD: So do we have this calculation, the 69 cents?

MR. TETREAULT: I'm not sure what you mean, Mr. Shepherd.

MR. SHEPHERD: You said the average rate M1 residential customer will have a net bill increase of 61

UNION GAS LIMITED

Answer to Interrogatory from
Building Owners and Managers Association ("BOMA")

Reference: Exhibit A, Tab 2, Appendix D, p. 13 of 22 "Intervenor Representatives"

How does Union envision that intervenor representatives will gather input from the DSM consultative as a whole and report back to the consultative as a whole? Is this a change from the current practice?

Response:

Similar to Union's requirement of holding a minimum of two plenary meetings of its DSM Consultative in each calendar year (Exhibit A, Tab 2, Appendix D, Page 9), Union envisions that a comparable formalized requirement be established to ensure that intervenor representatives gather input from the DSM Consultative, allowing the perspective of consultative members to be brought to the attention of the Evaluation Advisory Forum and Audit Committee. Formalizing this requirement is a change from the current practice.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, Appendix D, p. 10

Please explain why the workings of the committees cannot be public, on the record, and fully transparent. Please provide a detailed explanation of the categories of information for each committee that have to be protected through confidentiality, and the reasons for confidentiality in each case. Where possible, please make specific reference to the Board's confidentiality rules.

Response:

Audit Committee: The audit process has a significant amount of confidential and proprietary customer information, as seen through the custom project savings verification process in which details of a customer's facility and related processes are usually outlined in project file, verifiers report as well as being discussed during AC meetings. Therefore, due to the highly sensitive customer information shared in these meetings it is critical to ensure customer's competitive information is not disclosed which could hinder their competitive advantage. Consequently, it would not be appropriate for AC meetings to be public. As today, all members of the Audit Committee must adhere to the "Declaration & Undertaking" process.

Evaluation Advisory Forum: In order for the EAF to benefit from having the ability to undertake full and frank discussions and the sharing of information pursuant to the rules of the Board's ADR settlement process; specific discussions and information will remain privileged. Consensus is reached when all parties (minus the Board representative as Chair) can sign on to a recommendation or position as in a settlement agreement to a Board proceeding (Exhibit A, Tab 2, Appendix D, page 8). All EAF members will treat all omissions, concessions, offers to settle and related discussions and documentation exchanged as confidential and will not reveal any such information beyond those members participating in the privileged discussions and the rules set out in the Board's Practice Direction on Settlement Conferences applies where applicable with necessary modifications.

For settlement privilege not to apply, it is necessary to obtain the consensus of the EAF members. Once each EAF member has indicated their agreement, it will be made clear by the Board Representative Chair that the meeting is no longer proceeding under the rules of settlement privilege. Any minutes of the TEC meeting will indicate that the meeting has moved into a non-confidential stage.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, Appendix D, p. 12

With respect to the roles and responsibilities of the members of the EAF:

a) Please confirm that all of the members will have as their primary responsibility to act in the public interest (as in the case of a corporate board of directors, who must act in the best interests of the corporation).

b) If not confirmed, please advise Union's view as to the duty of each member of the committee. By way of example only, is it intended that the utility representatives are free to act in the best interests of their respective companies?

c) Please advise if, in Union's view, any of the members of the committee would have a fiduciary duty, and, if so, to whom?

Response:

a) and b) The goal of the EAF is to advise the Board and natural gas utilities in Ontario on DSM evaluation standards and protocols that are best practice, consistent and reliable. All EAF members will work collaboratively to achieve this goal.

c) All members of the committee are expected to work towards DSM evaluation standards and protocols that are best practice, consistent and reliable. As Intervenor Representatives are elected by the DSM Consultative to represent the views of all DSM Consultative members, these committee members should represent the views of the DSM Consultative as a whole.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, Appendix D, pp. 15 and 16

Please confirm that Union is proposing the Board will make the final selection of auditor, and the Board will enter into the contract with that auditor to carry out the audit under the supervision of the AC. If confirmed, please explain the role of Union Gas in administering the audit contract.

Response:

Confirmed. The Board will ultimately determine Union's role in administering the audit contract.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 2, Appendix D, p. 15

Please confirm that Union is proposing that the auditor will select the CPSV firms, and the auditor will enter into the contracts with those CPSV firms to carry out the verification process under the supervision of the auditor and the AC. If confirmed, please explain the role of Union Gas in administering the CPSV contracts.

Response:

Confirmed. The Board will ultimately determine Union's role in administering the CPSV contract.

average, they get to zero. Right? That's not true, is it? What I'm going to ask you is: Where did you get the principle from? Give us a source.

[Witness panel confers]

MS. LYNCH: We'd have to follow up on that for you.

MR. SHEPHERD: Can I get an undertaking, please?

MR. MILLAR: JT2.18.

UNDERTAKING NO. JT2.18: TO ADVISE WHERE THE PRINCIPLE CAME FROM

MR. SHEPHERD: My next question is on T6, BOMA 21. And I think this also relates to another one -- I'm just trying to see which one -- which is SEC 17 under T6.

And what you're proposing is some sort of formal process where intervenor representatives interact with the rest of the consultative. Tell us more about that.

MS. LYNCH: So in the proposal we've laid out, we've suggested that the intervenor members are elected by the consultative and, therefore, would represent the consultative.

So there would be a process, whether it's similar to how we have consultative meetings, where those that are the elected members would be getting the input of those that are on the consultative to provide that input through both the audit and the evaluation advisory forum.

MR. SHEPHERD: What business is it of Union's what the intervenors do? If the intervenors work it out and they choose some particular representatives, why is it your business how they interact with each other?

MS. LYNCH: Simply a recommendation that we're making in our proposal at this point.

MR. SHEPHERD: Is there a problem now?

MS. LYNCH: What we're looking to confirm is that those that are elected represent the consultative. That's what we've proposed.

MR. SHEPHERD: But they're elected.

MS. LYNCH: (Witness nods head.)

MR. SHEPHERD: Doesn't the consultative then choose who they want to elect?

MS. LYNCH: Yes, they do.

MR. SHEPHERD: And so why -- why would you think that they would choose somebody that wouldn't represent them?

MS. LYNCH: Again, it's a proposal that we're putting forward at this time.

MR. SHEPHERD: All right. And then if you look at SEC 17, we asked the question -- we asked you to confirm that, if a person is elected to the EAF, their primary responsibility would be to act in the public interest.

I didn't see your answer to that. Is it?

MS. LYNCH: So our expectation is that those that are elected are representing best interests and that everyone is there to represent the -- either the intervenor group, independents, or the utilities.

MR. SHEPHERD: Yes, that's actually not correct, is it? Isn't it correct that everybody on the committee must act in the public interest? That's their job? That's what we do now.

MS. LYNCH: So in the technical evaluation committee, for example, you're -- everyone is acting in the best interests to establishing the best evaluation protocols.

MR. SHEPHERD: Exactly.

MS. LYNCH: Right.

MR. SHEPHERD: So that's acting in the public interest. Right?

MS. LYNCH: Right.

MR. SHEPHERD: It's not representing the adversarial position of one party or another, is it? This is not supposed to be an adversarial process; it's supposed to be a collaborative process. Right?

MS. LYNCH: Correct.

MR. SHEPHERD: Everybody is supposed to have the same goal.

MS. LYNCH: Yes.

MR. SHEPHERD: Okay. So I guess my concern was that you appear to think that there's sort of -- some sort of a representation going on in which, you know, a person is elected, and they -- they're fighting for the people that elected them. That's not correct. That would be actually wrong to do that.

And I just -- I'm trying to understand where you got that from, because that's not how the TEC works. Right? You know that?

MS. LYNCH: Yes. It's a consensus-based...

MR. SHEPHERD: All right. The next question I want to ask about is your proposal with respect to the EAF. You

proposed a quorum in which one intervenor of the two has to be there, but both utilities have to be there. Why is that?

MS. LYNCH: Could you please provide the specific reference?

MR. SHEPHERD: I'm sorry, SEC 14, also in T6.

[Witness panel confers]

MS. LYNCH: Sorry, I was hoping to find a reference, but we've proposed that quorum include both utilities as we are ultimately accountable for the delivery of the programs. We are also both either project managing or working on the projects that are being completed, so it's important that both utility be there for meetings.

MR. SHEPHERD: I thought you proposed, actually, that Board -- that the Board Staff project manage the projects. Didn't you propose that?

MS. LYNCH: We've proposed that they would determine who would project manage the projects. So, currently, we alternate.

MR. SHEPHERD: I understand. And you've said you don't want to do that anymore. You want Board Staff to do it. Right?

MS. LYNCH: We've suggested that they would determine who project-manages, not that we wouldn't project-manage.

MR. SHEPHERD: Oh, all right. And so you both have to be there because you might be project-managing some projects. Right? And what else? Why else? Because the intervenor representatives are there because they and the

people who elected them are paying all the bills.

So I'm asking: What's the reason why only one of them has to be there, but both of you have to be there?

MS. LYNCH: I think it's important that we're both there because we're accountable for delivering on the programs and the plans that we've put forward.

MR. SHEPHERD: Fine. The next one is T6, SEC 15. And I don't know whether you heard my discussion yesterday with Enbridge about this question of the confidentiality and/or transparency of these meetings.

And Enbridge's view is that all these meetings should be as open and transparent as possible. There should be -- basically, the default should be no confidentiality, with some exceptions, obviously.

You appear to be taking the other approach of saying everything should be behind closed doors unless an exception is made. Can you explain why that's appropriate?

MS. LYNCH: At this stage, it's a proposal that we've put forward for consideration by the Board in -- in their determination of how this is ultimately -- how they ultimately determine that we need to do evaluation.

MR. SHEPHERD: I understand. What's the basis of the proposal? Why do you think that's the right thing -- the right way to do it?

MS. LYNCH: Certainly to the extent that there is confidential information, that would be one component.

The forum is also consensus-based. So given that if we have consensus to move something forward, or we've

essentially approved it, then we would want that to be the view that all parties would take when we'd put it forward to the Board.

So if we don't agree, or we can't reach consensus, then in the way we've proposed it, all parties would have the ability to submit their views on the issue for the Board's consideration.

MR. SHEPHERD: Your model is a sort of a settlement model, as if this is an ongoing negotiation. And the Enbridge model is that this is an open process that everybody can see what everybody has to say all the time.

And I'm trying to get at what the difference is, why you have a different view. I haven't heard it yet.

Why is it treated like a negotiation, like a settlement?

MS. LYNCH: I would say there is lots of gives and takes in how there is determination of which projects -- ultimately what pieces move forward, that happen within the committee to achieve the consensus.

So we just recognize that it is important that if we are doing that, then it is important that everybody support the consensus positions.

MR. SHEPHERD: See, I guess I had understood that at least the EAF -- now, I understand that the audit committee may have a little bit of that. But I thought that at least the EAF was intended to go for the right answer, period. No negotiation, no taking positions, trying to find the right answer; isn't that right?

MS. LYNCH: That's definitely the goal.

MR. SHEPHERD: Next is T7, Staff 25. I thought you talked about this a bit, but there is one part of it I still don't understand, and that is the last paragraph on the first page.

I don't understand what you're saying. You're saying that free rider should be zero because of this, which is this paragraph and I don't understand what it means.

Can you help me?

MR. GOULDEN: I can try, Mr. Shepherd.

MR. SHEPHERD: Sure.

MR. GOULDEN: The only people that will be participating in both of those programs are those that are enrolled in the program, and are signed-up for the program.

So to the extent that there are actually results from their participation, there are no free riders.

MR. SHEPHERD: I don't understand why that is. Couldn't that be true of any program, that people who sign-up for the program are people who want to be in the program, and you don't know whether they're free riders or not. Sometimes you know, but mostly you don't.

Why couldn't somebody sign up for a Strategic Energy Management, because they have a plan to do this and you're going to give them money?

MR. GOULDEN: Our assumption is we are finding customers who would otherwise not participate in the program, because the program is a unique offering.

MR. SHEPHERD: But the big customers that you're