

## UNION GAS LIMITED

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**PREFILED EVIDENCE OF**

**PAUL GARDINER, MANAGER, DEMAND FORECASTING AND ANALYSIS**

The general service demand forecast for Union's 1.4 million customers in the residential, commercial and industrial service classes is discussed in this evidence. The evidence format is consistent with the demand forecast evidence previously filed by Union in the 2007 rate case (EB-2005-0520). This evidence is organized under the following headings:

- 1/ Demand Forecast Overview
- 2/ Market & Customer Consumption Characteristics
- 3/ Demand Forecast Methodology
- 4/ Normalized Average Consumption ("NAC") & Volume Forecast Results

The demand forecast methodology follows the methodology reviewed by R.J. Rudden & Associates and reviewed by the Board in EB-2005-0520.

The following additional information has been included as Appendix A:

- 1/ The 2010 market and customer overview & service / rate class NAC tables;
- 2/ The detailed customer attachment, shrinkage and billed customer growth estimates;
- 3/ The estimated demand equation regression coefficients and statistical significance test results; and,
- 4/ The forecast accuracy analysis.

1 **1/ DEMAND FORECAST OVERVIEW**

2 The demand forecast includes estimates for both the total number of billed customers and the  
3 total annual throughput volumes. The demand forecast was prepared during the first half of 2011  
4 as part of Union's annual budget process. The general service market demand forecast is used by  
5 Union to prepare both corporate financial and business operating plans.

6  
7 Three key factors in the general service demand analysis generate an overall flat volume forecast  
8 for the years 2011 to 2013. The key demand factors that explain the demand forecast are:

- 9 i. The growth in billed customers that increases the volumetric demand, discussed in  
10 Section 3.1;  
11 ii. The declining average consumption per customer that offsets the customer related  
12 growth, discussed in Section 3.2; and,  
13 iii. Union's Demand Side Management ("DSM") Plan which lowers the total demand.

14  
15 **1.2/ TOTAL THROUGHPUT VOLUMES**

16 Total throughput volumes are generated from the customer and NAC forecasts. Total throughput  
17 volumes are expected to be flat over the forecast period 2011 to 2013 (0.2% increase). This  
18 compares to a decrease in volumes of 1.5% between 2007 (actual) and 2010. Tables 1 and 2  
19 describe this change in volumetric demand. The change in the total throughput volumes between  
20 the 2007 Board-approved and 2013 forecast volumes, both stated according to the 2013 weather  
21 normal, is an increase of 0.7%.

Table 1 shows that total throughput volumes between the years 2010 and 2013 are forecast to increase by 8,221 10<sup>3</sup>m<sup>3</sup> or 0.2%. Please note that both years in the comparison are normalized according to the 2013 weather normal. The 2013 weather normal is based on the 20-year declining trend weather normal methodology. The 20-year declining trend weather normal is set by actual weather data (*heating degree-days below 18 °C*) spanning the years 1991 to 2010 and is discussed in Exhibit C1, Tab 5.

Table 1  
Change in Total Throughput Volumes: 10<sup>3</sup>m<sup>3</sup>  
2010 to 2013

Line No.	Rate & Service Customer Class	Total W.N. <sup>1</sup>	Change in volume due to				Total Forecast	Total Change
		Throughput 2010	Customer Growth	DSM Plan	HFO & FX Rate effect	NAC Decline	Throughput 2013	
1	Residential Rate M1	2,134,240	92,868	(17,666)		(115,055)	2,094,387	(39,853)
2	Residential Rate M2	3,870	(104)	(30)		(133)	3,603	(267)
3	Residential Rate 01	632,954	28,568	(3,405)		(28,258)	629,860	(3,094)
4	Commercial Rate M1	582,100	9,886	(14,766)		136,146	713,366	131,266
5	Commercial Rate M2	722,054	20,001	(12,698)		(123,971)	605,387	(116,668)
6	Tobacco Rate M1	13,834	(334)	-		(3,521)	9,979	(3,855)
7	Tobacco Rate M2	4,381	(1,613)	-		(812)	1,956	(2,425)
8	Commercial Rate 01	223,455	6,727	(3,740)		(706)	225,737	2,282
9	Commercial Rate 10	220,661	(10,424)	(3,987)		21,013	227,264	6,603
10	Industrial Rate M1	52,285	(674)	(970)	1,067	6,971	58,679	6,394
11	Industrial Rate M2	304,737	6,953	(5,810)	9,480	30,346	345,706	40,969
12	Industrial Rate 10	40,753	(4,764)	(268)	1,161	1,993	38,874	(1,879)
13	Industrial L.I.B, Rate 10	61,383	(19,055)	(339)	1,410	6,731	50,130	(11,253)
14	Total	4,996,707	128,036	(63,678)	13,118	(69,255)	5,004,929	8,221
			2.6%	-1.3%	0.3%	-1.4%	0.2%	0.2%
			--- service class summary ---					
15	Residential	2,771,064	121,333	(21,101)	-	(143,446)	2,727,851	(43,214)
16	Commercial	1,766,485	24,244	(35,190)	-	28,151	1,783,689	17,204
17	Industrial	459,158	(17,541)	(7,387)	13,118	46,040	493,389	34,231

<sup>1</sup> The 2010 actual throughput volumes are weather normalized according to the 2013 weather normal which is based upon the 20-year declining trend weather normal methodology.

Several key and offsetting demand drivers explain the relatively flat forecast of total demand between 2010 and 2013. These factors are:

- i. Customer growth results in a forecast net increase of 128,036 10<sup>3</sup>m<sup>3</sup> attributable to:

- 1 a) A forecast increase of  $121,333 \text{ } 10^3 \text{m}^3$  as a result of 53,884 additional residential  
2 customers at 2010 normalized average consumption levels;
- 3 b) A forecast increase of  $26,190 \text{ } 10^3 \text{m}^3$  as a result of 1,931 additional commercial  
4 customers, or a growth of 1.75% in the commercial market;
- 5 c) A forecast decrease of  $17,541 \text{ } 10^3 \text{m}^3$  due to a reduction of industrial customers after  
6 Q1 2010. Consequently, there are 36 fewer customers in Q1, 2013 than Q1 2010,  
7 even though the industrial customer count at year end 2013 is 3 above year end 2010.  
8 General service customers consume almost half of their natural gas during the first  
9 quarter of the year; and,
- 10 d) A forecast decrease of  $1,947 \text{ } 10^3 \text{m}^3$  as a result of a forecast decrease of 37 tobacco  
11 customers.
- 12 ii. An expected decrease of  $63,678 \text{ } 10^3 \text{m}^3$  or approximately 1.3% of the 2010 normalized  
13 demand as a result of Union's DSM Plan initiatives;
- 14 iii. Heavy Fuel Oil ("HFO") price and Foreign Exchange ("FX") changes result in a forecast  
15 net increase of  $13,118 \text{ } 10^3 \text{m}^3$  attributable to:
- 16 a) The appreciating Canada – USA exchange rate which is forecast to lower total  
17 throughput volumes by  $4,487 \text{ } 10^3 \text{m}^3$ ; and,
- 18 b) Higher fuel oil prices raise total throughput volumes by  $17,605 \text{ } 10^3 \text{m}^3$ . Natural gas  
19 prices are not expected to change materially from current prices (first quarter 2011).  
20 As a result, with price inelastic demand (0.1), the estimated impact from natural gas  
21 prices is nil. Fuel oil prices, according to the estimates provided by the Energy &

Metals Consensus Forecasts publication, are expected to rise by approximately 15% and this increases industrial gas demand as mentioned above.

iv. NAC Changes result in a net decrease of 69,255 10<sup>3</sup>m<sup>3</sup> resulting from:

- a) A decrease of 143,446 10<sup>3</sup>m<sup>3</sup> as a result of the declines in the normalized average consumption of residential customers of an average of 1.9% over the forecast period;
- b) An increase of 32,482 10<sup>3</sup>m<sup>3</sup> resulting from changes in the commercial NAC over the forecast period;
- c) An increase of 46,041 10<sup>3</sup>m<sup>3</sup> resulting from changes in the industrial NAC over the forecast period; and,
- d) A decrease of 4,333 10<sup>3</sup>m<sup>3</sup> resulting from changes in the NAC of tobacco customers.

Table 2 summarizes the changes in volumetric demand observed over the period 2007 to 2010.

The table shows total weather normalized throughput volumes fell by 1.5 % or 77,046 10<sup>3</sup>m<sup>3</sup>, even though the total number of customers increased by 54,469 or 4.2 % over same period. The weather normalized volumes in this historic comparison are estimated according to the forecast 2013 weather normal; this enables direct comparison with the 2010 – 2013 forecast period throughput volume estimates shown earlier.

Table 2  
Change in Total Throughput Volumes: 10<sup>3</sup>m<sup>3</sup>  
2007 to 2010

Line No.	Rate & Service Customer Class	Total W.N. <sup>1</sup>	Change in volume due to				Total W.N. <sup>1</sup>	Total Change
		Throughput 2007	Customer Growth	DSM Plan	HFO & FX Rate effect	NAC Decline	Throughput 2010	
1	Residential Rate Old M2	2,139,815	95,003	(16,793)		(79,916)	2,138,110	(1,705)
2	Residential Rate 01	639,272	24,766	(3,515)		(27,568)	632,954	(6,318)
3	Commercial Rate Old M2	1,286,297	29,070	(35,756)		24,543	1,304,154	17,857
4	Tobacco Rate Old M2	15,353	(2,028)	-		4,890	18,214	2,862
5	Commercial Rate 01	205,174	8,925	(3,638)		12,994	223,455	18,282
6	Commercial Rate 10	231,251	(61,587)	(3,270)		54,267	220,661	(10,589)
7	Industrial Rate Old M2	435,649	(3,175)	(8,335)	4,925	(72,042)	357,022	(78,627)
8	Industrial Rate 10 <sup>2</sup>	43,087	(11,367)	(2,406)	487	10,952	40,753	(2,334)
9	Industrial L.I.B. Rate 10 <sup>2</sup>	77,856	(20,693)	(4,347)	880	7,688	61,383	(16,473)
10	Total	5,073,753	58,915	(78,060)	6,292	(64,192)	4,996,707	(77,046)
			1.2%	-1.5%	0.1%	-1.3%	-1.5%	-1.5%
			--- service class summary ---					
11	Residential	2,779,087	119,769	(20,308)	-	(107,484)	2,771,064	(8,023)
12	Commercial	1,738,075	(25,619)	(42,664)	-	96,694	1,766,485	28,411
13	Industrial	556,591	(35,235)	(15,088)	6,292	(53,402)	459,158	(97,433)

<sup>1</sup> The 2007 & 2010 actual throughput volumes are weather normalized according to the 2013 weather normal which is based upon the 20-year declining trend weather normal methodology.

<sup>2</sup> The DSM Plan volume savings for Industrial Rate 10 are allocated according to annual volumes in each market.

A comparison of the forecast period with the changes from 2007 to 2010 in total throughput volumes indicates that:

- i. The volumetric impact of the total DSM Plan is similar in percentage terms. The forecast shows a negative 1.3 % while the actual reported a negative 1.5 % of DSM savings;
- ii. The volumetric impact due to the NAC decline is also similar in percentage terms. The forecast shows a NAC decline of 1.4% while the actual shows a NAC decline of 1.3%; and,
- iii. The volumetric impact from customer growth is larger in the forecast period than in the 2007 to 2010 period for two main reasons:



- 1) The absolute customer increase is larger during the forecast period: 55,781 from 2010 to 2013 versus 54,469 from 2007 to 2010; and,
- 2) The large decline in the number of northern Rate 10 and the southern Rate M1 & M2 industrial customers observed between 2007 and 2010 is not expected to continue in the forecast period.

## **2/ MARKET & CUSTOMER CONSUMPTION CHARACTERISTICS**

Union's general service market includes customers taking Rate M1, Rate M2, Rate 01 and Rate 10 service and include residential, commercial and industrial customer service classes.

Rate M1 is applicable to Union South customers consuming less than 50,000 m<sup>3</sup>. Rate M2 is applicable to Union South customers consuming 50,000 m<sup>3</sup> or greater.

Rate 01 is applicable to Union North customers consuming less than 50,000 m<sup>3</sup>. Rate 10 is applicable to Union North customers consuming 50,000 m<sup>3</sup> or greater.

The residential customer class represents 91% of all customers and approximately 55% of the total throughput volumes. Approximately 77% of the residential market is comprised of Union South customers. Commercial and industrial customers represent approximately 9% of all customers and 45% of the total throughput volumes. An overview of customers and volumes by service and rate class for the year 2010 is presented in Appendix A, Table 1.

1 The residential market reflects the requirements of several natural gas applications. These  
2 include:

- 3 i. Space heating (furnace & fireplaces) which represents approximately 60% of  
4 consumption;
- 5 ii. Water heating which represents approximately 30% of consumption; and,
- 6 iii. Other domestic gas appliances which represents approximately 10% of consumption.

7  
8 The commercial market is both a weather sensitive and process load service class. Union South  
9 represents approximately 75% of the commercial market. Office, retail and institutional customer  
10 segments dominate the commercial market. Building characteristics such as floor space, ceiling  
11 height, construction vintage, vacancy rates and other building design factors affect natural gas  
12 consumption. Electric Conservation and Demand Management (“CDM”) programs may also  
13 affect gas demand as more energy efficient electric equipment and lighting generates less heat.  
14 Agricultural related process loads (drying and pumping) are present and affect the fall season  
15 consumption levels.

16  
17 Tobacco customers are a small customer group (less than 800 customers) located in Union  
18 South. Their demand reflects agricultural process requirements during the fall - early winter  
19 season and their actual volumes are not weather normalized.

20  
21 The industrial service class has the smallest number of customers and represents less than 1% of  
22 the total general service market. There were approximately 5,500 industrial customers in 2010.

1 These customers are primarily small manufacturing establishments that span many industries.  
2 These include the food & beverage, automotive, construction materials, machinery, electronic,  
3 wood, and chemical industries. Approximately 97% of the customers and approximately 80% of  
4 the total throughput volumes occur in Union South. The Contract Industrial Accounts (“CIA”)  
5 Rate 10 customers refer to a small group of Union North customers with very high NAC that are  
6 administered outside of the Banner billing system.

7  
8 **3/ DEMAND FORECAST METHODOLOGY**

9 As in EB-2005-0520, the demand forecasting methodology is based on a multiple regression  
10 analysis. The methodology meets generally accepted practices regarding demand forecasting and  
11 is consistent with the findings of R.J. Rudden’s review, filed in EB-2005-0520, regarding  
12 forecast methods. The historic database underlying the statistical analysis contains monthly data  
13 from January 1991 to December 2010.

14  
15 The demand forecast combines four separate estimation steps:

- 16 i. Estimate of the total number of billed customers for each rate and service class;
- 17 ii. Forecast the NAC for the residential, commercial and tobacco customer service classes.  
18 Combining the normalized average usage estimates obtained from the econometric  
19 analysis with the billed customer estimates from step 1 yields the total throughput  
20 volumes estimates before consideration of the DSM Plan consumption impacts;
- 21 iii. Estimate the total throughput volumes for the industrial customers; and,

- iv. Remove the future consumption savings of DSM Programming from 2011 to 2013 from the individual econometric estimates obtained from steps 2 and 3.

3.1/ **TOTAL BILLED CUSTOMERS**

The forecast of total number of billed customers is derived from the forecast of total customer attachments. The customer attachment forecast is described in the evidence of Mr. Jeff Okrucky in Exhibit B1, Tab 3.

The forecast of total billed customers is obtained by subtracting the customer shrinkage estimates from the customer attachment forecast. The customer shrinkage, or attrition, is based on past trends and reflects expected demolitions and customer transactional activity. Table 3 in Appendix A details the attachment, shrinkage and billed customer forecast estimates. The historical levels and trends for total customer shrinkage are presented in Table 4 included in Appendix A.

The total number of billed customers at year end 2013 is forecast to be 1.399 million customers. At December 2010 there were 1.343 million customers. This represents an increase of 55,781 or approximately 4.2% over the period. This equates to an annual growth rate of approximately 1.4%.

Table 3  
Total Billed Customers at December

<u>Line No.</u>	<u>Service / Rate Class</u>	<u>2010</u>	<u>2013</u>	<u>Change</u>	<u>% Change</u>	<u>Avg. Ann. %</u>
1	Residential Rate M1	945,156	986,142	40,986	4.3%	1.4%
2	Residential Rate M2	35	35	0	0.0%	0.0%
3	Residential Rate 01	281,810	294,708	12,898	4.6%	1.5%
4	Commercial Rate M1	75,773	76,883	1,110	1.5%	0.5%
5	Commercial Rate M2	5,244	5,400	156	3.0%	1.0%
6	Tobacco Rate M1	747	725	(22)	(2.9%)	(1.0%)
7	Tobacco Rate M2	40	25	(15)	(37.5%)	(12.5%)
8	Commercial Rate 01	27,036	27,789	753	2.8%	0.9%
9	Commercial Rate 10	1,976	1,888	(88)	(4.5%)	(1.5%)
10	Industrial Rate M1	4,022	4,007	(15)	(0.4%)	(0.1%)
11	Industrial Rate M2	1,288	1,318	30	2.3%	0.8%
12	Industrial Rate 10	128	122	(6)	(4.7%)	(1.6%)
13	Industrial LIB Rate 10	50	44	(6)	(12.0%)	(4.0%)
14	Total Billed Customers	<u>1,343,305</u>	<u>1,399,086</u>	<u>55,781</u>	<u>4.2%</u>	<u>1.4%</u>

### 3.2/ NORMALIZED AVERAGE CONSUMPTION FORECAST METHODOLOGIES

Forecast estimates of NAC are prepared for the residential customers by individual rate class.

Commercial NAC estimates are first prepared for the total commercial service class, then converted to regional estimates and finally allocated to the individual rate classes on the basis of historic volumetric shares. The industrial market demand is determined by a total volume equation and average consumption estimates are then subsequently derived.

The normalized average consumption forecast for residential and commercial customers incorporates assumptions related to several demand variables: weather normal, energy efficiency,

total bill amounts, fall season weather and structural trend variables. Table 4 summarizes the historic and forecast average consumption per customer estimates.

Table 4  
NAC Trends: Actual & Forecast  
Normalized at 2013 Weather Normal

<u>Line No.</u>	<u>Time Span</u>	<u>Residential</u>		<u>Commercial</u>
		<u>Southern</u>	<u>Northern</u>	<u>All Rates<sup>1</sup></u>
1	1991-2000 Actual	(0.9)%	(1.0)%	(1.1)%
2	2000-2007 Actual	(1.6)%	(2.0)%	(0.9)%
3	2007-2010 Actual	(1.5)%	(1.6)%	(0.2)%
4	2010-2013 Forecast	(2.0)%	(1.6)%	0.2%

(1) All rate classes consolidated.

### 3.2.1/ Residential NAC

Residential NAC estimates are prepared for both Union South and Union North customers. The residential econometric forecasting follows the methodology used in EB-2005-0520. The NAC estimates are the product of two regression equations: an average use per customer equation and a total volume equation. The average of the two econometric demand estimates is then adjusted for the forecast DSM program NAC impact.

The key demand drivers in the residential regression analysis are:

- a) Weather – normal monthly heating degree days (“HDD”) below 18°C
- b) A weighted furnace stock energy efficiency index
- c) A persons per household measurement

d) The total residential bill monthly amounts

Table 5 highlights the trends present in these key residential demand drivers.

Table 5  
Residential Demand Drivers

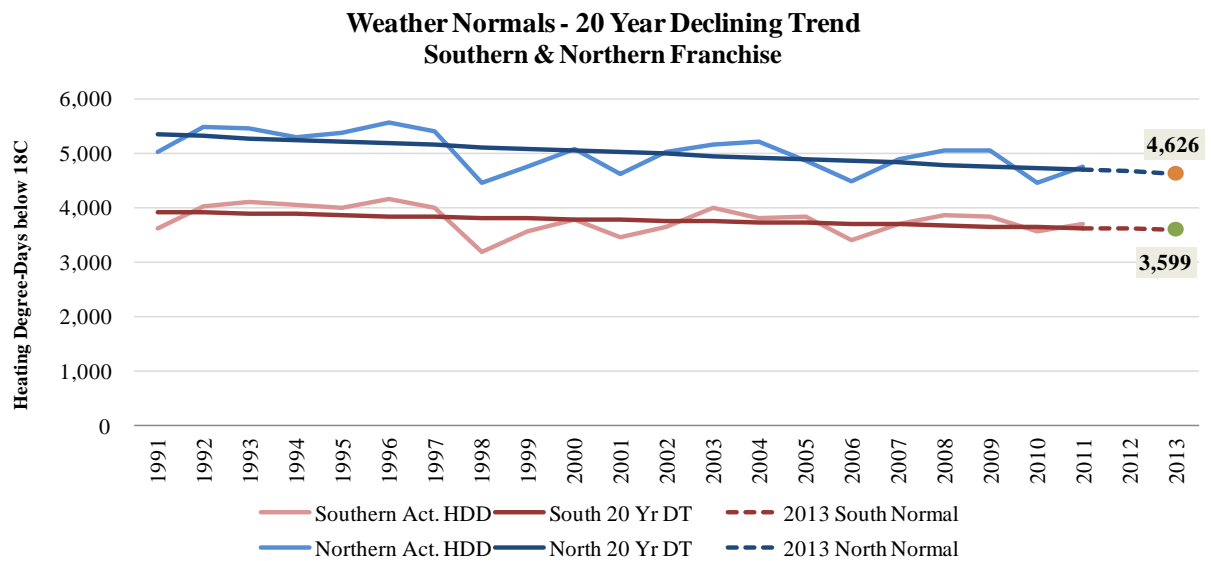
<u>Line No.</u>		<u>2001</u>	<u>2004</u>	<u>2007</u>	<u>2010</u>	<u>2013</u>
1	Southern Weather Normal (HDD)					3,599
2	Northern Weather Normal (HDD)					4,626
3	Furnace Energy Efficiency Index	0.772	0.780	0.816	0.841	0.865
4	Persons Per Household	3.00	2.70	2.72	2.62	2.53
5	SouthernTotal Bill Amount: \$	1,113	1,176	1,112	791	862
6	NorthernTotal Bill Amount: \$	1,233	1,315	1,187	855	985

Note: Actual data until 2010. Forecasted data for 2013.

The weather normal provides the total HDD estimates for the year 2013 obtained from the 20-year declining trend methodology that is described in Exhibit C1, Tab 5 and shown in Figure 1.

The weather normal coupled with weather demand elasticity obtained from regression analysis enables weather normalization of the actual consumption. The weather normal also estimates the space heating requirement and sets the seasonal pattern present in monthly consumption forecasts.

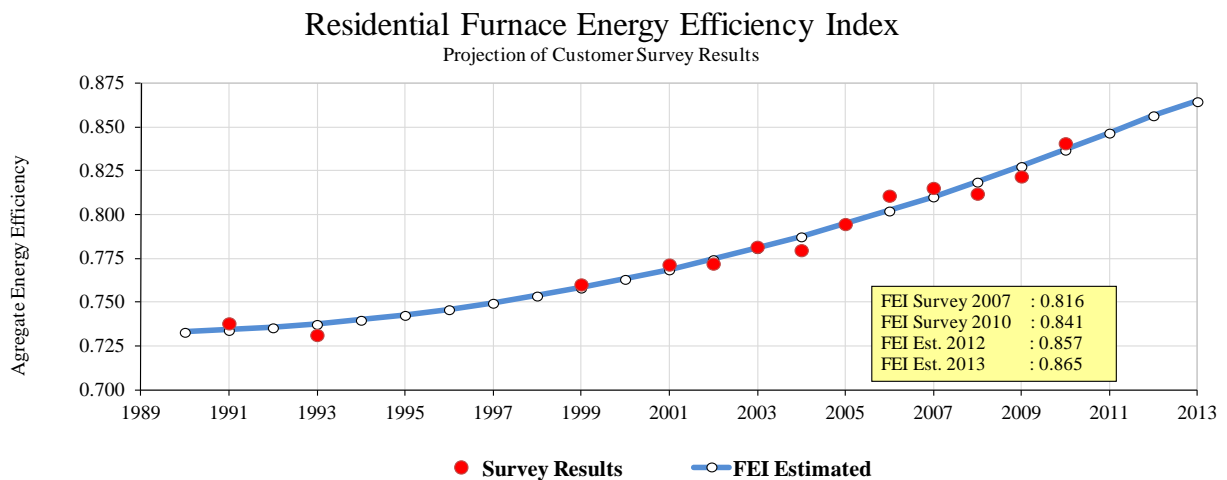
Figure 1



After weather, the weighted furnace efficiency variable is the second most important in explaining residential natural gas consumption. The historic efficiency measurements are derived from furnace type information obtained from residential customer gas appliance penetration research undertaken by Union. The forecast efficiency index estimate shown in Figure 2 is a projection based on several inputs: customer growth, furnace replacement, changing furnace stock levels for high, mid and conventional efficiency furnaces, and the average fuel efficiency of each furnace type. The furnace energy efficiency variable explains the observed and forecast decline in the average consumption per customer arising from technological improvements.



Figure 2



The same residential customer research provides the historic persons per household estimates and trend analysis of the historic data since the early 1990's generates the projected 2013 level. The trend in the number of persons per household is declining over time. In general, fewer residents translate in lower natural gas consumption. Specifically, in the regression analysis, the person per household demand driver explains the observed declining trend present in summer month natural gas consumption.

The historic total bill amounts are actual revenue figures for system sales customers. The 2013 estimate is determined using the 2011 NAC estimate and the Board-approved delivery and gas supply commodity rate for Rate M1 and Rate 01, effective January 1, 2011. The bill amount is held constant in all forecast years because gas commodity prices are uncertain. The bill amount includes all applicable charges: fixed and variable delivery, transportation, storage, gas

commodity and applicable taxes. The total bill amount variable accounts for the inelastic price demand relationship in the demand equation.

### 3.2.2/ Commercial NAC

The commercial NAC forecast estimates are obtained from regression analysis of commercial consumption data from all general service rate classes. The analysis identified the following demand drivers for the new commercial NAC demand forecast equation:

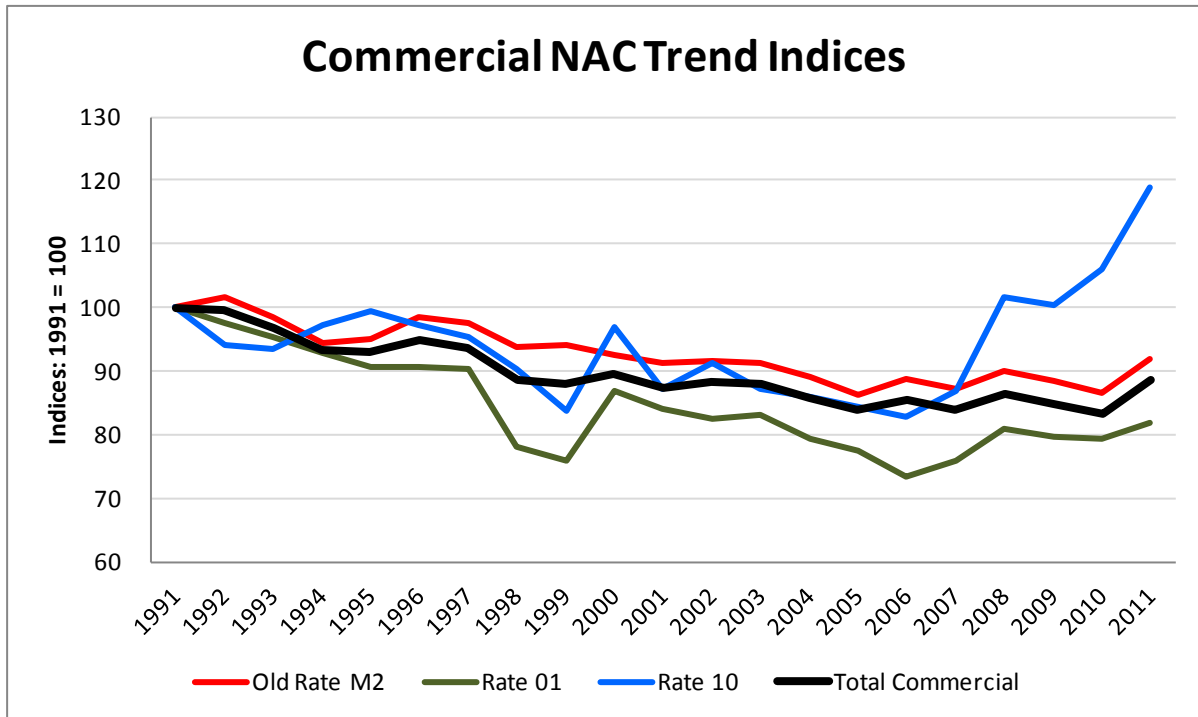
- i. Weather – normal monthly HDDs below 18°C
- ii. Harvest season weather conditions – September & October HDDs below 18°C
- iii. A structural trend variable – starts at a value of 100 in January 1991 and increases until April 2006 to a value of 283 and remains constant thereafter
- iv. A structural base variable – equals 1 in all months between January 1991 and December 2001 and equals zero in all months afterwards
- v. Binary dummy variables for two monthly data points: March and April 2000

The new demand equation possessed strong statistical results which are detailed in Appendix A, Table 6. The harvest season weather variable is a new and separate demand variable that accounts for weather conditions in the fall. It is a proxy variable for temperature and cloud cover. The structural trend variable accounts for the observed declining trend in NAC from 1991 to 2006. The structural base variable accounts for the change in the low season load before and after 2002. The binary dummy variables address the two outlier observations in March and April 2010.

1 This new demand equation was identified because several structural shifts and other market  
2 changes occurred within the individual rate classes. The structural shifts affected the average  
3 consumption trends. These changes necessitated a specification change from the previous 2007  
4 Board-approved forecast demand equations.

5  
6 Figure 3 indicates the departure from the declining usage trend that was observed in all rate  
7 classes over the period 1991 to 2006. Starting in 2007, NAC for Rate 01 and Rate 10 tracked  
8 upwards. Notable customer migration from Rate 10 to Rate 01 over the period 2007 to 2011  
9 effectively raised the NAC levels of both of these rate classes. Note that with market  
10 consolidation, the total commercial NAC possesses a smoother trend compared to the individual  
11 rate classes.

Figure 3



Union also witnessed the following additional changes since 2007 which fostered a consolidated approach:

- i. The annual NAC levels changed from the clearly declining trend to a relatively flat trend as shown in the total commercial and southern old M2 NAC index lines in the above chart;
- ii. The pattern observed since 2005 is a seasonal consumption pattern that is related to fall weather conditions; and,

1     iii.     Since regression analysis requires sufficiently long time series data, the presence of new  
2             rate classes in the Union South in 2008 necessitated the consolidation of the new rates  
3             (Rate M1 and Rate M2) according to the former or old Rate M2 classification.

4     The NAC estimates for the regional franchise area and the individual rate class are subsequently  
5     derived from the consolidated estimates by further regional correlation and volumetric share  
6     analysis by rate class.

7  
8     3.2.3/ Tobacco Use per Customer

9     Trend analysis of both customers and actual usage is applied to the tobacco market; this is  
10     similar to the previous 2007 rate case evidence.

11  
12     3.3/ INDUSTRIAL VOLUMES

13     The econometric methodology for the industrial total throughput volumes is similar to that filed  
14     in EB-2005-0520. Both the demand equation and the explanatory demand variables are the same.  
15     The econometric total throughput volume equation is based upon consolidated rate class data.

16  
17     Table 6 summarizes the 2013 customer and demand estimates by individual rate class. The  
18     diversity in terms of the number of customers and the average consumption per customer in the  
19     industrial market necessitates a consolidated rate class approach to forecasting this market.

Table 6  
2013 Industrial General Service Rate Market

<u>Line No.</u>		<u>Rate M1</u>	<u>Rate M2</u>	<u>Banner Rate 10</u>	<u>CIA Rate 10</u>	<u>Total</u>
1	Customers	4,007	1,318	122	44	5,491
2	% share	73%	24%	2%	1%	100%
3	Volumes: 10 <sup>3</sup> m <sup>3</sup>	58,679	345,706	38,874	50,130	493,389
4	% share	12%	70%	8%	10%	100%
5	Annual NAC: m <sup>3</sup>	14,808	257,901	336,471	1,108,624	90,084

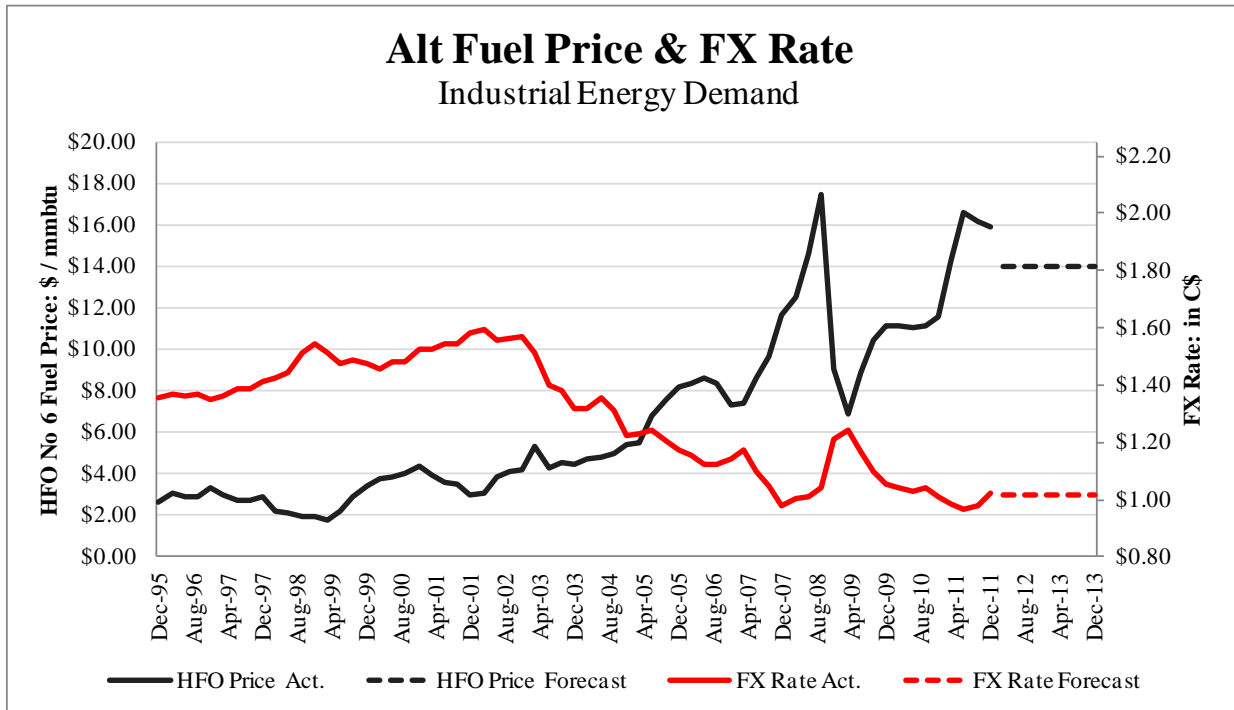
The key demand drivers in the industrial general service rate market are:

- i. Weather – normal HDDs below 18°C
- ii. Foreign exchange rate: Canada / United States
- iii. Alternative fuel oil price - Heavy Fuel Oil No. 6
- iv. Future estimated DSM Plan NAC impacts

The weather normal demand driver was described earlier, please refer to Section 3.2.1.

Figure 4 presents the Canada / US foreign exchange (“FX”) rate and the alternate HFO No. 6 fuel oil price. These two demand drivers have a partial offsetting effect on consumption. The estimated demand cross elasticity (0.25) impact of the exchange rate is approximately 1.5 times larger than the estimated fuel oil price (0.17) cross elasticity impact. As the price of fuel oil rises, gas demand increases; as the U.S. dollar falls, gas demand falls. Over the forecast period, institutional survey estimates for the exchange rate and alternative fuel price as provided by Consensus Economics Inc. (issued during Q1 2011) indicate parallel trajectories.

Figure 4



Historic volume shares are used to allocate the estimated total throughput volumes shown in Figure 8 to each rate class. Once the volumes are estimated, the industrial econometric NAC estimates for each rate class can be subsequently derived. This is generated by dividing the volume estimates by the respective forecast customer estimates. Each industrial rate class NAC is then adjusted for the forecast DSM NAC impacts to yield the NAC forecast estimates.

### 3.4/ DSM PLAN IMPACT

DSM Programming is expected to lower total consumption over the forecast period by approximately 64,000  $10^3\text{m}^3$ . The forecast saved volumes are transformed into DSM NAC

impacts which are used to adjust the econometric NAC estimates for individual rate and service classes. These DSM impacts decrease the total market NAC by approximately 0.4% per annum. In the residential market, the forecast DSM volume savings of 21,101  $10^3\text{m}^3$  represents approximately 33% of the total DSM saved volumes. The volume savings are larger in Union South compared to Union North. This explains the difference in the forecast NAC trends between the two delivery areas mentioned earlier. In the commercial market, the forecast volume savings of 35,191  $10^3\text{m}^3$  from DSM Programs represents approximately 55% of the total saved volumes for all customer groups. The DSM Programming offsets load growth that is occurring in the commercial market from other factors. The forecast saved volumes from DSM in the industrial market are 7,387  $10^3\text{m}^3$  and account for approximately 12% of the total volume savings from DSM.

#### **4/ NAC & VOLUME FORECAST RESULTS**

Figures 5 to 8 below compare the NAC forecast estimates with past history. The residential and commercial NAC forecast are presented along with the industrial total volume estimates. For numerical volume estimates please refer to Exhibit C1, Summary Schedule 1.

Figures 5 and 6 show a continuation over the forecast period of the declining trend observed in the past in the residential NAC. Figure 7 shows a declining commercial NAC over the forecast period as a result of DSM plan estimates. Figure 8 shows that industrial volumes, after recovering in 2011, remain flat over the next two years. The regional share of the total industrial volumes does not change significantly.



The NAC forecast for residential customers continues to decline over the 2010 to 2013 period; this resembles the trend observed over the past 20 years. The difference in the forecast NAC trends between Union South and Union North residential customers arises from the DSM plan estimates for the forecast period.

Figure 5

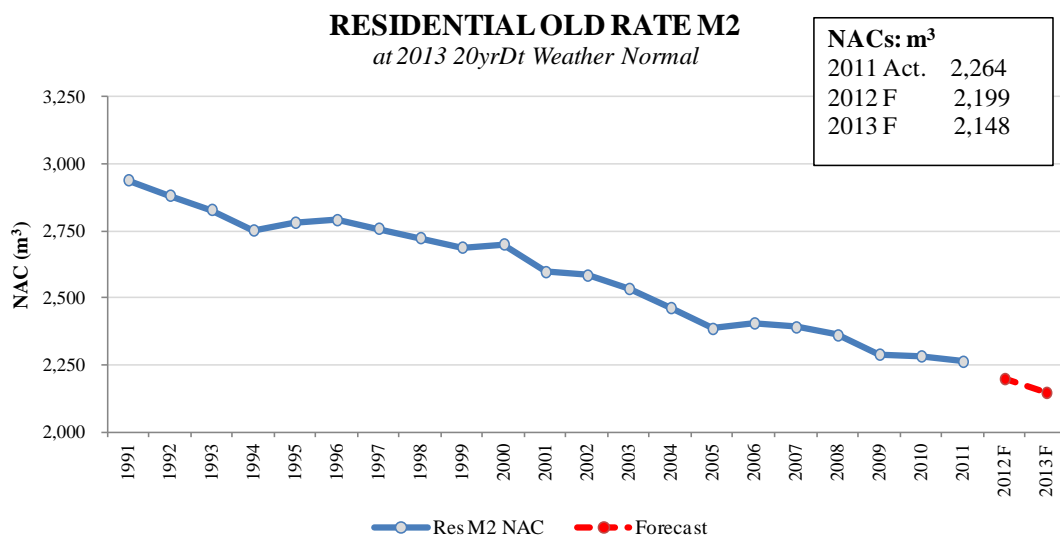
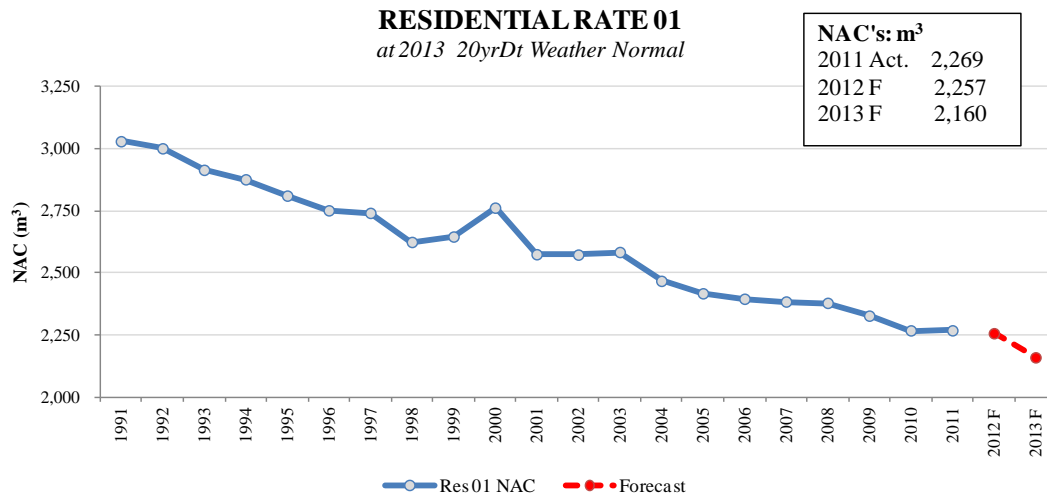
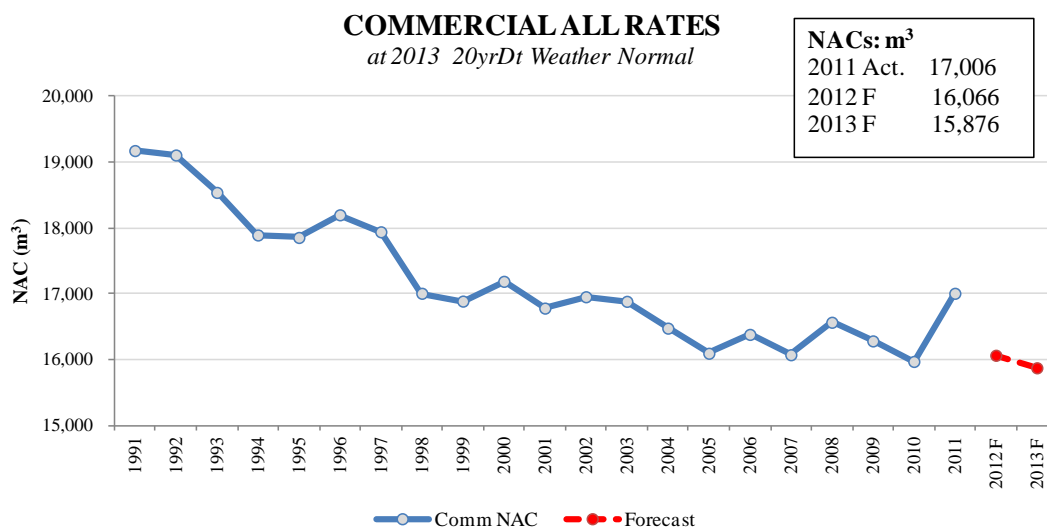


Figure 6



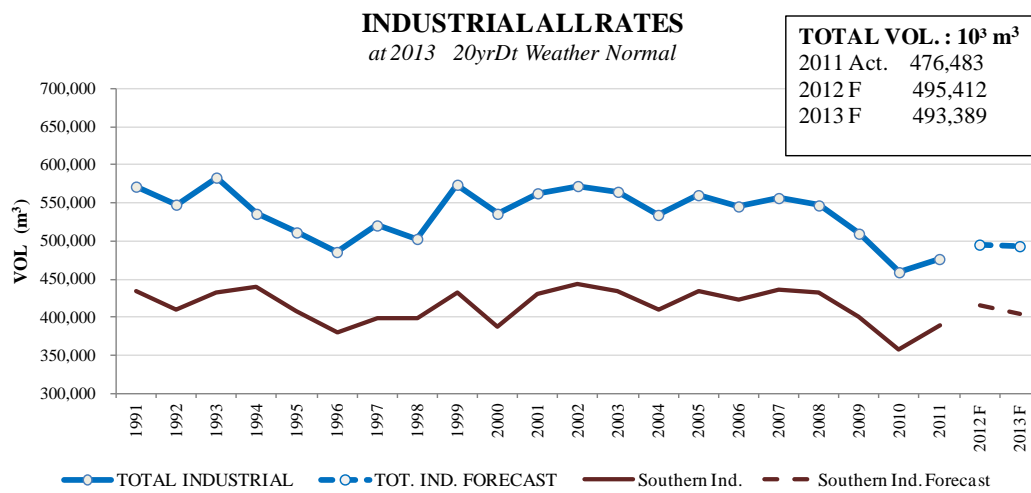
The NAC forecast for commercial customers is essentially flat (+0.2%) and resembles the almost flat (-0.2%) trend from 2007 to 2010. However, the commercial NAC trend in the forecast departs from the declining trend (near -1%) observed over the 1991 to 2006 period.

Figure 7



As noted above, the industrial volume forecast reflects an increase relative to 2010 actual volume consumption. The industrial volume trend in the forecast departs from the declining trend observed between 2007 and 2010.

Figure 8



**APPENDIX A**

This appendix contains the following background and statistical information:

- 1/ The 2011 market and customer overview & service / rate class NAC tables;
- 2/ The detailed customer attachment, shrinkage and billed customer growth estimates;
- 3/ The estimated demand equation regression coefficients and statistical significance test results; and,
- 4/ The forecast accuracy analysis:
  - i. Each demand equation's mean absolute % error ("MAPE"); and,
  - ii. Each demand equations 3-year ex-post estimate.

**1/ MARKET & CUSTOMER OVERVIEW & NAC TRENDS**

Table 1 highlights the importance of the residential market in the general service market. It has the majority of customers and slightly more than half the total consumption. The commercial market follows with about one-third of the total throughput volumes. Industrial customers represent the smallest market, less than 1% of customers and 9% of consumption. Union South customers account for about 75% of customers and total throughput volumes. These proportions have not changed much over the past two decades.

Table 1  
General Service Market Overview: Year 2011

<u>Customer Classes</u>	<u>Total Customers</u>		<u>Total Throughput</u>	
	<u>Average</u> <u>Annual #</u>	<u>% Share</u>	<u>Volume</u> <u>10<sup>3</sup> m<sup>3</sup></u>	<u>% Share</u>
Residential Rate M1	949,579	70%	2,207,106	42%
Residential Rate M2	32	0%	4,075	0%
Residential Rate 01	283,314	21%	664,638	13%
sub total	1,232,925	91%	2,875,818	54%
Commercial Rate M1	75,736	6%	643,110	12%
Commercial Rate M2	5,241	0%	783,481	15%
Tobacco Rate M1	731	0%	13,106	0%
Tobacco Rate M2	49	0%	5,444	0%
Commercial Rate 01	27,100	2%	241,618	5%
Commercial Rate 10	1,964	0%	252,179	5%
sub total	110,821	8%	1,938,938	37%
Industrial Rate M1	4,004	0%	58,233	1%
Industrial Rate M2	1,281	0%	338,885	6%
Industrial Rate 10	127	0%	47,862	1%
Industrial CIA Rate 10	36	0%	40,390	1%
Sub total	5,448	0%	485,370	9%
1 Total	1,349,194	100%	5,300,126	100%

2

3 The NAC estimates from 1991 to 2011 are shown in Table 2. These estimates clearly show how  
4 much larger on average commercial and industrial customers are relative to residential  
5 customers. Old Rate M2 estimates are shown because the new rate classes, M1 and M2,  
6 commenced in 2008.

Table 2  
Normalized Average Consumption by Rate & Service Class (m<sup>3</sup> / year)  
All NACs weather normalized according to the 2013 20-Year Declining Trend weather normal

Year	Residential		Commercial			Industrial		
	Rate M2	Rate 01	Old Rate M2	Rate 01	Rate 10	Rate M2	Rate 10	Rate CIA 10
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1991	2,940	3,029	18,696	10,471	104,964	73,495	273,591	2,501,299
1992	2,883	3,001	19,003	10,229	98,717	70,265	256,959	2,708,373
1993	2,830	2,914	18,416	10,000	98,246	74,784	269,677	2,933,314
1994	2,753	2,876	17,670	9,716	102,248	74,559	287,596	1,101,389
1995	2,782	2,810	17,799	9,510	104,512	73,905	270,517	1,315,339
1996	2,792	2,751	18,438	9,480	102,112	75,488	288,617	1,223,738
1997	2,760	2,741	18,222	9,454	99,958	78,169	242,400	968,749
1998	2,725	2,624	17,533	8,196	94,729	78,078	158,054	830,471
1999	2,689	2,646	17,572	7,959	87,960	82,876	178,165	982,337
2000	2,701	2,762	17,277	9,102	101,632	74,280	194,437	998,704
2001	2,598	2,575	17,074	8,794	91,677	82,091	204,217	835,453
2002	2,585	2,573	17,126	8,626	95,897	84,076	231,508	834,090
2003	2,535	2,584	17,052	8,693	91,545	83,026	267,897	877,057
2004	2,464	2,468	16,649	8,320	90,208	78,036	224,118	949,805
2005	2,386	2,417	16,133	8,126	88,468	82,054	245,088	908,018
2006	2,407	2,396	16,608	7,695	87,033	79,135	220,599	881,745
2007	2,392	2,384	16,324	7,949	91,365	81,102	253,843	889,643
2008	2,362	2,379	16,851	8,465	106,559	80,445	280,730	914,299
2009	2,290	2,328	16,526	8,350	105,374	75,122	310,569	872,901
2010	2,284	2,268	16,182	8,314	111,416	67,057	310,317	938,636
2011	2,264	2,269	17,213	8,580	124,714	73,561	372,911	1,074,867

## 2/ CUSTOMER ATTACHMENT, SHRINKAGE AND BILLED CUSTOMER GROWTH

Table 3 details the customer growth relationship between attachments, shrinkage and billed customer growth measured at year end.

Table 3

### CUSTOMER ATTACHMENTS & BILLED CUSTOMER GROWTH

<u>Year</u>	<u>Residential Customers</u>		<u>Commercial Customers</u>				<u>Industrial Customers</u>		<u>Total</u>
	<u>Old Rate M2</u>	<u>Rate 01</u>	<u>Old Rate M2</u>	<u>Tobacco</u>	<u>Rate 01</u>	<u>Rate 10</u>	<u>Rate Old M2</u>	<u>Rate 10</u>	

#### CUSTOMER ATTACHMENTS

2011 A	12,541	5,209	1,098		364	31	36	16	19,295
2012 F	14,232	4,520	1,202		346	10	60	10	20,380
2013 F	15,842	4,860	1,358		336	10	75	10	22,491

#### CUSTOMER SHRINKAGE

2011 A	-1,312	-599	-803	-14	-187	-5	-68	-36	-3,024
2012 F	533	-769	-789	-11	26	-126	-18	-7	-1,161
2013 F	-850	-323	-800	-12	-132	-8	-70	-5	-2,200

#### BILLED CUSTOMER GROWTH AT YEAR END

2011 A	11,229	4,610	295	-14	177	26	-32	-20	16,271
2012 F	14,765	3,751	413	-11	372	-116	42	3	19,219
2013 F	14,992	4,537	558	-12	204	2	5	5	20,291

#### TOTAL BILLED CUSTOMERS AT YEAR END

2010 A	945,191	281,810	81,017	787	27,036	1,976	5,310	178	1,343,305
2011 A	956,420	286,420	81,312	773	27,213	2,002	5,278	158	1,359,576
2012 F	971,185	290,171	81,725	762	27,585	1,886	5,320	161	1,378,795
2013 F	986,177	294,708	82,283	750	27,789	1,888	5,325	166	1,399,086

#### ANN. % CHANGE IN TOTAL BILLED CUSTOMERS AT YEAR END

2011 A	1.2%	1.6%	0.4%	-1.8%	0.7%	1.3%	-0.6%	-11.2%	1.2%
2012 F	1.5%	1.3%	0.5%	-1.4%	1.4%	-5.8%	0.8%	1.9%	1.4%
2013 F	1.5%	1.6%	0.7%	-1.6%	0.7%	0.1%	0.1%	3.1%	1.5%

Table 4 shows the observed customer shrinkage at year end from 2002 to 2011. Figure 1 shows the trend in total shrinkage. A floor of approximately 2,000 customers is assumed given that demolitions account for about 1,200 to 1,500 per year. The 12 month moving average line in the chart was considered in setting the forecast estimates for customer shrinkage.

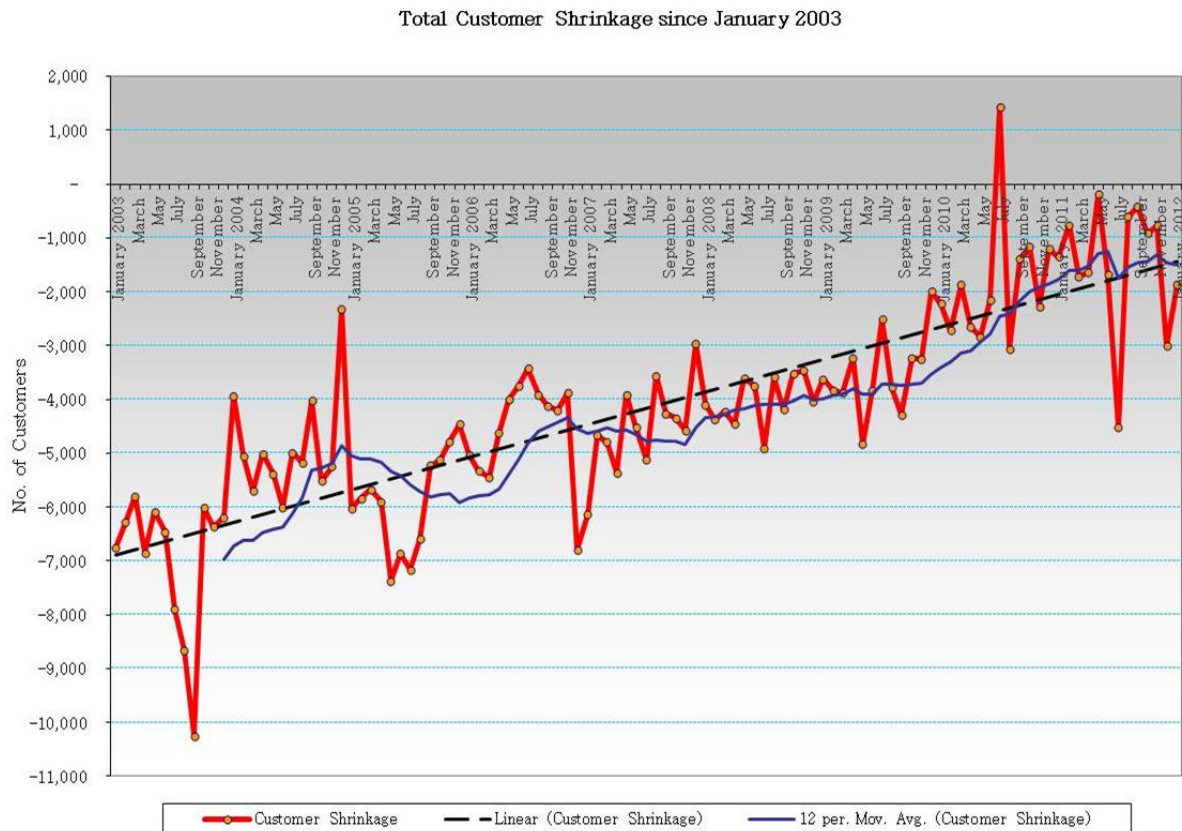
Table 4

Observed Customer Shrinkage: December Month

<u>Year</u>	<u>Residential</u>	<u>Non. Residential</u>	<u>Total</u>
2002	4,095	1,163	5,258
2003	5,980	204	6,184
2004	(1,400)	3,716	2,316
2005	2,856	1,607	4,463
2006	4,928	1,859	6,787
2007	1,488	1,482	2,970
2008	2,861	1,185	4,046
2009	834	1,158	1,992
2010	633	577	1,210
2011	1,911	1,113	3,024



Figure 1



### 3/ DEMAND FORECAST EQUATIONS

#### Residential Use per Customer

The residential NAC econometric estimate is obtained by averaging the use per customer estimates obtained from equations 1 and 2:

Eqn. 1: Use = f (Htg.Degree-Days, Furnace Efficiency, Persons/House, Total Bill)

Eqn. 2:  $\text{Volume} = f(\text{Htg.Degree-Days}, \text{Total Customers}, \text{Total Bill})$

Hence, Use for Eqn. 2 Est. = Est. Volume / No. of Customers

#### Commercial Use per Customer

The commercial NAC econometric estimate is obtained by using the following equation:

Eqn:  $\text{Use} = f(\text{Htg.Degree-Days}, \text{Fall Weather}, \text{Structural Trend}, \text{Structural Base Load})$

The two structural variables account for observed structural shifts in the data.

Regressing the regional usage per customer against the consolidated usage levels provides the means to convert consolidated commercial NAC estimates into regional NAC estimates.

#### Industrial Total Throughput Volumes

The econometric estimate of total industrial demand is obtained from the total volume equation:

Eqn:  $\text{Volume} = f(\text{Htg.Degree-Days}, \text{U.S. Canada Exchange Rate}, \text{Heavy Fuel Oil Price})$

The Rate 01 and former Rate M2 regression analysis results are provided in Table 5. The charts of actual versus forecasted usage and total volumes are shown in Figures 2 to 5. The following tables and charts show strongly significant estimation results and forecasting capability.

**Table 5**  
**Regression Analysis - Estimated Demand Equations**  
**GENERAL SERVICE RATES: RESIDENTIAL MARKET**

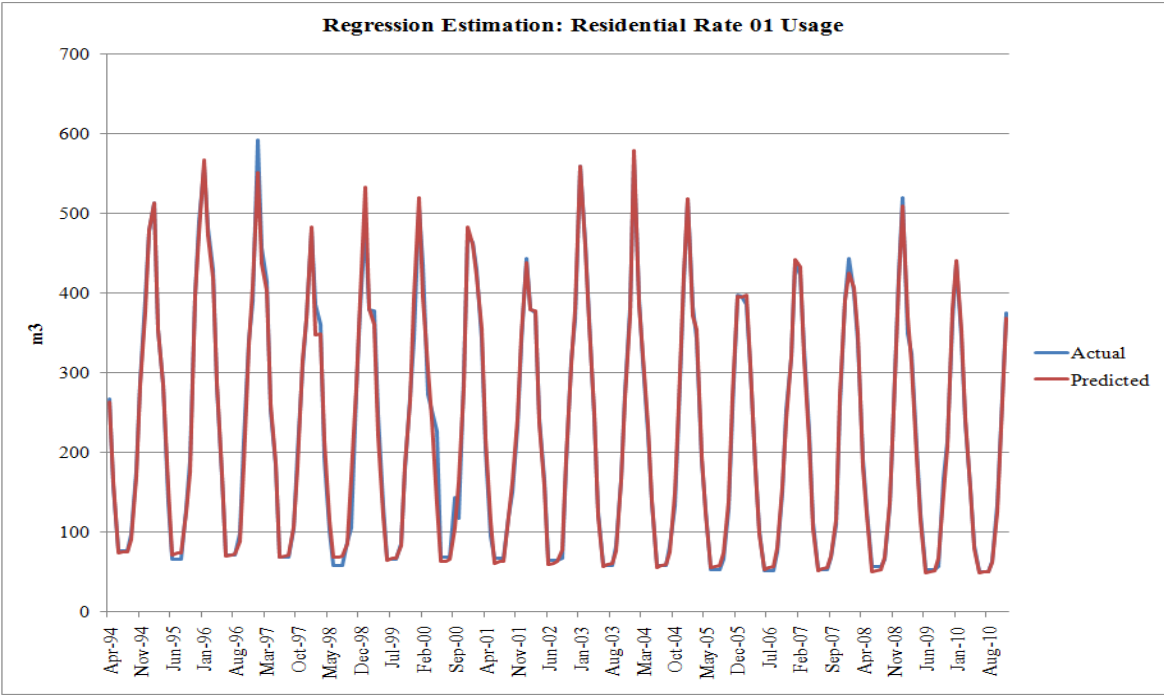
Dependent Variable			Dependent Variable		
Rate 01 Use per Customer			Rate 01 Volumes		
Adjusted R <sup>2</sup>			Adjusted R <sup>2</sup>		
F Statistic			F Statistic		
Durbin Watson			Durbin Watson		
99.7%			99.6%		
3,011.8			2,806.5		
1.75			1.37		
Independent Variables	Est. Coefficients	t - test result	Independent Variables	Est. Coefficients	t - test result
INTERCEPT	(66.330)	(8.044)	INTERCEPT	6,519.763	1.9
TOTAL BILL	(0.059)	(2.580)	CUSTOMER	0.029	2.3
EFFICIENCY	549.840	18.842	HDD January	123.467	131.0
PERSONS PER HOUSE	45.047	17.096	HDD February	114.929	106.2
HDD January	0.491	63.621	HDD March	107.353	90.4
HDD February	0.464	52.818	HDD April	96.765	48.4
HDD March	0.444	42.751	HDD May	79.113	23.8
HDD April	0.419	26.237	HDD September	37.694	4.3
HDD May	0.358	13.050	HDD October	71.738	31.4
HDD September	15.375	5.101	HDD November	102.012	70.3
HDD October	0.309	15.624	HDD December	111.573	107.3
HDD November	0.417	31.961	Dummy-September	4,266.239	5.2
HDD December	0.446	51.632			
Dummy-September	0.242	5.418			

Dependent Variable			Dependent Variable		
Rate former M2 Use per Customer			Rate former M2 Volumes		
Adjusted R <sup>2</sup>			Adjusted R <sup>2</sup>		
F Statistic			F Statistic		
Durbin Watson			Durbin Watson		
99.7%			99.6%		
3,338.7			1,890.5		
1.61			1.44		
Independent Variables	Est. Coefficients	t - test result	Independent Variables	Est. Coefficients	t - test result
INTERCEPT	(88.886)	(11.481)	INTERCEPT	(12,289.754)	(1.575)
TOTAL BILL	(0.141)	(5.758)	CUSTOMER	0.053	7.367
EFFICIENCY	584.941	22.469	HDD January	502.325	66.859
PERSONS PER HOUSE	25.511	4.569	HDD February	485.125	57.072
HDD January	0.638	94.243	HDD March	475.863	48.244
HDD February	0.625	76.341	HDD April	451.649	28.093
HDD March	0.638	64.693	HDD May	426.800	14.237
HDD April	0.629	40.164	HDD September	278.968	4.625
HDD May	0.611	21.269	HDD October	340.161	16.886
HDD September	0.307	5.936	HDD November	401.755	33.475
HDD October	0.438	22.700	HDD December	462.877	53.703
HDD November	0.527	44.653	Dummy-June	19,342.092	3.774
HDD December	0.600	75.756	Dummy-July	19,243.099	3.756
Dummy-June	87.748	5.023	Dummy-August	19,264.498	3.760
Dummy-July	83.653	4.792	Dummy-September	23,849.182	4.548
Dummy-August	80.927	4.634			
Dummy-September	89.214	5.151			

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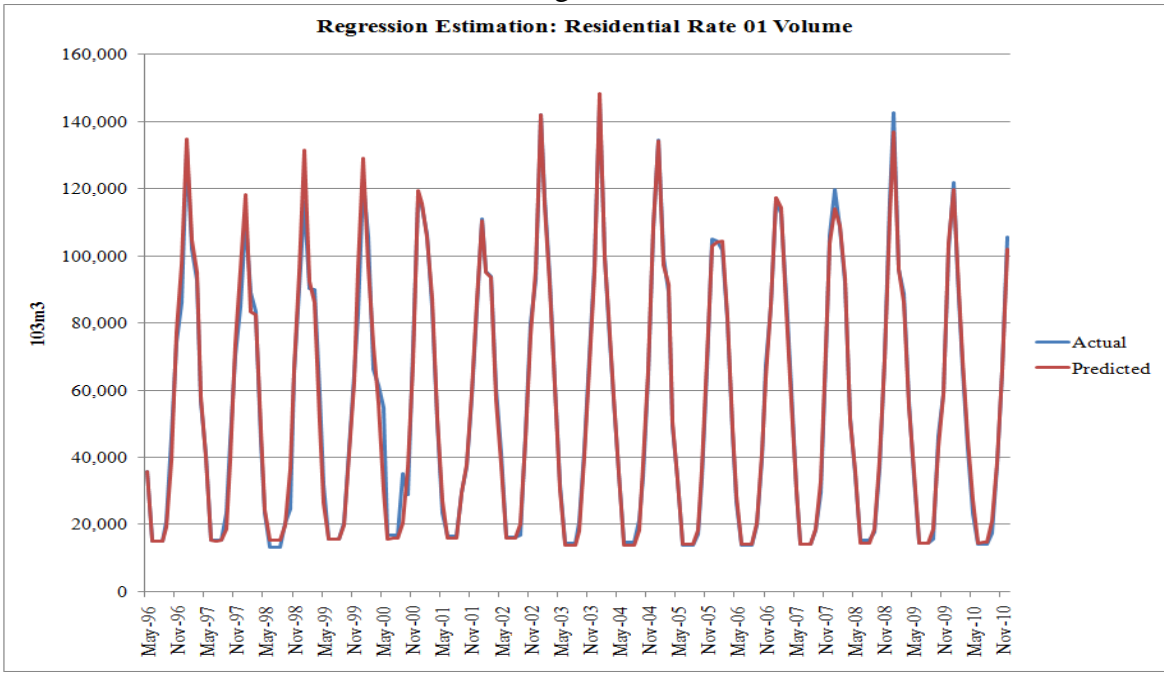
Figure 2



2

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Figure 3



4

Figure 4

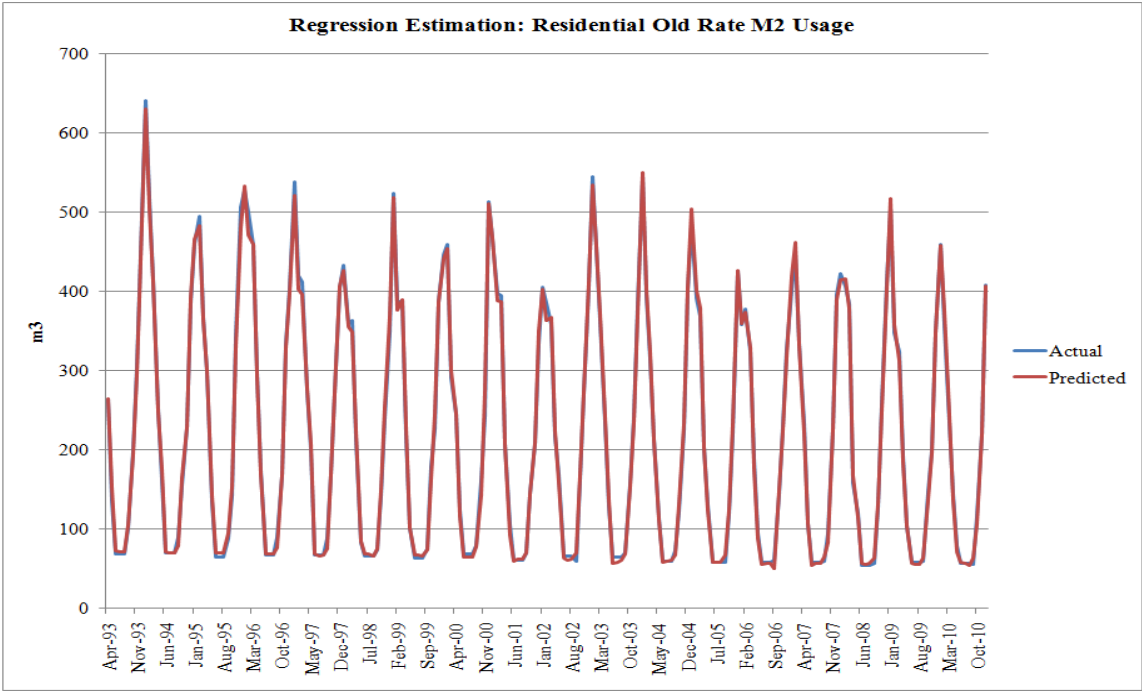
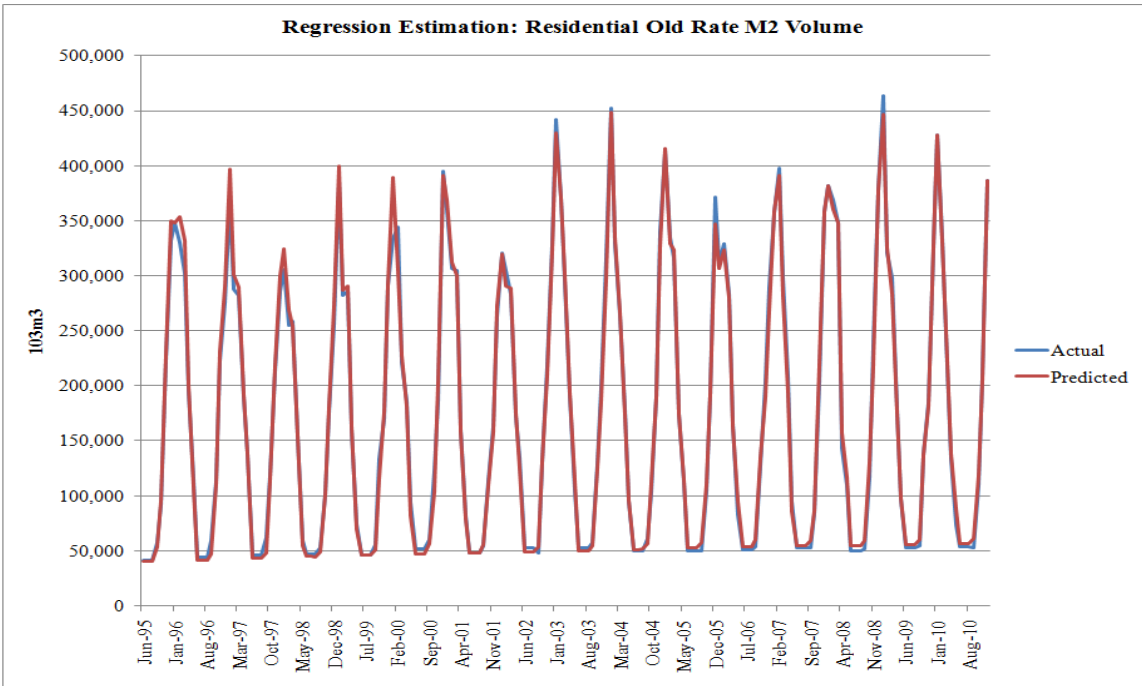


Figure 5



1

Table 6  
Regression Analysis - Estimated Demand Equations  
GENERAL SERVICE RATES: COMMERCIAL MARKET

<b>Dependent Variable</b>	<b>Consolidated Rates Use per Customer</b>
<b>Adjusted R<sup>2</sup></b>	<b>99.3%</b>
<b>F Statistic</b>	<b>2,329.7</b>
<b>Durbin Watson</b>	<b>1.65</b>

<u>Independent Variables</u>	<u>Est. Coefficients</u>	<u>t - test result</u>
Intercept	782.57	14.78
Jan HDD	3.75	121.48
Feb HDD	3.77	106.84
Mar HDD	3.73	90.91
Apr HDD	3.45	49.77
May HDD	2.83	21.20
Sep HDD	1.02	3.98
Oct HDD	2.87	32.95
Nov HDD	3.45	43.38
Dec HDD	3.40	24.87
Fall Weather Lagged 2 Mo.	0.67	2.04
Trend - Htg Season	(1.69)	(9.02)
Trend - Summer Load	(50.82)	(2.23)
Dummy - March 2000	602.58	6.82
Dummy - April 2000	(546.33)	(6.10)

2

3

Figure 6

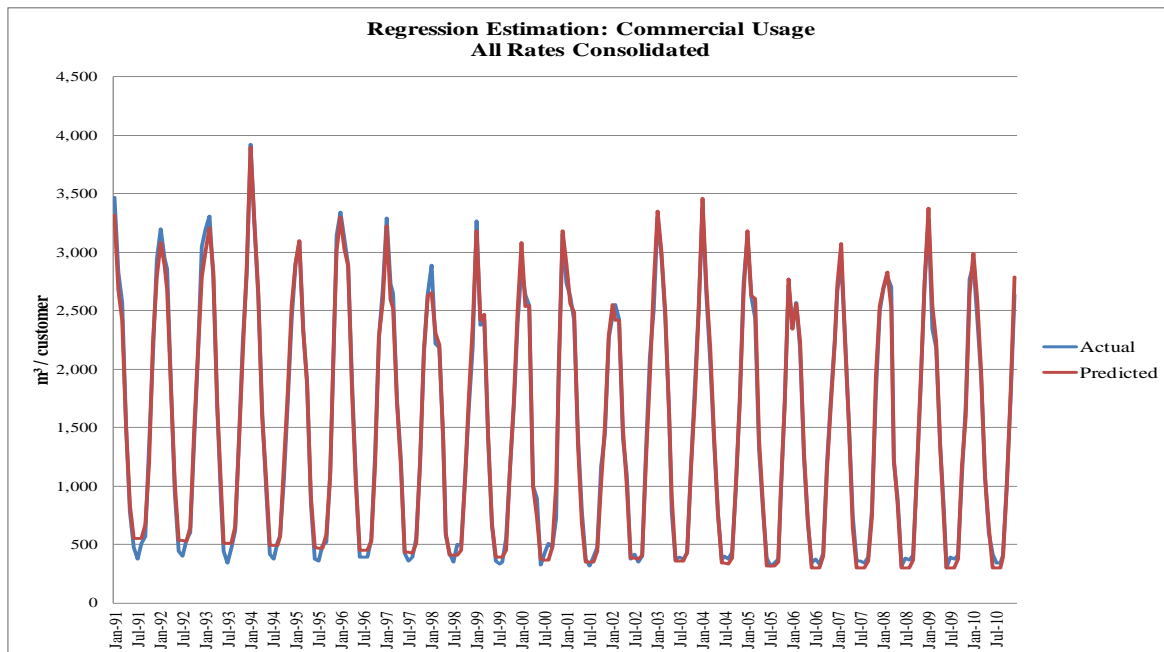


Figure 7

Regression that estimates southern NAC from consolidated NAC estimates

#### SUMMARY OUTPUT

Regression Statistics	
Multiple R	99.9%
R Square	99.8%
Adjusted R Square	99.8%
Standard Error	40.10
Observations	48

#### ANOVA

	df	SS	MS	F	Significance	Furbin-Watson
Regression	1.00	45,611,731	45,611,731	28,368	0.00	1.95
Residual	46.00	73,962	1,608			
Total	47.00	45,685,693				

	Coefficient	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	12.37	10.14	1.22	0.23	- 8.04	32.79
X All Rates Use	1.004	0.01	168.43	0.00	0.99	1.02

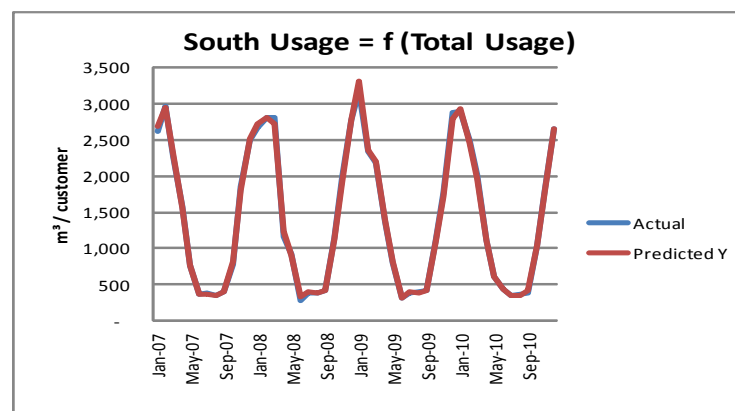


Figure 8

Regression that estimates northern NAC from consolidated NAC estimates

SUMMARY OUTPUT

Regression Statistics	
Multiple R	99.4%
R Square	98.7%
Adjusted R Square	98.7%
Standard Error	111.72
Observations	48

ANOVA

	df	SS	MS	F	Significance	Furbin-Watson
Regression	1	44,108,251	44,108,251	3,534	0.00	1.9493
Residual	46	574,153	12,482			
Total	47	44,682,404				

	Coefficient	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	- 34.48	28.26	- 1.22	0.23	- 91.37	22.41
X All Rates Use	0.99	0.02	59.45	0.00	0.95	1.02

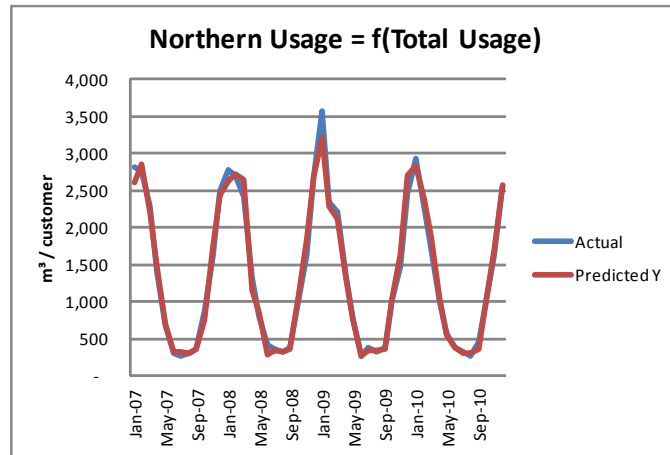
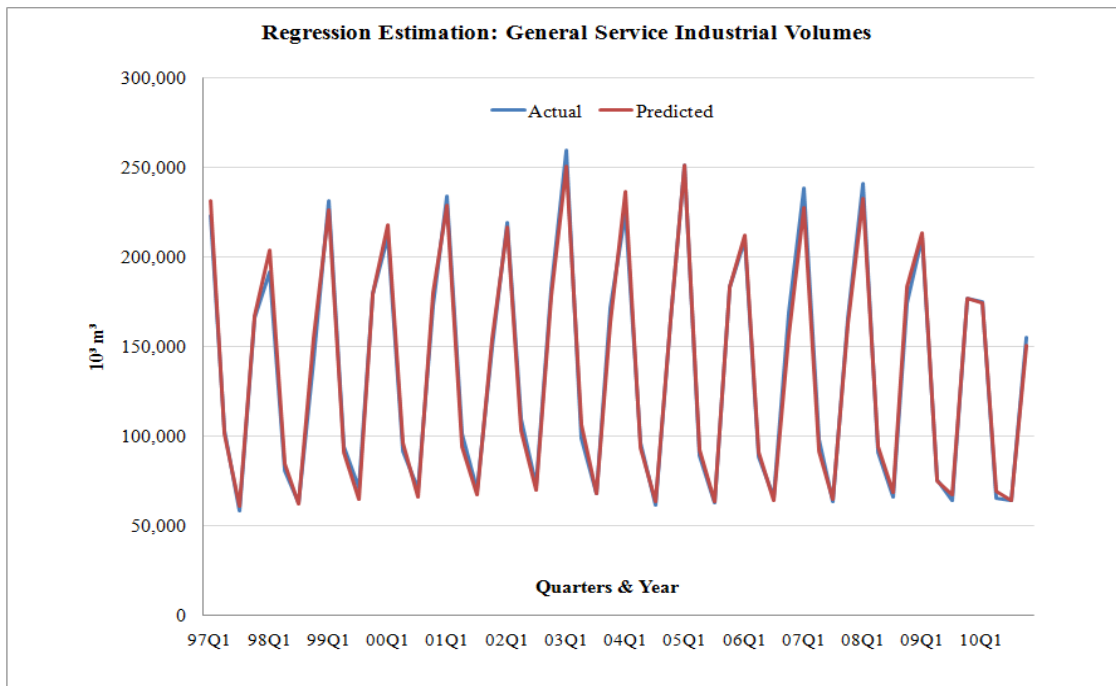




Table 7  
Regression Analysis - Estimated Demand Equations  
GENERAL SERVICE RATES: INDUSTRIAL MARKET

<b>Dependent Variable</b>	<b>Consolidated Rates Volumes</b>	
<b>Adjusted R<sup>2</sup></b>	<b>99.1%</b>	
<b>F Statistic</b>	<b>593.3</b>	
<b>Durbin Watson</b>	<b>1.77</b>	
<u>Independent Variables</u>	<u>Est. Coefficients</u>	<u>t - test result</u>
CONSTANT	16,146.69	1.05
HDD_Q1	82.54	66.61
HDD_Q2	58.49	12.84
HDD_Q4	73.66	40.80
Price HFO No. 6 Lag1	1,542.76	3.11
FX Rate Lag2	30,202.23	3.16
Dummy.After2008	(18,007.72)	(6.00)
Dummy.Q4_2009_Q1_2010	26,145.17	5.76
Dummy.Q4_1999	18,337.75	2.83
Dummy.Q1_2005	14,594.17	2.26
Dummy.Q4_2005	15,462.88	2.39

Figure 9



#### 4/ FORECAST ACCURACY

Forecast accuracy can be shown by two measures:

- i. The ex-post forecast errors show how well the demand equation estimates three years forward for a known actual year. The ex-post analysis re-estimates the demand equations according to a shorter time span (i.e. 1991 to 2007) which recognizes the three year regulatory lag.
- ii. The Mean Absolute % Errors (“MAPE”) compares the actual and predicted annual consumption obtained from the demand regression equations.

Table 8  
Forecast Accuracy - 2013 Demand Forecast Equations

Annual Estimate Percent Error – Ex Post Error for 2010

	<u>Use Eqn.</u>	<u>Volume Eqn.</u>	<u>Forecast</u>
Residential Rate M2	0.60%	0.20%	0.20%
Residential Rate 01	3.90%	2.10%	0.90%
Commercial All Rates	0.80%		0.80%
Industrial All Rates		21.10%	21.10%

Annual Estimate – M.A.P.E : All Historic Years

Residential Rate M2	0.80%	1.30%	0.80%
Residential Rate 01	1.50%	1.80%	1.50%
Commercial All Rates	1.00%		1.00%
Industrial All Rates		2.10%	2.10%

M.A.P.E. - mean absolute percent errors

**PREFILED EVIDENCE**

**SARAH VAN DER PAELT, DIRECTOR, SALES, BUSINESS MARKETS**

**PAUL GARDINER, MANAGER, DEMAND FORECASTING AND ANALYSIS**

This evidence presents the contract customer demand and revenue forecasts for the period 2011 to 2013, and compares the forecast to historical annual revenues and volumes since the 2007 Board-approved forecast (EB-2005-0520). The evidence will describe relevant market trends and factors that influence natural gas consumption in the contract market.

The evidence is organized under the following headings:

1/ Overview

2/ Background

3/ Forecast Process

4/ Contract Customer Volume and Revenue Comparisons:

i. By Market Sector

ii. By Rate Class

5/ In-franchise Gas Fired Power Generation Growth

The following additional information has been included as Appendix A:

1/ LCI market regression and regression analysis results

2/ The Greenhouse market regression and regression analysis results

1 **1/ OVERVIEW**

2 The broad business, economic and environmental factors and trends that affect Union and its  
3 customers over the forecast period have been more fully described in Exhibit A2, Tab 1, Schedule

4 1. Several significant market factors have had an impact on the operations of Union's large  
5 commercial, industrial and power contract customers since EB-2005-0520.

6  
7 These factors include:

- 8 i. Economic recession that began in the later part of 2008 resulting in considerable  
9 permanent demand destruction. The influence is still being felt through slow economic  
10 activity in many of the contract market segments;
- 11 ii. A strong Canadian dollar dampening export markets and industrial manufacturing  
12 production;
- 13 iii. Stable and comparatively low prices for natural gas through the forecast period; and  
14 iv. Continued focus on energy efficiency measures, cost reduction and demand side  
15 management ("DSM") by governments, customers and Union.
- 16

17 The revenue outlook for the contract market for the 2011-2013 forecast period is flat to slightly  
18 declining. In general, revenue generation in the large commercial and industrial markets has been  
19 stagnant since EB-2005-0520. Two sectors that are showing some growth prospects for the  
20 forecast period are the Greenhouse market and the Power Generation market.

1    **2/ BACKGROUND**

2    Union's Business Markets department manages all contract rate class customers and is  
3    responsible for selling regulated services to these high volume contract customers within Union's  
4    franchise area. The volume and revenue forecasts in this evidence apply to the following rate  
5    classes:

- 6        i.    Union South – Rates M4, M5, M7, M9, M10, T1 and T3.  
7        ii.   Union North – Large Rate 10, Rates 20, 25, 30, 77 and 100.

8  
9    Union forecasts and manages the contract market on a customer and sector basis. Union does not  
10   forecast or manage the markets according to rate class. Accordingly, variance explanations  
11   described in this evidence focus on descriptions of major market drivers and trends influencing  
12   demands within the market sectors. In addition, this evidence provides volume and revenue  
13   information by rate class to allow for comparisons to information filed in EB-2005-0520.

14  
15   Union segments the contract customer market into several sectors. They include gas fired power  
16   generation, steel, refinery and petrochemical, greenhouse, wholesale and broad-based commercial  
17   and industrials ("LCI/Key"). Union's contract market accounts for approximately 62% of Union's  
18   total in-franchise throughput and 17% of Union's in-franchise delivery revenue. Within the  
19   contract customer group the Rate 100 and T1 classes represent Union's largest customers and  
20   account for approximately 72% of Union's total contract customer throughput and 44% of

Union's total in-franchise throughput. These large industrial customers are sophisticated, major consumers of energy that operate in a highly competitive North American and global market.

### 3/ **FORECAST PROCESS**

The volume and revenue forecasts for contract customers are developed using two methodologies. An econometric forecast is developed for the majority of the customers and a detailed bottom-up forecast is built for the large T1 and Rate 100 customers.

#### 3.1/ Econometric Forecast Methodology

For the small to mid-size contract markets represented by the LCI and Greenhouse market sectors, Union uses econometric analysis to forecast consumption requirements. Econometric modelling uses mathematical equations to show past relationships between consumption and the variables that influence the consumption. An equation is derived, tested and fine-tuned by regression analysis to ensure that the equation is a reliable representation of the past relationship. Once the equation is established, projected values of the influencing variables are inserted into the equation for forecast purposes.

This forecasting methodology has been in use since 2008. Comprised of approximately 430 accounts from a variety of market sectors, this customer grouping includes 88% of contract customers but accounts for only approximately 40% of Union's contract market revenues.

Union converted to the econometric forecasting methodology for this customer group because the grouping exhibits characteristics that are favourable to formulaic forecasting techniques.

Among the characteristics are:

- i. Identifiable key demand drivers
- ii. Sufficiently large account populations
- iii. Available historic demand data
- iv. Clearly identifiable economic indicators that affect these markets

Multiple regression analysis of historic monthly data identifies the key demand drivers in each market segment. The forecasts produced by the econometric modelling are reviewed by account managers to incorporate any known specific customer or market conditions that may affect consumption and to assess the future number of accounts by market sector.

The key demand drivers that affect the demand forecast and associated revenue in these customer groups are:

- i. Number of accounts within a market sector
- ii. Canada / USA foreign exchange rate
- iii. Natural gas price at Dawn, Ontario & Heavy Fuel Oil No. 6 price



1    3.2/ Detailed Forecast Methodology

2    The remainder of the contract market is comprised of approximately 60 customers (Steel,  
3    Chemical and Refinery, Power and Key market sectors). This group represents 12% of customers  
4    and accounts for approximately 60% of volume throughput and revenue in the contract market.  
5    Union has historically used detailed, bottom-up forecasts for this group and continues to use this  
6    approach given its extensive understanding of these accounts through ongoing interactions  
7    between the customer and the account manager. These large industrial and power generation  
8    customers are sophisticated, major consumers of energy. Using a combination of historical  
9    consumption information and knowledge of specific customer production plans and expectations,  
10   the account manager builds the customer forecast. The account manager seeks input from the  
11   customer when formulating the forecast and discusses the final forecast with them once  
12   completed.

13  
14   **4/ CONTRACT CUSTOMER DEMAND COMPARISONS**

15   Tables 1 and 2 compare consumption volume and revenue between 2007 Board-approved and  
16   2013 forecast by market sector.

Table 1

Volume Comparison by Market Sector  
2007 Board-approved through 2013 Forecast  
(10<sup>6</sup>m<sup>3</sup>)

<u>Line No.</u>	<u>Market Sector</u>	<u>2007 Board-approved</u>	<u>2007 Actual</u>	<u>2008 Actual</u>	<u>2009 Actual</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
1	Power	1,831	2,078	1,659	1,854	2,349	2,464	2,215	2,189
2	Steel/Chemical/ Refinery	3,374	3,272	3,523	2,971	3,271	3,582	3,866	3,734
3	LCI/Key	2,825	2,806	2,697	2,218	2,163	2,180	2,110	2,117
4	Greenhouse	146	173	203	197	246	287	303	315
5	Wholesale/REM	<u>346</u>	<u>297</u>	<u>305</u>	<u>319</u>	<u>315</u>	<u>324</u>	<u>330</u>	<u>334</u>
6	Totals <sup>(1)</sup>	<u>8,521</u>	<u>8,625</u>	<u>8,386</u>	<u>7,560</u>	<u>8,344</u>	<u>8,837</u>	<u>8,824</u>	<u>8,689</u>

(1) Excludes MAV volumes.

Table 2

Revenue Comparison by Market Sector  
2007 Board-approved through 2013 Forecast  
(\$ Millions)

<u>Line No.</u>	<u>Market Sector</u>	<u>2007 Board-approved</u>	<u>2007 Actual</u>	<u>2008 Actual</u>	<u>2009 Actual</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
1	Power	23.5	26.8	26.3	29.0	32.2	32.7	29.7	29.5
2	Steel/Chemical/Refinery	37.2	38.5	37.7	37.0	36.7	38.4	36.1	35.5
3	LCI/Key	44.8	45.1	43.9	39.5	36.8	36.4	35.2	34.7
4	Greenhouse	4.0	3.9	5.2	4.9	5.8	6.3	6.2	6.5
5	Wholesale/REM	<u>6.2</u>	<u>5.5</u>	<u>5.7</u>	<u>5.8</u>	<u>5.7</u>	<u>5.5</u>	<u>5.4</u>	<u>5.4</u>
6	Totals <sup>(1)</sup>	<u>115.7</u>	<u>119.8</u>	<u>118.8</u>	<u>116.2</u>	<u>117.2</u>	<u>119.3</u>	<u>112.6</u>	<u>111.6</u>

(1) 2007 (actual) to 2013 revenue is calculated using Q1, 2011 rates.

1 Table 1 shows volume increases in the Power ( $358 \times 10^6 \text{m}^3$ ) and the Greenhouse ( $169 \times 10^6 \text{m}^3$ )  
2 sectors from 2007 Board-approved to the 2013 forecast. These volume increases drove an  
3 increase in the revenue generated in these sectors during the same period; described in more detail  
4 below. Table 1 also shows an increase in volume for the Steel/Chemical/Refinery sector. As  
5 described later in this evidence, the volume increase is not matched by a corresponding increase  
6 in revenue. The balance of market sectors show either flat or, in the case of the LCI/Key sector,  
7 significantly declining consumption levels.

8  
9 Table 2 depicts the equivalent revenue comparison by market from 2007 Board-approved to the  
10 2013 forecast. Table 2 shows that total contract market revenue is expected to decline by \$4.1  
11 million dollars. Table 2 shows that revenue is expected to increase in the Power and Greenhouse  
12 sectors by \$6.0 million and \$2.5 million dollars respectively. Revenue growth in the Power sector  
13 primarily arises from the full implementation of several long-term sales cycle projects. Activity  
14 in the Power sector is more fully described in the gas fired generation section below. Adding to  
15 revenue growth is the expectation that Greenhouse revenues will increase by approximately \$2.5  
16 million, from \$4.0 million to \$6.5 million. This increase in revenue is attributable to the  
17 comparatively low and stable gas cost environment over the forecast period. Natural gas  
18 continues to meet competition from biomass in the pulp and paper sector, but otherwise, natural  
19 gas has displaced most competitive fuels from the Greenhouse market.

1 Historically, the Greenhouse market has been highly price competitive between oil and natural  
2 gas. However in the current gas price environment Union is projecting that, for the forecast  
3 period, it has 100% fuel penetration of the Greenhouse market. Union forecasts that the additional  
4 revenue will be driven by an increase in the number of greenhouses in this market sector, as well  
5 as a number of expansions to the existing infrastructure which will boost production.

6  
7 Offsetting areas of revenue growth are significant decreases in revenue, primarily in the LCI/Key  
8 sector where revenue declines \$10.1 million dollars from 2007 Board-approved and the 2013  
9 forecast. Even prior to the recession of late 2008, the LCI/Key sectors, primarily the pulp and  
10 paper, mining and automotive part industries were hit hard by the rising value of the Canadian  
11 dollar, leading to considerable demand destruction in these industries. With the onset of the 2008  
12 recession, additional demand destruction and reduced production affected the commercial and  
13 industrial sectors on an even broader basis, resulting in sizeable reductions in revenue from these  
14 contract markets. Union projects demand destruction and further closures will continue in these  
15 commercial and industrial markets over the forecast period based on continued economic  
16 uncertainty and the high value of the Canadian dollar.

17  
18 As previously identified in Table 1 the Steel/Chemical/Refinery sector shows a situation of  
19 increasing consumption while revenues are declining slightly over the forecast period. This is  
20 attributable primarily to contract choices made by the Steel/Chemical/Refinery customers. Some  
21 customers have converted from bundled services like Rate M7 or Rate M4 to Rate T1 service.

1 Rate T1 service, being semi-bundled has lower revenue associated with it. In addition, customers  
2 in this sector have in some cases lowered deliverability contract demand parameters and down  
3 sized their storage contract parameters resulting in reduced revenue. Finally, incremental  
4 throughput has been projected through the more frequent operation of a refinery-based cogen site  
5 over the forecast period resulting in increased throughput, although the customers contract  
6 demand parameters, and hence the revenue contribution, have not changed.

7  
8 The Wholesale/REM market shows both declining consumption ( $12 \times 10^6 \text{ m}^3$ ) and declining  
9 revenues (\$0.8 million) over the forecast period. This reflects an instance of reduction in  
10 distribution contract demand for a Wholesale customer.

11  
12 Table 3 provides a comparison of the forecast 2013 contract customer volumes by rate class to the  
13 2007 Board-approved volume forecast.

Table 3

Volume Comparison by Rate Class  
2007 Board-approved through 2013 Forecast  
(10<sup>6</sup> m<sup>3</sup>)

<u>Line No.</u>	<u>Rate Class</u>	<u>2007 Board-approved</u>	<u>2007 Actual</u>	<u>2008 Actual</u>	<u>2009 Actual</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
1	100	2,203	2,015	1,964	1,806	1,883	1,892	1,904	1,891
2	20	505	451	481	557	546	645	569	610
3	25	101	424	308	200	220	158	133	129
4	T1	4,232	3,831	3,757	3,446	4,102	4,607	4,814	4,666
5	M7	278	584	554	309	315	258	149	147
6	M4	452	520	519	446	439	442	409	380
7	M5	405	504	498	476	525	511	519	531
8	Other (T3,M9,M10)	<u>346</u>	<u>296</u>	<u>305</u>	<u>319</u>	<u>315</u>	<u>324</u>	<u>330</u>	<u>334</u>
9	Total <sup>(1)</sup>	<u>8,521</u>	<u>8,625</u>	<u>8,386</u>	<u>7,560</u>	<u>8,345</u>	<u>8,837</u>	<u>8,826</u>	<u>8,688</u>

(1) Excludes MAV volumes.

Overall, when compared to the 2007 Board-approved volumes, the 2013 forecast shows a net volume increase of 167 10<sup>6</sup>m<sup>3</sup> from 8,521 10<sup>6</sup>m<sup>3</sup> to 8,688 10<sup>6</sup>m<sup>3</sup>.

Table 4 provides a comparison of the forecast 2013 contract customer delivery revenue by rate class to the 2007 Board-approved revenue forecast.

Table 4

Revenue Comparison by Rate Class  
2007 Board-Approved through 2013 Forecast  
(\$ millions)

<u>Line No.</u>	<u>Rate Class</u>	<u>2007 Board-Approved</u>	<u>2007 Actual</u>	<u>2008 Actual</u>	<u>2009 Actual</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
1	100	16.2	15.3	14.5	12.9	12.5	12.6	12.8	12.7
2	20	7.5	7.7	8.1	9.5	10.0	9.5	9.3	9.7
3	25	2.4	8.6	6.1	3.5	3.1	3.5	2.4	2.3
4	T1	55.0	49.5	51.3	56.2	58.8	62.0	58.5	57.8
5	M7	6.7	10.1	9.8	6.7	6.3	5.8	4.0	4.0
6	M4	13.8	14.4	14.7	13.4	12.0	11.9	11.6	10.8
7	M5	8.0	8.2	8.5	8.0	8.8	8.5	8.6	8.9
8	Other (T3, M9, M10, 77)	<u>6.1</u>	<u>6.0</u>	<u>5.8</u>	<u>5.9</u>	<u>5.7</u>	<u>5.5</u>	<u>5.3</u>	<u>5.4</u>
9	Total <sup>(1)</sup>	<u>115.7</u>	<u>119.8</u>	<u>118.8</u>	<u>116.1</u>	<u>117.2</u>	<u>119.3</u>	<u>112.6</u>	<u>111.6</u>

(1) 2007 to 2013 revenue is calculated using Q1, 2011 rates.

Overall, when compared to the 2007 Board-approved revenue, the 2013 forecast shows a net delivery revenue reduction of \$4.1 million from \$115.7 million to \$111.6 million.

**5/ IN-FRANCHISE GAS FIRED POWER GENERATION GROWTH**

Growth in gas fired power generation has been driven by the Ontario government's 'off coal' policy. Three gas fired generation facilities have been constructed in Union's franchise area under the Clean Energy Supply ("CES") initiative:

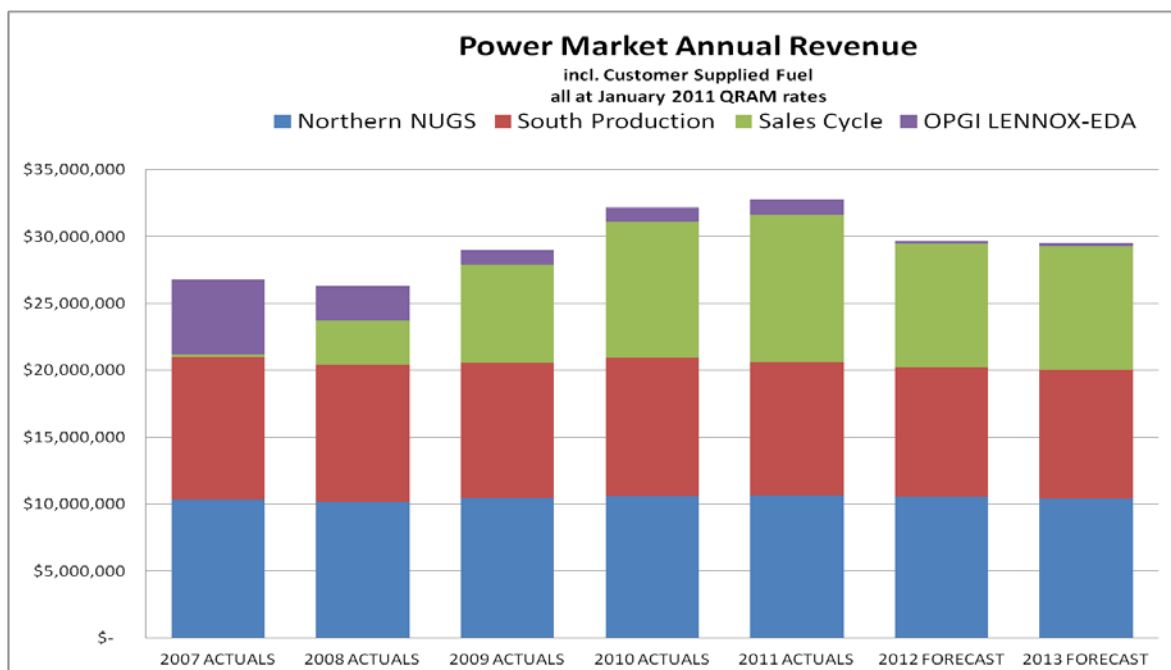
- i. St. Clair Generating Station
- ii. East Windsor Cogeneration Center

iii. Halton Hills Generating Station

These projects have supported the supply mix change from coal to other generation sources, including gas fired generation. Union has invested approximately \$41 million to bring gas infrastructure to these three facilities. In addition, Union is providing high deliverability storage services to these customers, which was developed in response to gas fired generators needs that were identified in EB-2005-0551.

Figure 1 shows the revenue growth in the contract rate gas fired generation segment from 2007 (actual) to the 2013 forecast.

Figure 1  
Power Generation Growth 2007 to 2013





1 The growth in gas fired power generation from the province's CES contracts as well as a coal  
2 conversion project at Thunder Bay, as outlined in the provincial government's Long Term Energy  
3 Plan, accounts for approximately \$9.2 million of revenue growth in Union's power segment. This  
4 is offset by a loss of revenue from Lennox of \$4 million over the same time frame. Revenue from  
5 non-utility generators ("NUGS") located in Union North and production in Union South have  
6 remained fairly constant through this period.

#### 7 8 Future Growth

9 Potential future growth in the gas fired power generation is outlined in the provincial  
10 government's Long Term Energy Plan mentioned above and the Ontario Power Authority's 'IPSP  
11 Planning and Consultation Overview'. These plans identify three potential gas fired generation  
12 projects in Union's franchise including the conversion of coal facilities at Nanticoke and Lambton  
13 to natural gas as well as a peaking facility in the Waterloo-Cambridge area to provide  
14 transmission support.

15  
16 In response to a request from OPG, Union is proceeding with environmental assessment studies of  
17 the coal conversion projects. Neither the coal conversion projects nor the Waterloo-Cambridge  
18 peaking facility has received the required approval to proceed.

**APPENDIX A**

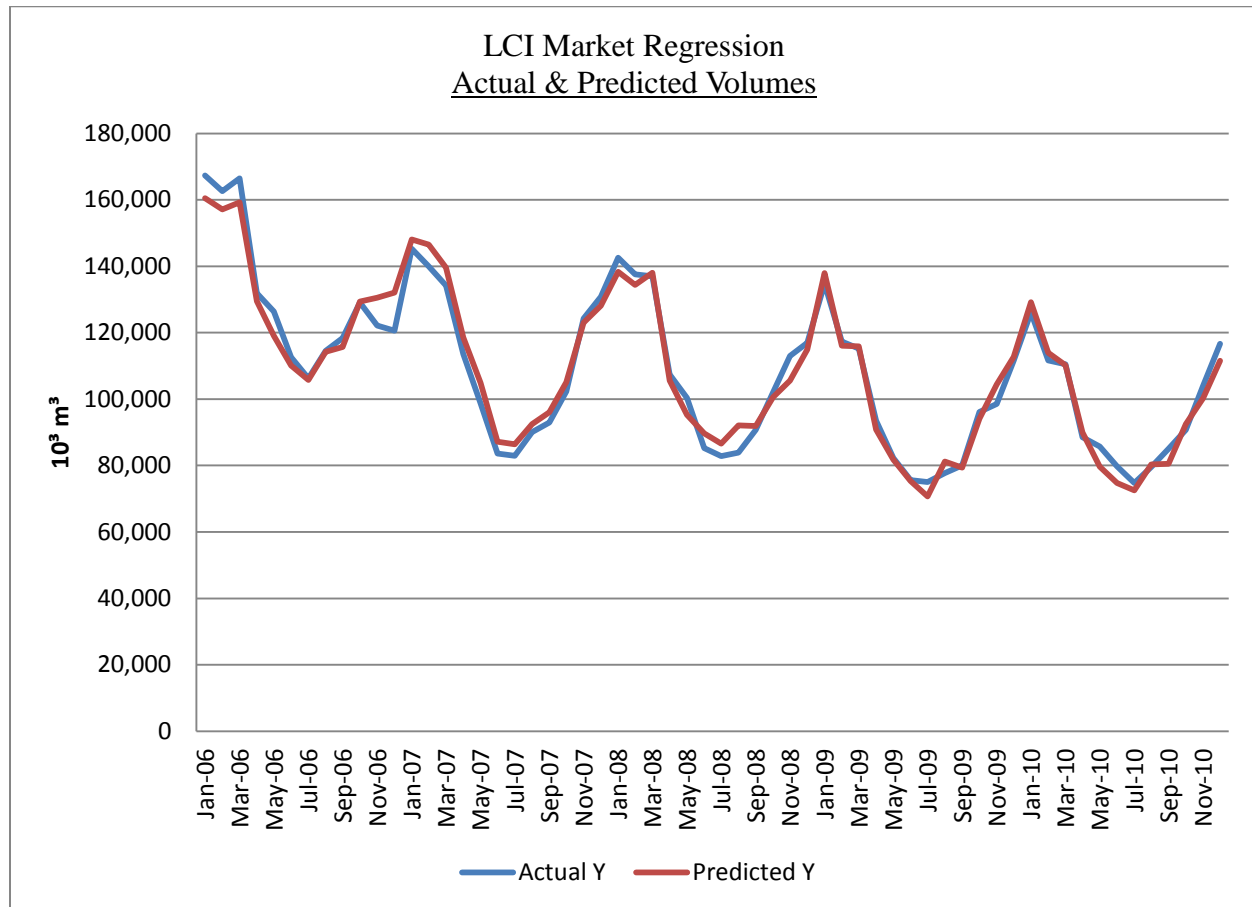
This appendix contains the following background and statistical information:

1/ The LCI market regression and regression analysis results

2/ The Greenhouse market regression and regression analysis results

**1/ LCI MARKET REGRESSION AND REGRESSION ANALYSIS RESULTS**

Figure 1



1

Table 1

REGRESSION ANALYSIS SUMMARY OUTPUT

Data Span: January 2006 to December 2010

<i>Regression Statistics</i>	
Multiple R	98.4%
R Square	96.8%
<b>Adjusted R Square</b>	<b>96.0%</b>
Standard Error	4,753.96
Observations	60

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	DW
Regression	12	32,289,845,491	2,690,820,458	119.1	0.0	0.96
Residual	47	1,062,205,883	22,600,125			
Total	59	33,352,051,374				

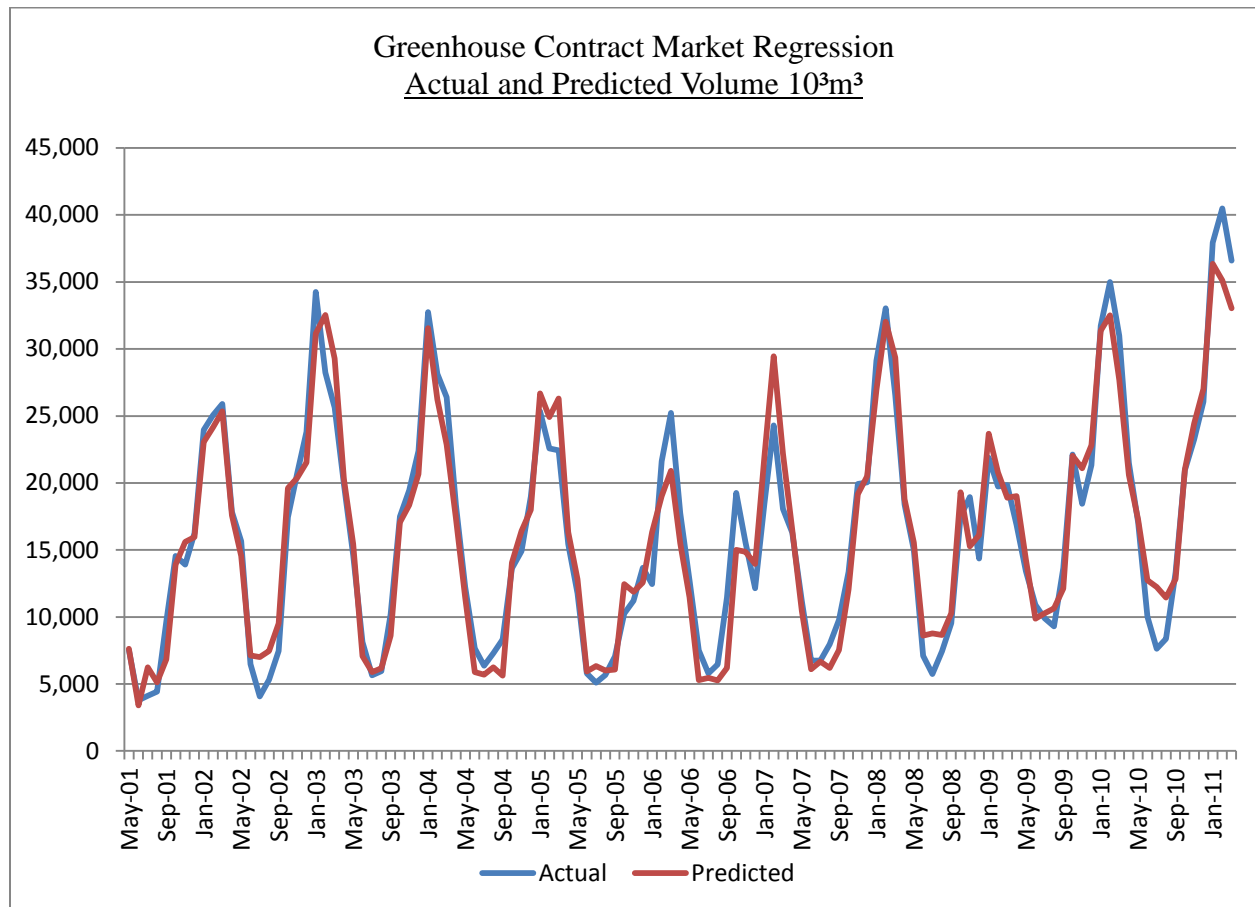
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	(38351.416)	10606.456	<b>(3.616)</b>	0.001	(59688.853)	(17013.980)
Jan HDD	71.271	3.485	<b>20.452</b>	0.000	64.261	78.282
Feb HDD	65.223	3.699	<b>17.634</b>	0.000	57.782	72.663
Mar HDD	75.832	4.533	<b>16.728</b>	0.000	66.713	84.952
Apr HDD	38.719	7.871	<b>4.919</b>	0.000	22.885	54.553
Oct HDD	42.661	8.675	<b>4.918</b>	0.000	25.209	60.112
Nov HDD	48.797	5.571	<b>8.759</b>	0.000	37.590	60.004
Dec HDD	47.144	3.731	<b>12.637</b>	0.000	39.639	54.649
No. Accounts	637.444	30.661	<b>20.790</b>	0.000	575.762	699.126
FX Rate Cdn/US	(37916.872)	9197.926	<b>(4.122)</b>	0.000	(56420.713)	(19413.031)
Dummy June Month	(6316.438)	2448.533	<b>(2.580)</b>	0.013	(11242.252)	(1390.624)
Dummy July Month	(7603.695)	2449.445	<b>(3.104)</b>	0.003	(12531.343)	(2676.048)
Dummy Econ Conditions	(9486.668)	1240.886	<b>(7.645)</b>	0.000	(11983.009)	(6990.328)

2  
3

Note: HDD is total heating degree days below 18<sup>0</sup>C for total company franchise area.

**2/ GREENHOUSE MARKET REGRESSION AND REGRESSION ANALYSIS RESULTS**

Figure 2



1

Table 2

REGRESSION ANALYSIS SUMMARY OUTPUT

Data Span: May 2001 to March 2011

Regression Statistics

Adjusted Observations	119
Deg. of Freedom for Error	101
R-Squared	0.940
<b>Adjusted R-Squared</b>	<b>0.930</b>
Std. Error of Regression	2,249.9
F-Statistic	92.9
Prob (F-Statistic)	0.000%
Model Sum of Squares	7,996,096,208
Sum of Squared Errors	511,247,745
Mean Squared Error	5,061,859
Mean Abs. Dev. (MAD)	1,641.64
Mean Abs. % Err. (MAPE)	12.6%
Durbin-Watson Statistic	1.08

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	941.4	3007.3	0.3	75.5%
Number of Accounts	236.5	27.6	8.6	0.0%
HDD_S_Jan	27.5	0.9	30.4	0.0%
HDD_S_Feb	33.5	1.1	31.4	0.0%
HDD_S_Mar	33.6	1.2	27.8	0.0%
HDD_S_Apr	34.7	4.3	8.1	0.0%
HDD_S_May	36.6	6.7	5.4	0.0%
HDD_S_Oct	31.8	3.4	9.2	0.0%
HDD_S_Nov	23.3	2.0	11.6	0.0%
HDD_S_Dec	18.4	1.2	14.9	0.0%
Input_Oil_Gas_Price Ratio	-6565.4	778.4	-8.4	0.0%
Dummy_Aug. 2009	-5534.6	1110.1	-5.0	0.0%
Cdn / US FX Rate lagged 2 months	-7868.1	1856.7	-4.2	0.0%
Dummy_Summer Months	973.1	437.8	2.2	2.8%

2

Note: HDD is total heating degree days below 18<sup>0</sup>C for southern franchise area

**PREFILED EVIDENCE OF**

**PATTI PIETT, DIRECTOR, STORAGE AND TRANSPORTATION SALES**

**CAROL CAMERON, MANAGER, CAPACITY MANAGEMENT AND UTILIZATION**

This evidence provides an overview of Union's storage and transportation ("S&T") revenue forecast for 2012 and 2013. This evidence should be read in conjunction with the ICF report found at Exhibit A2, Tab 1, Schedule 4 which discusses the changing North American natural gas market dynamics. This evidence is organized under the following headings:

1/ The long-term transportation revenue forecast for 2012 and 2013;

2/ The short-term transportation and exchanges revenue forecast for 2012 and 2013; and,

3/ The short-term storage and balancing revenue forecast for 2012 and 2013.

**1/ LONG-TERM TRANSPORTATION REVENUE FORECAST**

Union's forecast for long-term transportation revenue is \$148.5 million in 2012 and \$141.9 million in 2013. This forecast is made up of three main components: M12 Long-term Transportation, Other Long-term Transportation, and Other Storage & Transportation ("S&T") Services. Factors which influence this forecast are customer demands, market prices, and long-term expectations regarding supply basins. The forecast for long-term transportation assumes there will be no incremental capacity built downstream of Parkway beyond the proposed TransCanada Pipelines ("TCPL") expansions for 2012 and 2013 which were initially filed with the National Energy Board in July, 2011 (2012 Eastern Mainline Expansion).

M12 Long-term Transportation

The revenue for M12 Long-term Transportation represents long-term firm transportation on Union's Dawn-Parkway transmission system as captured on the M12 transportation rate schedule. It includes M12, M12X, and F24T transportation services which transport gas supplies easterly, westerly, or bi-directionally on this system. Table 1 provides the actual and forecast revenue for M12 Long-term Transportation.

Table 1  
M12 Long-term Transportation Revenue

<u>Revenue (\$Millions)</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
M12 Transportation	\$141.9	\$138.3	\$134.0	\$121.1
M12 Transportation Overrun	0.5	0.0	0.0	0.0
M12X Transportation	<u>0.0</u>	<u>\$1.5</u>	<u>5.9</u>	<u>13.5</u>
Total	<u>\$142.4</u>	<u>\$139.8</u>	<u>\$139.9</u>	<u>\$134.6</u>

There has been a general decline in M12 transportation revenues since 2010 due to rate changes and a reduction in customer demands. Changes in demand are driven by the changing market dynamics, including shale production causing reduced exports at Niagara/Chippewa, as described in Exhibit A2, Tab 1, Schedule 1 and Schedule 4. Specific variances by year are described below and reconciled in Schedules 1 and 2.



2011 Actual vs. 2010 Actual Variance

M12 Long-term Transportation actual revenue for 2011 is \$2.7 million lower than 2010. The largest component of this reduction is due to a rate decrease, which decreased revenue by \$2.0 million. In addition, there was a further reduction of \$1.3 million in revenue due to a two month impact of TCPL's non-renewal of 317,000 GJ/d of Dawn-Kirkwall capacity commencing November 1, 2011. Union received notice of this reduction from TCPL in October, 2009. The impact of this reduction is offset by an increase in revenue of \$1.0 million driven by the resale of 211,407 GJ/d of capacity in 2011. This is comprised of 31,746 GJ/d of Dawn-Kirkwall sales and 179,661 GJ/d of Dawn-Parkway. The remaining capacity was used to support additional Dawn-Parkway contracts of 122,950 GJ/d starting in 2012.

The impact of the introduction of Union's new M12X transportation service is seen in 2011. This service allows customers to transport gas on the Dawn-Parkway system bi-directionally and receive or deliver gas between Dawn, Kirkwall and Parkway. For example, customers may transport gas westerly to Dawn from either Kirkwall or Parkway, or easterly from Dawn or Kirkwall to Parkway. In 2011, 128,316 GJ/d of Dawn-Parkway M12 transport capacity was converted to the M12X transportation service. To aid in the conversion, Parkway to Dawn C1 Long-term Transportation capacity was also turned back. The M12X conversion was based on an open season held in 2010. It is comprised of 128,316 GJ/d commencing September 1, 2011 and a further 262,695 GJ/d commencing November 1, 2012. The net impact of the M12X conversion is an increase in M12 Long-Term transportation revenue of \$0.3 million, which is completely

offset by a reduction in C1 Long-Term firm transportation revenue caused by the turnback of Parkway to Dawn C1 Long Term transportation capacity.

2012 Forecast vs. 2011 Actual Variance

The revenue forecast for 2012 is approximately \$0.2 million higher than 2011 as a result of the following:

- i. A reduction in revenue of \$6.3 million due to a 10 month (January – October) impact of 317,000 GJ/d of Dawn-Kirkwall turnback that started November 1, 2011;
- ii. Incremental Dawn-Kirkwall turnback starting November 1, 2012 of 375,188 GJ/d, further reducing revenue for a two month impact of \$1.5 million. Union received notice of this turnback in October 2010;
- iii. The net impact of the new M12X transportation service is an increase in 2012 revenue of \$0.9 million. This increase is offset by a \$0.8 million reduction in C1 long-term revenue (Parkway to Dawn and Parkway to Kirkwall) described later in this evidence;
- iv. An increase in revenue of \$4.8 million relating to a 10 month (January to October) impact of 211,407 GJ/d of new sales which commenced in November, 2011;
- v. Incremental new sales of 133,950 GJ/d of Dawn-Parkway contracts which commence May 1, 2012 and November, 2012 and a new Kirkwall-Parkway contract of 88,497 GJ/d commences November 1, 2012. These new contracts increased revenue by \$1.9 million; and,
- vi. An increase in F24T revenue in 2012 by \$0.4 million.

In 2010, there was one customer who utilized \$0.546 million of M12 transportation overrun. In 2011, this customer used \$0.017 of M12 transportation overrun. Union is not forecasting any M12 transportation overrun in 2012 and 2013.

2013 Forecast vs. 2012 Forecast Variance

In 2013, the M12 transportation revenue is forecast to decline by of \$5.3 million. This is largely due to:

- i. A 10 month (January – October) impact of the reduction in Dawn-Kirkwall demand of 375,188 GJ/d beginning on November 1, 2012, decreasing revenue by \$7.5 million;
- ii. A 2 month (November – December) impact of the further reduction of Dawn-Kirkwall and Dawn-Parkway demands of 353,198 GJ/d beginning November 1, 2013, decreasing revenue by \$1.4 million;
- iii. A full year impact of new Dawn-Parkway and Kirkwall-Parkway sales which commenced in May and November 2012 and the 2 month impact of a Kirkwall-Parkway sale of 174,752 GJ/d commencing November 1, 2013. These changes increase revenue by \$2.3 million;
- iv. A full year impact of the M12X transportation service, which started in 2012, increasing revenue by \$1.7 million. This impact is partially offset by a reduction in Parkway to Dawn and Parkway to Kirkwall C1 Long-term Transportation revenue as discussed later in this evidence; and,
- v. A net reduction in F24T revenue of \$0.3 million.

1 Impacts of M12 Transportation Turnback

2 As noted above, Union has received notice from customers for significant turnback of M12  
3 transportation contracts in 2011 and 2012, and is forecasting further turnback in 2013. A  
4 summary of the M12 transportation turnback can be found on Schedule 3.

5  
6 In 2011, all of the turned back Dawn-Kirkwall capacity of 317,000 GJ/d was resold; 179,661  
7 GJ/d of Dawn-Parkway capacity and 31,746 GJ/d of Dawn-Kirkwall capacity was sold with a  
8 November 1, 2011 start date. A further 122,950 GJ/d of Dawn-Parkway capacity was sold with  
9 2012 start dates.

10  
11 In 2012, a further 375,188 GJ/d of Dawn-Kirkwall capacity has been turned back. Based on  
12 Open Seasons held in 2010 and 2011, Union was able to sell 11,000 GJ/d of the available Dawn-  
13 Parkway capacity. In addition, approximately 200,000 GJ/d was used to reduce winter peaking  
14 service requirements. As a result, Union has no forecast winter peaking service requirements in  
15 2012 or 2013.

16  
17 In 2013, a further 286,198 GJ/d in Dawn-Kirkwall capacity and 67,000 GJ/d of Dawn-Parkway  
18 capacity is forecast to be turned back. Union does not forecast any new sales of Dawn-Parkway  
19 or Dawn-Kirkwall capacity in 2013.

For 2012 and 2013, Union was able to provide Kirkwall-Parkway service of 88,497 GJ/d, commencing November 1, 2012, and an incremental 174,752 GJ/d commencing November 1, 2013.

#### Other Long-term Transportation

There are three components that comprise the Other Long-term Transportation revenue forecast: C1 Long-term Transportation; M13 (Local Production); and M16 (Storage Transportation Service). Actual and forecast revenues for these services are shown in Table 2.

Table 2

#### Other Long-term Transportation Revenue

<u>Revenue (\$ Millions)</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
C1 Long-term Transportation	\$6.3	\$7.6	\$6.6	\$5.2
M13 Transportation	0.4	0.3	0.4	0.4
M16 Transportation	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>
Total	<u>\$7.3</u>	<u>\$8.5</u>	<u>\$7.6</u>	<u>\$6.2</u>

The change in revenue between 2010 Actual and the 2013 Forecast is entirely due to C1 Long-term Transportation demand. The decline in C1 Long-term Transportation revenue since 2011 is due to changes in market dynamics and gas flows affecting the Dawn-Parkway and Ojibway systems. Specific changes are detailed below and provided in Schedules 4 and 5.

- i. In 2011, C1 Long-term Transportation revenue is higher than 2010 by \$1.3 million. The largest component of this change is a Dawn-Dawn (TCPL) contract for 500,000 GJ/d which commenced November 1, 2010, creating a 10 month (January to October) variance of \$1.1 million. There is also a full year impact of nearly \$0.5 million related to contract increases of 36,212 GJ/d for Ojibway-Dawn capacity which commenced in October and November, 2010. This is offset by a contract non-renewal for 36,927 GJ/d on the Ojibway-Dawn path, effective April 1, 2011;
- ii. In 2011, Parkway-Kirkwall C1 Long-term Transportation demand of 128,316 GJ/d (September 1, 2011 start date) was converted to the new bi-directional M12X transportation service, reducing C1 Long-term Transportation revenue by \$0.3 million. In 2012, Parkway-Dawn C1 Long-term Transportation demand of 200,000 GJ/d (November 1, 2012 start date) was also converted, reducing C1 Long-term Transportation revenue by approximately \$0.8 million in 2012. Offsetting demands and revenues for the M12X transportation service in both 2011 and 2012 are reflected in M12 Transportation Revenue, described earlier; and,
- iii. In 2013, there is a 10 month (January to October) impact of the M12X conversion, reducing revenue by \$1.1 million. There is a further reduction in Parkway-Dawn C1 Long-term Transportation demand of 54,357 GJ/d (April 1, 2013 start date), due to contract expiries and reductions, resulting in a decline in revenue of \$0.3 million.

1 Other S&T Revenue

2 The final component of the Long-term Transportation revenue forecast is Other S&T Revenue.

3 This is comprised of revenue earned from name changes, Ontario Producers and other  
4 miscellaneous services. The revenue for these services has been constant at \$1.1 million in 2010  
5 and 2011. The forecast for 2012 and 2013 is \$1.1 million.

6  
7 **2/ SHORT-TERM TRANSPORTATION AND EXCHANGES REVENUE FORECAST**

8 The short-term transportation and exchanges revenue forecast is \$32.2 million for 2012, and  
9 \$20.2 million for 2013. Factors which influence this forecast are customer demands, market  
10 prices, locational basis spreads and weather. The forecast assumes normal weather, and it also  
11 assumes there will be no incremental transportation capacity built downstream of Parkway  
12 beyond the proposed TCPL expansions for 2012 and 2013.

13  
14 This forecast is made up of two main components: transportation and exchanges.

15  
16 Transportation

17 The transportation component of the transactional forecast is comprised of short-term firm and  
18 interruptible transportation on Union's Dawn-Parkway system, the Ojibway system, and St.  
19 Clair/Bluewater system. Actual and forecast revenues for these services on the three systems are  
20 shown in Table 3.

Table 3

Short-term Transportation Revenue

<u>Revenue - \$Million's</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
Dawn-Parkway system	\$9.3	\$8.0	\$8.7	\$8.7
Ojibway system	2.6	1.0	0.6	0.6
St. Clair/Bluewater system	<u>0.9</u>	<u>3.5</u>	<u>1.8</u>	<u>1.8</u>
TOTAL	<u>\$12.8</u>	<u>\$12.5</u>	<u>\$11.1</u>	<u>\$11.1</u>

The decline in revenues for Dawn-Parkway short-term transportation since 2010 reflects the reduction in Dawn-Parkway values resulting from insufficient take-away capacity on TCPL downstream of Parkway. More detail regarding this can be found at Exhibit A2, Tab 1, Schedule 1 which discusses, among other things, the changes in gas supply dynamics, the impact of the changes on Union's Dawn to Parkway system and the impact of TCPL's capacity constraint between Parkway and TCPL's connection at Maple.

The significant reduction in revenue on the Ojibway path reflects the reduction in market spreads seen in 2011.

Changes in the Transportation Market

Since 2007, there have been significant changes in the North American gas market. These changes are described at Exhibit A2, Tab 1, Schedule 1 and Schedule 4.



1 There has been a significant reduction in load factors on TCPL long-haul service, resulting in  
2 increases in TCPL tolls. In order to mitigate this trend, TCPL introduced the Firm Transportation  
3 Risk Alleviation Mechanism (“FT RAM”) program. This program gives firm shippers of long-  
4 haul capacity (or short-haul capacity linked to long-haul capacity) credits for any capacity left  
5 unutilized. These credits can then be spent, in the same month upon which they are earned, on  
6 any interruptible service on TCPL’s system. The program was designed to encourage shippers to  
7 remain contracted on TCPL’s system.

8  
9 On September 1, 2011, TCPL filed evidence with the National Energy Board (“NEB”) aimed at  
10 redesigning their overall framework. Included in TCPL’s proposal was the elimination of the FT  
11 RAM program.

12  
13 The 2012 forecast assumes the TCPL FT RAM program will be eliminated on November 1,  
14 2012. A full year impact of the FT RAM program being discontinued is reflected in 2013.

15  
16 Exchanges

17 Exchange revenue is comprised of activity using Union’s upstream transportation capacity to  
18 provide exchange services to third-parties. It also includes net revenue generated from pipe  
19 releases or revenue from TCPL’s FT RAM program. Actual and forecast revenue for exchanges  
20 are shown in Table 4.

Table 4  
Exchange Revenue

<u>Year</u>	<u>\$ Millions</u>
2006	2.6
2007	3.4
2008	11.6
2009	20.5
2010	19.7
2011 Actual	31.7
2012 Forecast	21.1
2013 Forecast	9.1

The single biggest factor contributing to growth in exchange revenue was the utilization of the TCPL FT RAM program starting in 2008. Full year impacts of this program are seen in 2009 and 2010. Union's 2011 actual revenue is primarily supported by TCPL's FT RAM program, but also includes activity related to colder-than-normal weather, TCPL outages, and system outages downstream of Parkway. All of these factors resulted in price spikes that are not forecast to reoccur.

It is also expected that during the forecast period, the increase in shale production will continue to put downward pressure on market spreads for exchange paths, thus reducing value of services to points such as Iroquois. This is described at Exhibit A, Tab 2, Schedule 1.

The 2013 forecast of \$9.1 million exceeds the actual revenues earned in years prior to the TCPL FT RAM program optimization. As noted earlier, TCPL's FT RAM program is expected to be terminated in 2012.

### **3/ SHORT-TERM STORAGE & BALANCING**

Union's forecast for short-term storage and balancing is \$9.1 million in 2012 and \$11.5 million in 2013. This forecast is made up of two components: peak short-term storage, and off-peak storage, balancing and loans.

#### **Changes in Short-term Storage Market**

Since 2007, there has been a steady decline in short-term storage prices, with the most significant reductions seen since spring, 2010. These storage price reductions reflect a declining spread between summer and winter gas prices. The main drivers for this declining spread are:

- i. Increased summer values as a result of higher demands in the power sector;
- ii. Lower winter values as a result of higher supplies from increased Marcellus shale production; and,
- iii. Lower winter values as a result of lower demands resulting from an overall sluggish economy in the U.S., as well as energy efficiencies.

The decline in storage spreads is exemplified by the reduction in the actual price of short-term peak storage space relative to price included in approved rates. In 2011, 10.1 PJ of short-term

1 peak storage space sold at an average price of \$0.66 Cdn/GJ. This compares to a price of \$0.85  
2 Cdn/GJ included in current approved rates.

3  
4 The impact of these market forces has also impacted the volatility of storage prices on a short-  
5 term basis. In a market where gas supply is plentiful, price spikes are less likely and the value of  
6 gas season over season remains more constant. With reduced volatility in month-to-month and  
7 season-to-season gas values, there is less value for short-term storage and balancing services.

8  
9 The most recent forecast of storage spreads based on NYMEX data is provided in Figure 14 of  
10 Exhibit A2, Tab 1, Schedule 4.

11  
12 Short-term Storage and Balancing Forecast

13 Short-term peak storage revenue is generated from the sale of short-term storage space based on  
14 the difference between the 100 PJ set aside for in-franchise use, and the forecast in-franchise  
15 requirement. The in-franchise requirements are described at Exhibit D1, Tab1.

16  
17 Off-peak storage and balancing represents short-term storage-based services that do not have gas  
18 in storage over the October 31 peak time period.

19  
20 Actual and forecast revenue for these services are shown in Table 5.

Table 5  
Short-term Storage and Balancing Revenue

<u>Revenue (\$ Millions)</u>	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
Short-term peak storage	\$14.9	\$9.0	\$6.6	\$9.0
Off-peak storage, Balancing and Loans	<u>6.0</u>	<u>1.9</u>	<u>2.5</u>	<u>2.5</u>
Total	<u>\$20.9</u>	<u>\$10.9</u>	<u>\$9.1</u>	<u>\$11.5</u>

Generally, short-term peak storage is sold with terms which overlap calendar years. For example, for a 12-month contract commencing July 1<sup>st</sup>, 6 months of revenue would be captured in the first calendar year, and 6 months would carry-over into the following calendar year.

Short-term peak storage revenue in 2011 declined from 2010 by \$5.9 million driven by lower storage values. The average price of new contracts in 2011 was \$0.66 Cdn/GJ, compared to \$1.39 Cdn/GJ for contracts which started in 2010. The short-term space available for sale in 2011 was 10.1 PJ, compared to 10.2 PJ in 2010.

In 2012, short-term peak storage revenue decreases from 2011 by \$2.4 million. The main reason for this forecast reduction is the expectation that storage values will continue to decline. In the 2012 forecast, new contracts are expected to be sold for \$0.55 Cdn/GJ. The impact of lower prices in 2012 is a reduction in revenue of \$3.4 million. This price variance is offset by an increase in the amount of available storage space for sale. In 2012, short-term space available for sale is forecast to increase to 12.6 PJ, resulting in an increase in revenue of \$1.0 million.

In 2013, short-term peak storage revenue increases from 2012 by \$2.4 million. The main reason for this increase is due to a forecast recovery in storage prices, which increases revenue by \$1.7 million. The forecast for 2013 assumes new contracts are sold at \$0.85 Cdn/GJ, compared to \$0.55 Cdn/GJ in 2012. In addition, the storage space available in 2013 is higher than in 2012, resulting in an increase in revenue of \$0.7 million.

The short-term space available for sale and average prices from 2010 actual to the 2013 forecast are summarized in Table 6.

Table 6

Short-term Storage Space and Average Prices

	<u>2010 Actual</u>	<u>2011 Actual</u>	<u>2012 Forecast</u>	<u>2013 Forecast</u>
Short-term Peak Storage Space at October 31	10.2 PJ	10.1 PJ	12.6 PJ	13.0 PJ
Average Price (new contracts) - \$Cdn/GJ	\$1.39	\$0.66	\$0.55	\$0.85

The impact of reduced volatility of gas prices at Dawn can be seen in the reduction in off-peak, balancing and loan revenue between 2010 and 2011. Stable gas prices and reduced volatility significantly reduces the value of these off-peak services because there are limited month-to-

- 1 month price opportunities to capitalize upon. This trend is expected to continue into 2012, but is
- 2 forecast to start to recover by 2013.
- 3
- 4 A summary of Union's Long-term Transportation and S&T Transactional actual and forecast
- 5 revenues can be found at Exhibit C1, Summary Schedule 5.

UNION GAS LIMITED  
Reconciliation of M12 Demands  
Demands as of November, 1 (GJ/d)

Line No.			Actual 2010	Actual 2011	Forecast 2012	Forecast 2013	
1	M12	Dawn-Kirkwall	1,496,518	1,211,264	773,381	487,183	
2		Dawn-Parkway	3,615,114	3,666,459	3,600,050	3,533,050	/u
3		Kirkwall-Parkway	-	-	88,497	263,249	
4		Parkway-Dawn	7,076	7,076	7,076	7,076	
5	M12X	Bidirectional	-	128,316	391,011	391,011	/u
6	Total Demands		5,118,708	5,013,115	4,860,015	4,681,569	
7	Change in Demand:		-	(105,593)	(153,100)	(178,446)	
	Reason for Change in Demand:						
8	Turnback <sup>(1)</sup>	Dawn-Kirkwall	-	(317,000)	(375,188)	(286,198)	
9		Dawn-Parkway	-	-	-	(67,000)	
	Conversion to M12X						
10		Dawn-Kirkwall	-		(62,695)	-	
11		Dawn-Parkway	-	(128,316)	(200,000)	-	/u
12	New Sales	Dawn-Kirkwall	-	31,746	-	-	
13		Dawn-Parkway	-	179,661	133,950	-	
14		Kirkwall-Parkway	-	-	88,497	174,752	
15		M12X Bi-directional	-	128,316	262,695	-	/u
16	Other	Dawn-Parkway	-	-	(359)	-	
17	Change in Demand:		-	(105,593)	(153,100)	(178,446)	

Note:

(1) More detail regarding the impact of M12 turnback can be found at Exhibit C1, Tab 3, Schedule 3.



UNION GAS LIMITED  
Reconciliation of M12 Revenue  
(\$000's)

Line No.			Actual 2010	Actual 2011	Forecast 2012	Forecast 2013	
1	M12	Dawn-Kirkwall	36,218	34,515	27,114	17,286	
2		Dawn-Parkway	102,669	100,806	103,501	100,399	/u
3		Kirkwall-Parkway	-	-	59	473	
4		F24T, Other	2,987	2,935	3,298	2,952	/u
5	M12X	Bidirectional	-	1,477	5,942	13,499	/u
6	M12 Overrun		546	17	-	-	/u
7	Total Revenue		142,421	139,750	139,914	134,608	/u
8	Change in Revenue		-	(2,671)	165	(5,306)	/u
Reasons for Change in Revenue: <sup>(1)</sup>							
9	Rate change, effective January 1, 2011		-	(2,031)	-	-	
10	Turnback	Dawn-Kirkwall	-	(1,258)	(7,782)	(8,584)	
11		Dawn-Parkway	-	(127)	-	(312)	
12		F24T <sup>(2)</sup>	-	-	-	(587)	/u
Conversion to M12X							
13		Dawn-Kirkwall	-	-	(249)	(1,244)	
14		Dawn-Parkway	-	(1,197)	(3,327)	(4,664)	/u
15	New Sales	Dawn-Kirkwall	-	126	630	-	
16		Dawn-Parkway	-	850	6,032	1,906	
17		Kirkwall-Parkway	-		59	413	
18		M12X Bi-directional	-	1,477	4,465	7,558	/u
19		F24T <sup>(2)</sup>	-	-	363	240	/u
20	M12 Overrun		-	(529)	(17)	-	/u
20	Other		-	18	(10)	(33)	
21	Change in Revenue:		-	(2,671)	165	(5,306)	/u

Note:

- (1) Contract changes taking effect in one year, will not have full year impact until following year.  
For example, turnback commencing Nov 1, 2011 will only have 2 month impact on 2011 revenue, and will have a full 12 month impact on 2012 revenue. Revenue impacts are derived from M12 demand changes identified at Exhibit C1, Tab 3, Schedule 1.
- (2) F24T is a revenue impact only.

UNION GAS LIMITED  
Impact of M12 Turnback  
Demands as of November, 1 (GJ/d)

Line No.		Actual 2011	Forecast 2012	Forecast 2013
1	Total Turnback	(317,000)	(375,188)	(353,198)
	Dawn-Parkway/Kirkwall Sales			
2	Resold in 2011	211,407	-	-
3	Resold in 2012	122,950	11,000	-
4	Resold in 2013			
5	Total	334,357	11,000	-
6	Reduction to Winter Peaking Service <sup>(1)</sup>	-	200,000	-
7	Re-purposed as Kirkwall-Parkway	-	88,497	174,752

(1) Reduction to Winter Peaking Service is approximate.

UNION GAS LIMITED  
Reconciliation of C1 Demands  
Demands as of November, 1 (GJ/d)

Line No.		Actual 2010	Actual 2011	Forecast 2012	Forecast 2013	
1	C1 Dawn to Dawn Vector	92,845	92,845	92,845	92,845	
2	Dawn - Dawn(TCPL)	500,000	500,000	500,000	500,000	
3	Dawn to Parkway(TCPL)	7,065	7,065	7,065	7,065	
4	Ojibway to Dawn	113,254	96,327	85,460	85,460	
5	Parkway - Dawn	617,296	617,296	401,728	347,371	
6	Parkway - Kirkwall	128,316	-	-	-	/u
7	Total Demands	1,458,776	1,313,533	1,087,098	1,032,741	/u
8	Change in Demand: <sup>(1)</sup>	-	(145,243)	(226,435)	(54,357)	/u
Reason for Change in Demand:						
9	New Sales Ojibway-Dawn	-	20,000	-	-	
10	Turnback Ojibway-Dawn	-	(36,927)	(8,582)	-	
11	Parkway-Dawn	-	-	(15,568)	(54,357)	
Conversion to M12X						
12	Parkway-Dawn	-	-	(200,000)	-	
13	Parkway-Kirkwall	-	(128,316)	-	-	/u
14	Other	-	-	(2,285)	-	
15	Change in Demand: <sup>(1)</sup>	-	(145,243)	(226,435)	(54,357)	/u

Note:

- (1) Revenue impacts resulting from changes in C1 contract demands can be found at Exhibit C1, Tab 3, Schedule 5.

UNION GAS LIMITED  
Reconciliation of C1 Revenue  
(\$000's)

Line No.			Actual 2010	Actual 2011	Forecast 2012	Forecast 2013	
1	C1	Dawn to Dawn Vector	48	47	47	47	
2		Dawn - Dawn(TCPL)	222	1,320	1,320	1,320	
3		Dawn to Parkway(TCPL)	413	378	413	413	
4		Ojibway to Dawn	764	1,303	1,032	1,106	/u
5		Parkway - Dawn	4,082	4,037	3,742	2,360	
6		Parkway - Kirkwall	848	559	-	-	/u
7		Rate Adjustments	(89)	(74)	-	-	/u
8	Total Revenue		6,288	7,570	6,554	5,246	/u
9	Change in Revenue: <sup>(1)</sup>		-	1,282	(1,016)	(1,308)	/u
Reason for Change in Revenue:							
10	Rate Change effective January 1, 2011		-	(65)	-	-	
11	New Sales	Ojibway-Dawn	-	499	-	-	
12		Dawn-Dawn (TCPL)	-	1,100	-	-	
13	Turnback	Ojibway-Dawn	-	(177)	(127)	(95)	
14		Parkway-Dawn	-	-	(76)	(292)	
Conversion to M12X							
15		Parkway-Dawn	-	-	(218)	(1,090)	
16		Parkway-Kirkwall	-	(280)	(559)	-	/u
17	Other		-	205	(35)	169	/u
18	Change in Revenue: <sup>(1)</sup>		-	1,282	(1,016)	(1,308)	/u

Note:

- (1) Revenue impacts are based on changes in C1 demands identified at Exhibit C1, Tab 3, Schedule 4.

**PREFILED EVIDENCE**

**CHERYL NEWBURY, MANAGER, DISTRIBUTION REVENUE**

The purpose of this evidence is to discuss Union's forecast of Other Revenue. As shown at Exhibit C3, Tab 3, Schedule 1, Union's 2013 forecast of Other Revenue is \$23.132 million. This represents a decrease of \$1.3 million as compared to the Board-approved forecast of \$24.434 million for 2007.

Actual revenues were \$29.849 million in 2007 and are forecast to decline to \$23.132 million in 2013 as a result of the migration of direct purchase general service customers to sales service, a reduction in direct purchase balancing fee revenues and reduced revenue from delayed payment charges. The number of direct purchase general service customers peaked in January 2007 at 487,077 and has steadily declined since to 315,202 at January 2011. This equates to a \$2.7 million decrease in billing revenue compared to the Board-approved forecast for 2007.

The 2012 forecast for Other Revenue is \$23.162 million as shown at Exhibit C4, Tab 3, Schedule 1. Other Revenue is relatively flat with a slight decline driven by a reduction in the number of direct purchase contracts.

The 2011 actual result for Other Revenue is \$23.080 million as shown at Exhibit C5, Tab 3, Schedule 1. This represents a \$0.082 million decrease relative to the 2012 forecast of \$23.162

1 million. This decrease is largely due to the difference in the number of direct purchase general  
2 service customers in the two forecasts. The 2012 forecast customer count, based on Union's  
3 established forecasting methodology for billing revenues, holds the direct purchase general service  
4 customer count constant at January 2011 levels for the forecast period. The actual 2011 direct  
5 purchase general service customer count at December 31, 2011 is 239,531.

6  
7 The 2010 actual result for Other Revenue is \$23.504 million shown at Exhibit C6, Tab 3, Schedule  
8 1. This figure is \$0.424 million higher than the 2011 actual result of \$23.080 million. The decline  
9 between 2010 and 2011 is primarily driven by direct purchase general service customers migrating  
10 to sales service.

**PREFILED EVIDENCE OF**

**PAUL GARDINER, MANAGER, DEMAND FORECASTING AND ANALYSIS**

This evidence presents Union's proposed 20-year declining trend weather normalization method used for the 2013 demand forecast. The evidence compares Union's proposed method to the existing 55:45 weather normalization method approved in EB-2005-0520.

The evidence is organized under the following headings:

1/ Overview

2/ Rationale for Change

3/ Statistical Analysis and Criteria

4/ Conclusion

**1/ OVERVIEW**

Union has forecast the 2013 general service and small volume contract demand incorporating a change in its weather normalization method. The 2013 general service demand is set according to a 20-year declining trend weather normal method. Weather normalization is used to determine Union's demand forecast, storage and transportation allocations, gas supply planning and rate design activities. Weather is defined by heating degree-days ("HDD"), which represent temperatures below 18°C.

1 The current weather normal method at Union is a blended method that combines the 20- year  
2 declining trend method with the 30-year average method. The blend proportions are 55% for the  
3 30 year average and 45% for the 20-year declining trend. The blended normal method has been  
4 used since 2004 when the initial blend ratio was set by the Board at 70:30 and then reset in the  
5 2007 rate case decision (EB-2005-0520) at the 55:45 blend ratio.

6  
7 The primary objective of an acceptable weather normalization method is to set a weather normal  
8 level that will best reflect what future weather is typically expected to be. Union and customers  
9 will then be kept neutral with respect to weather in the long-term. The 20-year declining trend  
10 method meets these requirements.

## 11 12 **2/ RATIONALE FOR CHANGE**

13 The main reason for the change in weather normalization method is that the current blended  
14 weather normal is biased upwards towards colder weather. Analysis of actual weather over the  
15 past 27 years demonstrates this fact.

16  
17 The historic analysis indicates that the current blended weather normal will not provide a  
18 symmetric estimate<sup>1</sup> of weather over the forecast period. This implies that natural gas demand  
19 and delivery revenue estimates will most likely be over stated when the actual demand is  
20 recorded. The blended 55:45 method for 2013 will most likely overstate the 2013 delivery

---

<sup>1</sup> A symmetric estimate of weather is an estimate that results in variances relative to actual weather that are equally positive and negative.

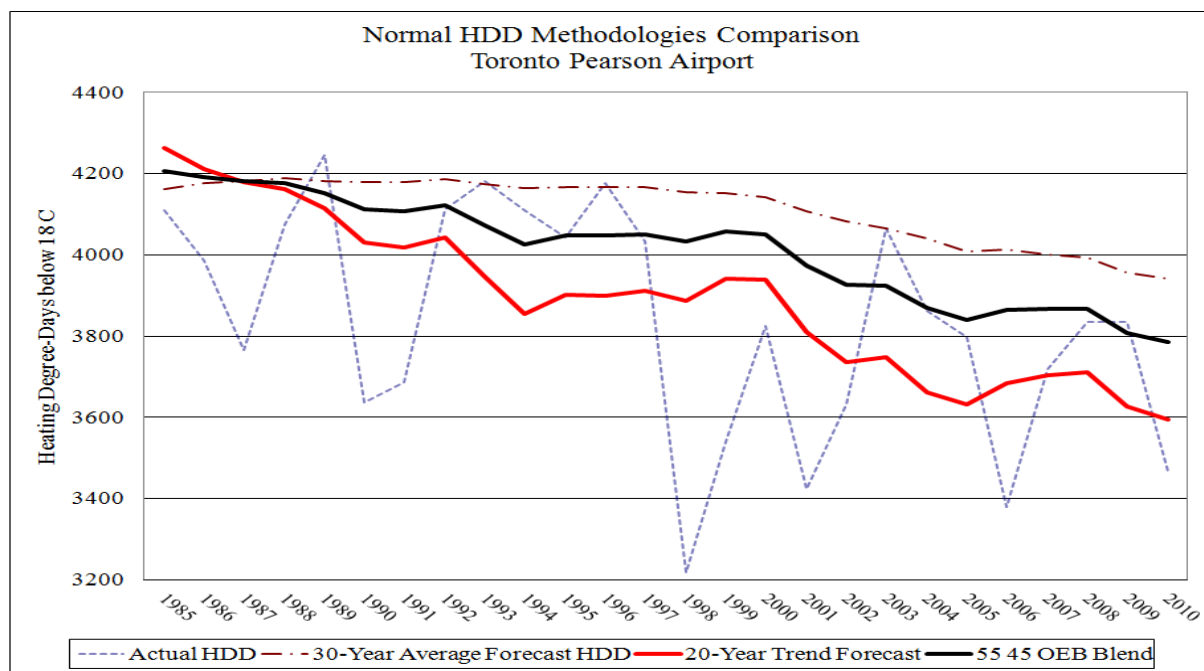


revenue forecast estimates in the general service market by about \$7 million when compared to the 20-year declining trend method.

The 20-year declining trend weather normal is a symmetric weather normal and does not possess a colder weather bias. Figure 1 below illustrates the greater symmetry of the 20-year declining trend method (solid red line) against current blended method (solid black line). The 20-year declining trend passes through the middle of the actual heating degree-days observations (dashed blue line) since 1985. In contrast, the blended method is significantly biased towards the top (colder weather) of the actual weather.

Figure 1

Comparison of Weather Normalization Methods



1    **3/ STATISTICAL ANALYSIS & CRITERIA**

2    Previous weather normal evidence submitted to the Board by both Union and Enbridge  
3    demonstrate there are several criteria that describe a good weather normal estimation method.

4  
5    The five criteria ranked in descending order of importance are:

6        1) Symmetry – balanced risk about the weather normal estimate (*Figure 1*)

7        2) Statistical Accuracy – historical metrics (*Table 1*)

8            a. Root Mean Square Error (“RMSE”)

9            b. Average Variance from Actual

10           c. Standard Deviation

11           d. Mean Percent Error

12        3) Simplicity – administrative & understanding

13        4) Sustainability – method is a repeatable process calculation

14        5) Stability – annual weather normal estimates not volatile over time

15  
16    The five criteria are discussed in more detail below:

17  
18        1) Symmetry - The method should result in an unbiased normal temperature condition

19            where there are equal expectations of positive variations and negative variations from  
20            actual HDDs. The smaller the mean percent error, the more symmetrical the method.

21            In the case of the Bias Frequency, the closer the ratio is to 1:1, the less biased (more  
22            symmetrical) the method.

- 1
- 2       2) Statistical Accuracy - The method should result in a point estimate that has a
- 3             minimum variance over time between the normal HDD and the actual HDD value.
- 4             Accuracy is an error measure that indicates over time the difference between the
- 5             estimator and actual weather. The most precise accuracy measurement tool is the
- 6             RMSE. For the RMSE, smaller test results mean greater accuracy.
- 7
- 8       3) Simplicity - The method and its results should be easily understood and administered.
- 9             Simplicity addresses the need for internal and external stakeholders to understand and
- 10            accept the approach that is being taken to calculate the weather normal. The greater
- 11            the reliance on simple arithmetic methods and limited steps between the input data
- 12            and the results, the easier it will be to understand the outcome.
- 13
- 14       4) Sustainability - The new method should stand the test of time and not require
- 15            significant amendments in the near future. Sustainability is a qualitative assessment of
- 16            the company being able to understand and maintain the tools underlying the method,
- 17            over an extended period. The greater the reliance on external participants in the
- 18            calculation of the methods the lower the assessment of its sustainability.
- 19
- 20       5) Stability - The new method should result in year over year normalized HDD estimate
- 21            that does not vary significantly. Stability is a measure of variation; the standard
- 22            deviation is used to measure variance. Increasing instability means that the fluctuation

from one year's forecast to the next is increasing over time. The increase in variation of the historical weather statistics is a direct contributing factor to increasing instability. For stability, a smaller standard deviation means that the method provides a more stable estimate because the difference between the forecast HDDs in two consecutive years is less significant.

Table 1  
Weather Normal Forecast Estimate vs. Actual Weather

<b>Weather normal forecast estimate versus actual annual level</b>			
25 Observations: estimates for 1985 to 2010 inclusive			
	<u><b>30 yr Avg.</b></u>	<u><b>20 Yr DT</b></u>	<u><b>55:45 Blend</b></u>
Root Mean Square Error: RMSE	375	<b>269</b>	306
Average Variance from Actual	276	<b>56</b>	177
Std Deviation of Variance	259	269	255
Mean Percent Error	-7.7%	<b>-1.9%</b>	-5.1%

The statistical metrics in bold font in the table above show that the 20-year declining trend method ("20 Yr DT") is the superior weather normalization method. This is indicated by three of the four statistical metrics that compare the 20-year declining trend method to the current blended weather normal method and the 30-year average method used by Union before 2004. The RMSE average variance from actual and the mean percent error are accuracy measurements. The standard deviation of the variance is a stability measurement. The 20-year declining trend is a simple and sustainable weather normalization method.

Union notes that Enbridge currently uses a Board-approved 20-year declining trend weather normal method to determining natural gas demand for the Greater Toronto Area.

**4/ CONCLUSION**

For the reasons set out above, the 20-year declining trend is the appropriate weather normalization method to use in its 2013 demand forecast. The 20-year declining trend method provides a more symmetrical and accurate method relative to the existing weather normalization method.

**PREFILED EVIDENCE**

**PATTI PIETT, DIRECTOR, STORAGE & TRANSPORTATION SALES**

**CAROL CAMERON, MANAGER, CAPACITY MANAGEMENT AND UTILIZATION**

Non-Utility Balances for 2011

The Board, on page 16 of its EB-2011-0038 Decision, directed Union to monitor the inventory related to non-utility storage operations.

*“The Board is of the view that there should be an ongoing monitoring of this potential encroachment so as to inform the Board as to the need to revisit this issue at a future date. The Board therefore finds that Union shall be required to monitor for and maintain records of all future encroachments and provide such information in its rebasing application.”*

Appendix A shows the non-utility balances for October and November of 2011. As discussed in EB-2011-0038, October and November are the two critical months for peak storage.

During the 2011 injection season the non-utility storage balance exceeded the entitlement by approximately 2%. The non-utility balance on October 16, 2011 was 79.9 PJ compared to an entitlement of 78.3 PJ. The non-utility balance exceeded the non-utility entitlement starting on October 9, 2011 and ending on October 20, 2011, a total of 12 days.

Two events contributed to the amount and the duration of the non-utility storage balance exceeding entitlement. The first contributing event was warm weather over the period of October

1 8, 2011 through October 14, 2011. Over that time period Union experienced weather conditions  
2 that were 65% warmer than normal. The warm weather resulted in lower consumption across the  
3 continental Northeast. Lower consumption by customers resulted in Union's non-utility customers  
4 (i.e. other utilities) injecting more gas than was forecast and caused the non-utility balance to  
5 exceed the entitlement.

6  
7 Secondly, the non-utility storage balance exceeding entitlement coincided with the Canadian  
8 Thanksgiving weekend. During the Canadian Thanksgiving weekend, Union operates with a  
9 reduced staff making it difficult to react to the non-utility storage balance. In addition, it is  
10 difficult to complete a mitigating transaction(s) to reduce the non-utility storage position as third  
11 parties who are typically involved in these transactions are also operating with reduced staff, if at  
12 all.

13  
14 The first opportunity to react to the non-utility storage balance was October 11, 2011 for the  
15 October 12, 2011 gas day when Union began its mitigation actions. Without knowing the duration  
16 or possible future impacts of non-utility activities, Union moved more than 2 PJ of non-utility gas  
17 off the system in order to reduce non-utility balances. Union moved the non-utility gas off the  
18 system despite the fact that there was excess utility space available. The total mitigation costs to  
19 Union's non-utility business were approximately \$1.1 million. The amount of the mitigation  
20 brought the non-utility balance to a sustainable level within the entitlement during the peak period.  
21 The full quantity of gas was removed from the system by October 20, 2011.

1 During the period that non-utility storage balances exceeded entitlement, Union met all contractual  
2 obligations as well as requests for discretionary storage services without interruption to any utility  
3 or non-utility storage activity.

4  
5 As discussed during the 2010 Deferral Proceeding, EB-2011-0038, Union manages its storage  
6 balance to the October 31 gas day. At October 31, 2011 the Non utility balance was 95% of  
7 entitlement and stayed below the total non-utility entitlement throughout November of 2011.

8  
9 Union will update the attached Exhibit C1, Tab 6, Appendix A and file it annually.



UNION GAS LIMITED  
Non-utility Storage Balance  
October and November, 2011

Calendar Day	October			November		
	<u>Entitlement (PJ)</u>	<u>Balance (PJ)</u>	<u>Percent</u>	<u>Entitlement (PJ)</u>	<u>Balance (PJ)</u>	<u>Percent</u>
1	78.3	76.1	97%	78.3	74.3	95%
2	78.3	76.3	97%	78.3	74.6	95%
3	78.3	76.4	98%	78.3	74.6	95%
4	78.3	76.6	98%	78.3	74.5	95%
5	78.3	76.7	98%	78.3	74.5	95%
6	78.3	76.6	98%	78.3	74.9	96%
7	78.3	77.0	98%	78.3	75.2	96%
8	78.3	77.8	99%	78.3	75.2	96%
9	78.3	78.7	100%	78.3	75.4	96%
10	78.3	79.4	101%	78.3	75.5	96%
11	78.3	79.5	102%	78.3	75.5	96%
12	78.3	79.6	102%	78.3	75.9	97%
13	78.3	79.5	102%	78.3	76.4	98%
14	78.3	79.6	102%	78.3	76.8	98%
15	78.3	79.8	102%	78.3	76.8	98%
16	78.3	79.9	102%	78.3	76.7	98%
17	78.3	79.7	102%	78.3	76.2	97%
18	78.3	79.4	101%	78.3	76.2	97%
19	78.3	79.2	101%	78.3	76.5	98%
20	78.3	78.0	100%	78.3	76.5	98%
21	78.3	77.7	99%	78.3	76.1	97%
22	78.3	77.7	99%	78.3	75.7	97%
23	78.3	77.5	99%	78.3	75.5	96%
24	78.3	77.3	99%	78.3	75.4	96%
25	78.3	77.2	99%	78.3	75.7	97%
26	78.3	76.8	98%	78.3	76.0	97%
27	78.3	76.0	97%	78.3	76.2	97%
28	78.3	75.5	96%	78.3	76.2	97%
29	78.3	75.1	96%	78.3	76.1	97%
30	78.3	74.8	95%	78.3	75.9	97%
31	78.3	74.5	95%			

**PREFILED EVIDENCE**

**PATTI PIETT, DIRECTOR, STORAGE AND TRANSPORTATION SALES**

**CAROL CAMERON, MANAGER, CAPACITY MANAGEMENT AND UTILIZATION**

The purpose of this evidence is to address Union's proposed method for altering short-term storage margin between its utility and non-utility storage operations.

Sale of Non-Utility Storage Space

Following the NGEIR Decision (EB-2005-0551) Union's practice has been to sell its non-utility storage space on a long-term basis and to sell the excess utility space on a short-term basis.

Despite this practice, Union is authorized by the Board to sell non-utility storage space under short-term contracts and retain 100% of the revenues. As the Board held at p. 101 of the NGEIR Decision (EB-2005-0551):

*"The Board finds that the entire margin on storage transactions that are underpinned by "utility asset" storage space, less an appropriate incentive payment to the utilities, should accrue to ratepayers. Ratepayers bear the cost of that space through the regulated storage rates and should benefit from transactions that utilize temporarily surplus space. The Board finds that shareholders will retain all of the margin on short-term transactions arising from the "non-utility" storage space." [Emphasis added]*

Consistent with NGIER, if Union sells short-term peak storage services using non-utility storage space, Union proposes that total margins received from the sale of all peak short-term storage be allocated to ratepayers and shareholders based on the utility and non-utility share of the total quantity of peak short-term storage (less than 2 years) sold each calendar year.

1 For example, if the excess utility storage space is determined to be 10 PJ effective for 2012 (as  
2 determined by Union's ISP plan) and Union sells a total of 13 PJ of peak short-term storage, then  
3 the allocation of margins would be 10/13 to the utility ratepayers and 3/13 to the shareholder. This  
4 methodology is transparent to all participants and will yield the same proportionate return on all  
5 short-term transactions for the ratepayers and the shareholders.

6  
7 Due to the seasonal volatility and variability of market-priced storage Union cannot predict what  
8 period of time will yield the highest or lowest prices for short-term peak storage services. The use  
9 of a proportionate share of calendar year margins ensures that neither party is impacted by the  
10 timing of storage sale, or fluctuations to storage values throughout the year. Both parties will be  
11 treated equitably in this proposal.

12  
13 Union is able to give effect to its proposal due to its ability to track what storage assets are being  
14 used for each type of storage transaction. At p. 5 of the Board's recent Decision on Rate Order in  
15 EB-2011-0038, the Board indicated that:

16 *"... the Board's findings are informed by Union's ability to track what storage assets are*  
17 *being used for each type of storage transaction and state that the entire amount of utility*  
18 *storage above in-franchise requirements is available for sale as short-term storage*  
19 *services (and all costs of this space is to be paid for by in-franchise customers)."*

1 Union's proposed change does not impact ratepayers. Going forward, Union will continue to sell  
2 all excess annual utility storage as short-term peak storage, and likewise 90% of all margins from  
3 C1 Off-Peak Storage, Gas Loans, Enbridge LBA, Supplemental Balancing Services, and C1 Firm  
4 Short-Term Deliverability will accrue to ratepayers. Union proposes to modify the Short-term  
5 Storage and Other Balancing Services accounting order to specify that the revenues are associated  
6 with the excess utility space. Please see the evidence at Exhibit H1 Tab 4.

UNION GAS LIMITED  
Total Weather Normal Throughput Volume by Service Type and Rate Class  
Year Ended December 31

Line No.	Particulars (10 <sup>6</sup> m <sup>3</sup> )	Board- Approved	Actual					Forecast	Forecast	
		2007	2007	2008	2009	2010	2011	2012	2013	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
	<u>General Service<sup>(1)</sup></u>									
1	Rate M1 Firm			2,950	2,874	2,875	2,948	2,985	2,876	/u
2	Rate M2 Firm	3,963	4,100	1,104	1,085	1,067	1,142	988	957	/u
3	Rate 01 Firm	905	912	917	908	906	927	897	856	/u
4	Rate 10 Firm	381	373	357	350	338	347	327	316	/u
5	Total General Service	5,249	5,385	5,327	5,217	5,186	5,364	5,196	5,005	/u
	<u>Wholesale - Utility<sup>(2)</sup></u>									
6	Rate M9 Firm	25	20	31	55	61	60	60	61	/u
7	Rate M10 Firm	0	0	0	0	0	0	0	0	
8	Rate 77 Firm	-	-	-	-	-	-	-	-	
9	Total Wholesale - Utility	25	20	31	55	61	60	60	61	/u
	<u>Contract<sup>(2)</sup></u>									
10	Rate M4	453	519	521	445	438	442	421	385	/u
11	Rate M7	278	585	553	444	313	258	149	147	/u
12	Rate 20 Storage	-	-	-	-	-	-	-	-	
13	Rate 20 Transportation	526	452	481	557	546	645	587	628	/u
14	Rate 100 Storage	-	-	-	-	-	-	-	-	
15	Rate 100 Transportation	2,275	2,015	1,965	1,807	1,882	1,892	1,909	1,895	/u
16	Rate T-1 Storage	-	-	-	-	-	-	-	-	
17	Rate T-1 Transportation	4,890	3,825	3,759	3,310	4,103	4,607	5,373	5,165	/u
18	Rate T-3 Storage	-	-	-	-	-	-	-	-	
19	Rate T-3 Transportation	321	276	274	264	254	264	270	273	/u
20	Rate M5	405	504	498	475	528	511	520	532	/u
21	Rate 25	105	422	307	202	220	158	133	129	/u
22	Rate 30	-	-	-	-	-	-	-	-	
23	Total Contract	9,252	8,599	8,358	7,504	8,284	8,777	9,361	9,155	/u
24	Total	14,526	14,005	13,717	12,776	13,531	14,201	14,617	14,221	/u

Note:

- (1) The impact of weather normalization for rates M1, M2, 01, and 10 is calculated based on the weather normalization methodology in place for each respective year.
- (2) Union's contract and wholesale classes are not weather normalized.

UNION GAS LIMITED  
Total Customers by Service Type and Rate Class  
Year Ended December 31

Line No.	Particulars	Board Approved	Actual					Forecast	Forecast	
		2007	2007	2008	2009	2010	2011	2012	2013	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
	<u>General Service</u>									
1	Rate M1 Firm	-	-	999,490	1,011,147	1,025,698	1,037,146	1,052,271	1,067,757	/u
2	Rate M2 Firm	997,164	989,531	5,990	6,566	6,607	6,637	6,721	6,778	/u
3	Rate 01 Firm	298,230	296,979	301,020	304,583	308,846	313,633	317,756	322,497	/u
4	Rate 10 Firm	2,973	2,326	2,405	2,247	2,154	2,160	2,047	2,054	/u
5	Total General Service	<u>1,298,367</u>	<u>1,288,836</u>	<u>1,308,905</u>	<u>1,324,543</u>	<u>1,343,305</u>	<u>1,359,576</u>	<u>1,378,795</u>	<u>1,399,086</u>	/u
	<u>Wholesale - Utility</u>									
6	Rate M9 Firm	2	2	2	2	2	2	3	3	/u
7	Rate M10 Firm	4	2	2	2	2	2	2	2	
8	Rate 77 Firm	1	1	-	-	-	-	-	-	
9	Total Wholesale - Utility	<u>7</u>	<u>5</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>5</u>	<u>5</u>	/u
	<u>Contract</u>									
10	Rate M4	194	157	155	145	130	132	122	115	/u
11	Rate M7	8	9	9	6	6	5	4	4	/u
12	Rate 20 Storage	-	-	-	-	-	-	-	-	
13	Rate 20 Transportation	65	57	57	52	51	49	61	63	/u
14	Rate 100 Storage	-	-	-	-	-	-	-	-	
15	Rate 100 Transportation	19	16	20	16	16	14	18	17	/u
16	Rate T-1 Storage	-	-	-	-	-	-	-	-	
17	Rate T-1 Transportation	68	53	53	53	53	56	64	64	/u
18	Rate T-3 Storage	-	-	-	-	-	-	-	-	
19	Rate T-3 Transportation	1	1	1	1	1	1	1	1	
20	Rate M5	133	128	125	124	130	124	143	144	/u
21	Rate 25	123	96	101	98	99	94	91	92	/u
22	Rate 30	-	1	-	1	-	1	-	-	/u
23	Total Contract	<u>611</u>	<u>518</u>	<u>521</u>	<u>496</u>	<u>486</u>	<u>476</u>	<u>504</u>	<u>500</u>	/u
24	Total	<u>1,298,985</u>	<u>1,289,359</u>	<u>1,309,430</u>	<u>1,325,043</u>	<u>1,343,795</u>	<u>1,360,056</u>	<u>1,379,304</u>	<u>1,399,591</u>	/u

UNION GAS LIMITED  
Total Weather Normalized Gas Sales Revenue by Service Type and Rate Class  
Year Ended December 31

Line No.	Particulars (\$ millions)	Board- Approved	Actual					Forecast	Forecast	
		2007	2007	2008	2009	2010	2011	2012	2013	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
	<u>General Service <sup>(1)</sup></u>									
1	Rate M1 Firm	-	-	1,041	952	840	812	813	795	/u
2	Rate M2 Firm	1,216	1,180	193	163	145	145	118	114	/u
3	Rate 01 Firm	343	345	365	348	312	319	305	295	/u
4	Rate 10 Firm	83	81	78	75	62	69	63	61	/u
5	Total General Service	1,642	1,606	1,678	1,538	1,360	1,345	1,299	1,265	/u
	<u>Wholesale - Utility <sup>(2)</sup></u>									
6	Rate M9 Firm	1	1	1	1	1	1	1	1	
7	Rate M10 Firm	0	0	0	0	0	0	0	0	
8	Rate 77 Firm	0	0	0	-	-	-	-	-	
9	Total Wholesale - Utility	1	1	1	1	1	1	1	1	
	<u>Contract <sup>(2)</sup></u>									
10	Rate M4	22	21	23	20	16	15	15	14	
11	Rate M7	7	11	10	9	6	6	4	4	
12	Rate 20 Storage	0	0	0	1	1	2	1	1	/u
13	Rate 20 Transportation	21	20	24	20	20	20	19	19	/u
14	Rate 100 Storage	2	2	2	1	1	0	0	0	
15	Rate 100 Transportation	16	15	15	13	13	13	13	13	/u
16	Rate T-1 Storage	8	11	10	10	10	10	7	7	/u
17	Rate T-1 Transportation	47	42	45	46	50	52	52	51	
18	Rate T-3 Storage	2	2	2	1	1	1	1	1	
19	Rate T-3 Transportation	4	4	4	4	4	3	3	3	/u
20	Rate M5	8	10	10	9	14	12	11	12	
21	Rate 25	17	75	40	22	15	11	11	11	/u
22	Rate 30	-	0	0	0	0	0	-	-	
23	Total Contract	154	213	184	157	149	146	137	136	/u
24	Total	1,797	1,819	1,862	1,696	1,510	1,491	1,437	1,402	/u

Note:

- (1) The impact of weather normalization for rates M1, M2, 01, and 10 is calculated based on the weather normalization methodology in place for each respective year.
- (2) Union's contract and wholesale classes are not weather normalized.

UNION GAS LIMITED  
Delivery Revenue by Rate Class and Service Class  
Board-Approved 2007 - 2013

Line No.	Particulars (\$ millions)	Board-Approved	Actual					Forecast	Forecast	
		2007	2007	2008	2009	2010	2011	2012	2013	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
	<u>General Service</u>									
1	Rate M1 Firm	-	-	368	369	367	373	380	379	/u
2	Rate M2 Firm	410	406	54	53	51	53	46	45	/u
3	Rate 01 Firm	133	132	136	137	133	139	140	138	/u
4	Rate 10 Firm	22	21	17	18	15	18	17	17	/u
5	Total General Service	<u>565</u>	<u>559</u>	<u>575</u>	<u>576</u>	<u>565</u>	<u>582</u>	<u>584</u>	<u>578</u>	/u
	<u>Wholesale - Utility</u>									
6	Rate M9 Firm	1	1	1	1	1	1	1	1	
7	Rate M10 Firm	0	0	0	0	0	0	0	0	
8	Rate 77 Firm	0	0	0	-	-	-	-	-	
9	Total Wholesale - Utility	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	
	<u>Contract</u>									
10	Rate M4	14	15	15	14	12	12	12	11	
11	Rate M7	7	11	10	9	6	6	4	4	
12	Rate 20 Storage	-	-	-	-	-	-	-	-	
13	Rate 20 Transportation	7	7	8	10	9	9	9	10	
14	Rate 100 Storage	-	-	-	-	-	-	-	-	
15	Rate 100 Transportation	16	15	15	13	13	13	13	13	/u
16	Rate T-1 Storage	8	11	10	10	10	9	7	7	/u
17	Rate T-1 Transportation	47	42	45	46	50	52	52	51	
18	Rate T-3 Storage	2	2	2	1	1	1	1	1	
19	Rate T-3 Transportation	4	4	4	4	4	3	3	3	/u
20	Rate M5	8	10	9	9	9	9	9	9	
21	Rate 25	2	10	7	4	4	3	2	2	
22	Rate 30	-	-	-	-	-	-	-	-	/u
23	Total Contract	<u>115</u>	<u>126</u>	<u>124</u>	<u>120</u>	<u>118</u>	<u>119</u>	<u>112</u>	<u>111</u>	/u
24	Sub-Total	<u>681</u>	<u>686</u>	<u>700</u>	<u>697</u>	<u>684</u>	<u>701</u>	<u>697</u>	<u>689</u>	/u
25	Rate 20 Storage	0	0	0	1	1	2	-	-	
26	Rate 100 Storage	2	2	2	1	1	0	-	-	/u
27	Rate 30 Storage	-	0	0	0	0	0	-	-	/u
28	Total <sup>(1)</sup>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>-</u>	<u>-</u>	
29	Total	<u>683</u>	<u>688</u>	<u>702</u>	<u>699</u>	<u>686</u>	<u>703</u>	<u>697</u>	<u>689</u>	/u

Note:

- (1) As of 2012, the North Storage component for Rate classes 20, 30, and 100 are part of the Gas Supply Revenue instead of Delivery Revenue. For comparative purposes, amounts for the Rate 20 Storage, Rate 100 Storage, and Rate 30 have been reported separately.



UNION GAS LIMITED  
Summary Revenue from Storage and Transportation of Gas  
Years Ending December 31

Line No.	Particulars (\$000's)		Board Approved	Actual		Forecast		
			2007 (a)	2010 (b)	2011 (c)	2012 (d)	2013 (e)	
<u>Transportation</u>								
1	M12 Transportation	(1)	120,667	142,421	138,273	133,972	121,109	/u
2	M12-X Transportation		-	-	1,477	5,942	13,499	/u
3	C1 Long-term Transportation		2,900	6,288	7,570	6,554	5,246	/u
4	C1 Short-term Transportation and Exchanges		4,000	32,554	44,228	32,186	20,186	/u
5	C1 Rebate Program		(2,178)	-	-	-	-	
6	M13 Transportation		864	386	323	366	367	/u
7	M16 Transportation		553	610	642	581	581	/u
8	Other S&T Revenue		895	1,072	1,092	1,067	1,067	/u
9	Total Transportation Revenue		127,701	183,331	193,605	180,668	162,055	/u
<u>Storage</u>								
10	Short-term Storage Services		13,887	14,886	9,036	6,590	8,988	/u
11	Off-Peak Storage/Balancing/Loan Services	(2)	4,075	6,001	1,928	2,500	2,500	/u
12	Total Storage Revenue		17,962	20,887	10,964	9,090	11,488	/u
13	Total S&T Revenue		145,663	204,218	204,569	189,758	173,543	/u

Note:

- (1) Includes M12 Transportation overrun.  
(2) Includes Enbridge LBA.

UNION GAS LIMITED  
Other Revenue  
Board-Approved 2007 - 2013

Line No.	Particulars (\$000's)	Board-	Actual					Forecast	Forecast	
		<u>Approved</u>								
		2007	2007	2008	2009	2010	2011	2012	2013	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
1	Delayed payment charges	7,231	7,424	7,876	8,680	5,833	6,770	6,403	6,467	/u
2	Account opening charges	5,858	7,332	6,851	6,894	6,579	6,586	7,000	7,000	/u
3	Billing revenue	9,041	9,677	9,059	8,479	7,369	6,013	6,509	6,387	/u
4	Mid market transactions	2,000	3,684	2,070	2,303	2,244	1,298	2,000	2,000	/u
5	Other operating revenue	<u>304</u>	<u>1,732</u>	<u>432</u>	<u>357</u>	<u>1,479</u>	<u>2,413</u>	<u>1,250</u>	<u>1,278</u>	/u
6	Total other revenue	<u>24,434</u>	<u>29,849</u>	<u>26,288</u>	<u>26,713</u>	<u>23,504</u>	<u>23,080</u>	<u>23,162</u>	<u>23,132</u>	/u

UNION GAS LIMITED  
Comparison of Operating Revenue  
2013 Test Year vs. 2012 Bridge Year

Line No.	Particulars (\$000's)	Forecast 2013 (a)	Forecast 2012 (b)	Difference (c)
1	Gas sales & T-Service	1,401,869	1,437,998	(36,129)
2	Transportation	162,055	180,668	(18,613)
3	Storage	11,488	9,090	2,398
4	Other revenue <sup>(1)</sup>	<u>23,132</u>	<u>23,162</u>	<u>(30)</u>
5	Total operating revenue	<u><u>1,598,544</u></u>	<u><u>1,650,918</u></u>	<u><u>(52,374)</u></u>

Notes:

(1) A summary of the other revenue variance:

		Forecast 2013	Forecast 2012	Difference
6	Delayed payment charges	6,467	6,403	64
7	Account opening charges	7,000	7,000	-
8	ABC-T charges	6,387	6,509	(122)
9	Mid market transactions	2,000	2,000	-
10	Other operating revenue	<u>1,278</u>	<u>1,250</u>	<u>28</u>
11	Total other revenue	<u><u>23,132</u></u>	<u><u>23,162</u></u>	<u><u>(30)</u></u>

UNION GAS LIMITED  
Summary of Gas Sales, Delivery and Transportation  
All Customer Rate Classes  
Year Ended December 31, 2013

Line No.	Particulars	Customers Year End <sup>(2)</sup> (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)	Average Delivery Unit Rate <sup>(1)</sup> (\$ /m <sup>3</sup> ) (e) = (d) / (b)
	<u>General Service</u>					
1	Rate M1 Firm	1,067,757	2,876,411	794,848	378,556	0.13161
2	Rate M2 Firm	6,778	956,651	113,825	44,991	0.04703
3	Rate 01 Firm	322,497	855,598	295,233	137,746	0.16099
4	Rate 10 Firm	2,054	316,269	60,947	16,637	0.05261
5	Total General Service	<u>1,399,086</u>	<u>5,004,929</u>	<u>1,264,853</u>	<u>577,931</u>	<u>0.39224</u>
6	% of Total (Line 27)	99.96%	35.19%	90.23%	83.82%	
	<u>Wholesale - Utility</u>					
7	Rate M9 Firm	3	60,750	819	819	0.01349
8	Rate M10 Firm	2	189	14	5	0.02525
9	Rate 77 Firm	-	-	-	-	-
10	Total Wholesale - Utility	<u>5</u>	<u>60,939</u>	<u>833</u>	<u>824</u>	<u>0.03873</u>
11	% of Total (Line 27)	0.00%	0.43%	0.06%	0.12%	
	<u>Contract</u>					
12	Rate M4	115	385,002	14,000	10,841	0.02816
13	Rate M7	4	147,143	3,951	3,951	0.02685
14	Rate 20 Storage	-	-	1,257	-	-
15	Rate 20 Transportation	63	628,164	19,206	9,721	0.01548
16	Rate 100 Storage	-	-	197	-	-
17	Rate 100 Transportation	17	1,895,488	12,658	12,658	0.00668
18	Rate T-1 Storage	-	-	6,797	6,797	-
19	Rate T-1 Transportation	64	5,164,982	50,986	50,986	0.00987
20	Rate T-3 Storage	-	-	1,231	1,231	-
21	Rate T-3 Transportation	1	272,712	3,340	3,340	0.01225
22	Rate M5	144	532,451	11,523	8,874	0.01667
23	Rate 25	92	129,481	11,036	2,337	0.01805
24	Rate 30	-	-	-	-	-
25	Total Contract	<u>500</u>	<u>9,155,423</u>	<u>136,183</u>	<u>110,737</u>	<u>0.13400</u>
26	% of Total (Line 27)	0.04%	64.38%	9.71%	16.06%	
27	Total	<u>1,399,591</u>	<u>14,221,290</u>	<u>1,401,869</u>	<u>689,491</u>	<u>0.04848</u>

Note:

- (1) The average unit rates are calculated using total delivery revenue including both fixed components (monthly charge, demand) and volumetric components.
- (2) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Summary of Gas Sales, Delivery and Transportation  
General Service Customers, Volume and Total Revenue by Service Class  
Year Ended December 31, 2013

Line No.	Particulars	Rate Class	Customers Year End (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)
	<u>General Service</u>					
1	Residential	M1	986,142	2,094,387	630,694	326,671
2	Residential	M2	35	3,603	1,533 <sup>(1)</sup>	1,252 <sup>(1)</sup>
3	Residential	01	294,708	629,860	232,833	116,086
4	Residential	10	-	-	-	-
5	Total General Service Residential		<u>1,280,885</u>	<u>2,727,851</u>	<u>865,059</u>	<u>444,009</u>
6	Share of Total General Service		91.55%	54.50%	68.39%	76.83%
7	Commercial	M1	77,608	723,345	152,307	48,539
8	Commercial	M2	5,425	607,343	65,050	29,017
9	Commercial	01	27,789	225,737	62,401	21,660
10	Commercial	10	1,888	227,264	44,079	13,018
11	Total General Service Commercial		<u>112,710</u>	<u>1,783,689</u>	<u>323,837</u>	<u>112,234</u>
12	Share of Total General Service		8.06%	35.64%	25.60%	19.42%
13	Industrial	M1	4,007	58,679	11,847	3,346
14	Industrial	M2	1,318	345,706	47,242	14,721
15	Industrial	01	-	-	-	-
16	Industrial	10	166	89,004	16,868	3,619
17	Total General Service Industrial		<u>5,491</u>	<u>493,389</u>	<u>75,957</u>	<u>21,687</u>
18	Share of Total General Service		0.39%	9.86%	6.01%	3.75%
19	Total for Rate Class	M1	1,067,757	2,876,411	794,848	378,556
20	Total for Rate Class	M2	6,778	956,651	113,825	44,991
21	Total for Rate Class	01	322,497	855,598	295,233	137,746
22	Total for Rate Class	10	2,054	316,269	60,947	16,637
23	Total General Service		<u>1,399,086</u>	<u>5,004,929</u>	<u>1,264,853</u>	<u>577,931</u>
24	Share of Total Market		100.00%	100.00%	100.00%	100.00%

Note:

(1) Residential M2 includes U2 Store.

UNION GAS LIMITED  
Total Customers by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2013

Line No.	Particulars	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
<u>General Service</u>							
1	Rate M1 Firm	837,301	157,165	72,389	902	-	1,067,757
2	Rate M2 Firm	3,172	2,594	241	771	-	6,778
3	Rate 01 Firm	241,854	80,300	-	343	-	322,497
4	Rate 10 Firm	920	845	-	289	-	2,054
5	Total General Service	<u>1,083,247</u>	<u>240,904</u>	<u>72,630</u>	<u>2,305</u>	<u>-</u>	<u>1,399,086</u>
<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	3	-	3
7	Rate M10 Firm	1	-	-	1	-	2
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>-</u>	<u>-</u>	<u>4</u>	<u>-</u>	<u>5</u>
<u>Contract</u>							
10	Rate M4	11	-	-	104	-	115
11	Rate M7	-	-	-	4	-	4
12	Rate 20 Storage	-	-	-	-	-	- (1)
13	Rate 20 Transportation	4	-	-	20	39	63
14	Rate 100 Storage	-	-	-	-	-	- (1)
15	Rate 100 Transportation	-	-	-	-	17	17
16	Rate T-1 Storage	-	-	-	-	-	- (1)
17	Rate T-1 Transportation	-	-	-	-	64	64
18	Rate T-3 Storage	-	-	-	-	-	- (1)
19	Rate T-3 Transportation	-	-	-	-	1	1
20	Rate M5	5	-	-	139	-	144
21	Rate 25	50	-	-	-	42	92
22	Rate 30	-	-	-	-	-	- (1)
23	Total Contract	<u>70</u>	<u>-</u>	<u>-</u>	<u>267</u>	<u>163</u>	<u>500</u>
24	Total Customers	<u>1,083,318</u>	<u>240,904</u>	<u>72,630</u>	<u>2,576</u>	<u>163</u>	<u>1,399,591</u>

Note:

- (1) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Total Throughput Volume by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2013

Line No.	Particulars (10 <sup>3</sup> m <sup>3</sup> )	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
<u>General Service</u>							
1	Rate M1 Firm	2,221,004	457,333	181,571	16,503	-	2,876,411
2	Rate M2 Firm	367,242	332,407	22,911	234,091	-	956,651
3	Rate 01 Firm	621,731	224,276	-	9,591	-	855,598
4	Rate 10 Firm	150,962	81,439	-	83,868	-	316,269
5	Total General Service	<u>3,360,939</u>	<u>1,095,456</u>	<u>204,481</u>	<u>344,053</u>	<u>-</u>	<u>5,004,929</u>
<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	60,750	-	60,750
7	Rate M10 Firm	48	-	-	141	-	189
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>48</u>	<u>-</u>	<u>-</u>	<u>60,891</u>	<u>-</u>	<u>60,939</u>
<u>Contract</u>							
10	Rate M4	16,855	-	-	368,147	-	385,002
11	Rate M7	-	-	-	147,143	-	147,143
12	Rate 20 Storage	-	-	-	-	-	-
13	Rate 20 Transportation	13,514	-	-	108,459	506,191	628,164
14	Rate 100 Storage	-	-	-	-	-	-
15	Rate 100 Transportation	-	-	-	-	1,895,488	1,895,488
16	Rate T-1 Storage	-	-	-	-	-	-
17	Rate T-1 Transportation	-	-	-	-	5,164,982	5,164,982
18	Rate T-3 Storage	-	-	-	-	-	-
19	Rate T-3 Transportation	-	-	-	-	272,712	272,712
20	Rate M5	14,152	-	-	518,299	-	532,451
21	Rate 25	42,913	-	-	-	86,568	129,481
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>87,433</u>	<u>-</u>	<u>-</u>	<u>1,142,048</u>	<u>7,925,942</u>	<u>9,155,423</u>
24	Total	<u>3,448,420</u>	<u>1,095,456</u>	<u>204,481</u>	<u>1,546,992</u>	<u>7,925,942</u>	<u>14,221,290</u>

UNION GAS LIMITED  
Total Gas Sales Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2013

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	712,573	57,727	23,640	907	-	794,848
2	Rate M2 Firm	86,201	15,574	2,034 <sup>(1)</sup>	10,016	-	113,825
3	Rate 01 Firm	240,366	53,364	-	1,503	-	295,233
4	Rate 10 Firm	40,362	10,537	-	10,049	-	60,947
5	Total General Service	<u>1,079,502</u>	<u>137,202</u>	<u>25,674</u>	<u>22,475</u>	<u>-</u>	<u>1,264,853</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	819	-	819
7	Rate M10 Firm	10	-	-	4	-	14
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>10</u>	<u>-</u>	<u>-</u>	<u>823</u>	<u>-</u>	<u>833</u>
	<u>Contract</u>						
10	Rate M4	3,645	-	-	10,355	-	14,000
11	Rate M7	-	-	-	3,951	-	3,951
12	Rate 20 Storage	-	-	-	-	1,257	1,257
13	Rate 20 Transportation	3,241	-	-	8,300	7,665	19,206
14	Rate 100 Storage	-	-	-	-	197	197
15	Rate 100 Transportation	-	-	-	-	12,658	12,658
16	Rate T-1 Storage	-	-	-	-	6,797	6,797
17	Rate T-1 Transportation	-	-	-	-	50,986	50,986
18	Rate T-3 Storage	-	-	-	-	1,231	1,231
19	Rate T-3 Transportation	-	-	-	-	3,340	3,340
20	Rate M5	2,904	-	-	8,619	-	11,523
21	Rate 25	9,568	-	-	-	1,468	11,036
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>19,358</u>	<u>-</u>	<u>-</u>	<u>31,225</u>	<u>85,600</u>	<u>136,183</u>
24	Total	<u>1,098,870</u>	<u>137,202</u>	<u>25,674</u>	<u>54,523</u>	<u>85,600</u>	<u>1,401,869</u>

Note:

(1) Includes U2 Store.



UNION GAS LIMITED  
Delivery Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2013

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	296,281	57,727	23,640	907	-	378,556
2	Rate M2 Firm	17,368	15,574	2,034 <sup>(1)</sup>	10,016	-	44,991
3	Rate 01 Firm	101,737	35,287	-	722	-	137,746
4	Rate 10 Firm	7,854	4,757	-	4,027	-	16,637
5	Total General Service	<u>423,240</u>	<u>113,344</u>	<u>25,674</u>	<u>15,673</u>	<u>-</u>	<u>577,931</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	819	-	819
7	Rate M10 Firm	1	-	-	4	-	5
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>-</u>	<u>-</u>	<u>823</u>	<u>-</u>	<u>824</u>
	<u>Contract</u>						
10	Rate M4	486	-	-	10,355	-	10,841
11	Rate M7	-	-	-	3,951	-	3,951
12	Rate 20 Storage	-	-	-	-	-	-
13	Rate 20 Transportation	315	-	-	1,742	7,665	9,721
14	Rate 100 Storage	-	-	-	-	-	-
15	Rate 100 Transportation	-	-	-	-	12,658	12,658
16	Rate T-1 Storage	-	-	-	-	6,797	6,797
17	Rate T-1 Transportation	-	-	-	-	50,986	50,986
18	Rate T-3 Storage	-	-	-	-	1,231	1,231
19	Rate T-3 Transportation	-	-	-	-	3,340	3,340
20	Rate M5	255	-	-	8,619	-	8,874
21	Rate 25	869	-	-	-	1,468	2,337
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>1,925</u>	<u>-</u>	<u>-</u>	<u>24,667</u>	<u>84,145</u>	<u>110,737</u>
24	Total	<u>425,165</u>	<u>113,344</u>	<u>25,674</u>	<u>41,162</u>	<u>84,145</u>	<u>689,491</u>

Note:

(1) Includes U2 Store.

UNION GAS LIMITED  
Other Revenue  
Calendar Year Ending December 31

Line No.	Particulars (\$000's)	Forecast 2013 (a)	Adjustments (b)	Total (c)
1	Late payment charges	6,467		6,467
2	Account opening charges	7,000		7,000
3	Billing Revenue	6,387		6,387
4	Mid market transactions	2,000		2,000
5	Other operating revenue	1,278		1,278
6	Total Other Revenue	23,132	-	23,132

UNION GAS LIMITED  
Revenue from Storage and Transportation of Gas  
2013 Test Year vs. 2012 Bridge Year

Line No.	Particulars (\$000's)	Forecast	Forecast	Difference
		2013	2012	
		(a)	(b)	
<u>Transportation</u>				
1	M12 Transportation	121,109	133,972	(12,863)
2	M12-X Transportation	13,499	5,942	7,557
3	C1 Long-term Transportation	5,246	6,554	(1,308)
4	C1 Short-term Transportation and Exchanges	20,186	32,186	(12,000)
5	C1 Rebate Program	-	-	-
6	M13 Transportation	367	366	1
7	M16 Transportation	581	581	-
8	Other S&T Revenue	<u>1,067</u>	<u>1,067</u>	<u>-</u>
9	Total Transportation Revenue	162,055	180,668	(18,613)
<u>Storage</u>				
10	Short-term Storage Services	8,988	6,590	2,398
11	Off-Peak Storage/Balancing/Loan Services	<u>2,500</u>	<u>2,500</u>	<u>-</u>
12	Total Storage Revenue	<u>11,488</u>	<u>9,090</u>	<u>2,398</u>
13	Total S&T Revenue	<u>173,543</u>	<u>189,758</u>	<u>(16,215)</u>

UNION GAS LIMITED  
Storage and Transportation Details  
As at November 1, 2013

Line No.	Description	Contracted Capacity at Nov 1	Unit	Revenue (\$000's)
<u>Transportation</u>				
1	M12 Transport	4,290,558	GJ/d	121,109 <sup>(1)</sup>
2	M12-X Transport	391,011	GJ/d	13,499 <sup>(2)</sup>
3		<u>4,681,569</u>		<u>134,608</u>
<u>Storage</u>				
4	Short Term Storage Services	12,977,143	GJ	8,988 <sup>(3)</sup>
5	Other Storage Services	-	GJ	2,500 <sup>(4)</sup>
6		<u>12,977,143</u>	GJ	<u>11,488</u>

Note:

- (1) See Exhibit C1, Summary Schedule 5, line 1.
- (2) See Exhibit C1, Summary Schedule 5, line 2.
- (3) See Exhibit C1, Summary Schedule 5, line 10.
- (4) See Exhibit C1, Summary Schedule 5, line 11.

UNION GAS LIMITED  
Peak Storage Availability and Utilization  
As of November 1, 2011 - 2015

Line No	Particulars (TJ)	<u>2011</u> (a)	<u>2012</u> (b)	<u>2013</u> ( c)	<u>2014</u> (d)	<u>2015</u> (e)
	<u>Storage Space Availability</u>					
	Company Owned Storage					
1	Base	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
2	Total	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
	<u>Storage Space Utilization</u>					
	In-Franchise:					
3	Union requirements	63,856	61,659	61,383	61,383	61,383
4	Contract Carriage & Unbundled	16,594	16,188	16,113	16,113	16,113
5	System Integrity	<u>9,527</u>	<u>9,527</u>	<u>9,527</u>	<u>9,527</u>	<u>9,527</u>
6	Total In-Franchise	89,977	87,373	87,023	87,023	87,023
	Ex-Franchise:					
7	Available for Short-term Contracts	<u>10,023</u>	<u>12,627</u>	<u>12,977</u>	<u>12,977</u>	<u>12,977</u>
8	Total Ex-Franchise	10,023	12,627	12,977	12,977	12,977
9	Total Utilization	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>

UNION GAS LIMITED  
Comparison of Operating Revenue  
2012 Bridge Year vs 2011 Actual Year

Line No.	Particulars (\$000's)	Forecast 2012 (a)	Actual 2011 (b)	Difference (c)	
1	Gas sales & T-Service	1,437,998	1,482,738	(44,740)	/u
2	Transportation	180,668	193,605	(12,937)	/u
3	Storage	9,090	10,964	(1,874)	/u
4	Other revenue <sup>(1)</sup>	<u>23,162</u>	<u>23,080</u>	<u>82</u>	/u
5	Total operating revenue	<u><u>1,650,918</u></u>	<u><u>1,710,387</u></u>	<u><u>(59,469)</u></u>	/u

Notes:

(1) A summary of the other revenue variance:

		Forecast 2012	Actual 2011	Difference	
6	Delayed payment charges	6,403	6,770	(367)	/u
7	Account opening charges	7,000	6,586	414	/u
8	ABC-T charges	6,509	6,013	496	/u
9	Mid market transactions	2,000	1,298	702	/u
10	Other operating revenue	<u>1,250</u>	<u>2,413</u>	<u>(1,163)</u>	/u
11	Total other revenue	<u><u>23,162</u></u>	<u><u>23,080</u></u>	<u><u>82</u></u>	/u

**UNION GAS LIMITED**  
Summary of Gas Sales, Delivery and Transportation  
All Customer Rate Classes  
Year Ended December 31, 2012

Line No.	Particulars	Customers Year End <sup>(2)</sup> (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)	Average Delivery Unit Rate <sup>(1)</sup> (\$ /m <sup>3</sup> ) (e) = (d) / (b)
	<u>General Service</u>					
1	Rate M1 Firm	1,052,271	2,985,013	812,642	380,294	0.12740
2	Rate M2 Firm	6,721	987,527	118,236	46,496	0.04708
3	Rate 01 Firm	317,756	897,159	305,153	139,898	0.15593
4	Rate 10 Firm	2,047	326,514	63,167	17,244	0.05281
5	Total General Service	<u>1,378,795</u>	<u>5,196,213</u>	<u>1,299,197</u>	<u>583,933</u>	<u>0.38323</u>
6	% of Total (line 27)	99.96%	35.55%	90.40%	83.82%	
	<u>Wholesale - Utility</u>					
7	Rate M9 Firm	3	60,207	818	818	0.01359
8	Rate M10 Firm	2	189	14	5	0.02525
9	Rate 77 Firm	-	-	-	-	-
10	Total Wholesale - Utility	<u>5</u>	<u>60,396</u>	<u>832</u>	<u>823</u>	<u>0.03883</u>
11	% of Total (line 27)	0.00%	0.41%	0.06%	0.12%	
	<u>Contract</u>					
12	Rate M4	122	420,878	14,796	11,637	0.02765
13	Rate M7	4	148,688	3,980	3,980	0.02677
14	Rate 20 Storage	-	-	1,257	-	-
15	Rate 20 Transportation	61	587,105	18,525	9,285	0.01581
16	Rate 100 Storage	-	-	197	-	-
17	Rate 100 Transportation	18	1,908,885	12,862	12,862	0.00674
18	Rate T-1 Storage	-	-	6,984	6,984	-
19	Rate T-1 Transportation	64	5,372,580	51,539	51,539	0.00959
20	Rate T-3 Storage	-	-	1,240	1,240	-
21	Rate T-3 Transportation	1	269,820	3,334	3,334	0.01236
22	Rate M5	143	520,234	11,291	8,642	0.01661
23	Rate 25	91	132,590	11,165	2,405	0.01814
24	Rate 30	-	-	-	-	-
25	Total Contract	<u>504</u>	<u>9,360,781</u>	<u>137,172</u>	<u>111,909</u>	<u>0.13367</u>
26	% of Total (line 27)	0.04%	64%	10%	16%	
27	Total	<u><u>1,379,304</u></u>	<u><u>14,617,390</u></u>	<u><u>1,437,201</u></u>	<u><u>696,664</u></u>	<u><u>0.04766</u></u>

Note:

- (1) The average unit rates are calculated using total delivery revenue including both fixed components (monthly charge, demand) and volumetric components.
- (2) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Summary of Gas Sales, Delivery and Transportation  
General Service Customers, Volume and Total Revenue by Service Class  
Year Ended December 31, 2012

Line No.	Particulars	Rate Class	Customers Year End	Total Volume (10 <sup>3</sup> m <sup>3</sup> )	Total Gas Sales Revenue (\$000's)	Total Delivery Revenue (\$000's)
			(a)	(b)	(c)	(d)
	<u>General Service</u>					
1	Residential	M1	971,150	2,176,574	643,152	327,199
2	Residential	M2	35	3,797	1,556	1,260 <sup>(1)</sup>
3	Residential	01	290,171	663,905	240,720	117,663
4	Residential	10	-	-	-	-
5	Total General Service Residential		<u>1,261,356</u>	<u>2,844,276</u>	<u>885,428</u>	<u>446,122</u>
6	Share of Total General Service		91.48%	54.74%	68.15%	76.40%
7	Commercial	M1	77,109	747,701	157,230	49,634
8	Commercial	M2	5,378	629,243	68,221	30,125
9	Commercial	01	27,585	233,255	64,433	22,235
10	Commercial	10	1,886	234,677	45,763	13,500
11	Total General Service Commercial		<u>111,958</u>	<u>1,844,875</u>	<u>335,647</u>	<u>115,494</u>
12	Share of Total General Service		8.12%	35.50%	25.83%	19.78%
13	Industrial	M1	4,012	60,738	12,260	3,461
14	Industrial	M2	1,308	354,487	48,459	15,111
15		01	-	-	-	-
16	Industrial	10	161	91,837	17,404	3,744
17	Total General Service Industrial		<u>5,481</u>	<u>507,062</u>	<u>78,123</u>	<u>22,316</u>
18	Share of Total General Service		0.40%	9.76%	6.01%	3.82%
19	Total for Rate Class	M1	1,052,271	2,985,013	812,642	380,294
20	Total for Rate Class	M2	6,721	987,527	118,236	46,496
21	Total for Rate Class	01	317,756	897,159	305,153	139,898
22	Total for Rate Class	10	2,047	326,514	63,167	17,244
23	Total General Service		<u>1,378,795</u>	<u>5,196,213</u>	<u>1,299,197</u>	<u>583,933</u>
24	Share of Total Market		100.00%	100.00%	100.00%	100.00%
25	Average Use				797	797

Note:

(1) Residential M2 includes U2 Store.



UNION GAS LIMITED  
Total Customers by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2012

Line No.	Particulars	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	821,815	157,165	72,389	902	-	1,052,271
2	Rate M2 Firm	3,115	2,594	241	771	-	6,721
3	Rate 01 Firm	237,113	80,300	-	343	-	317,756
4	Rate 10 Firm	913	845	-	289	-	2,047
5	Total General Service	<u>1,062,956</u>	<u>240,904</u>	<u>72,630</u>	<u>2,305</u>	<u>-</u>	<u>1,378,795</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	3	-	3
7	Rate M10 Firm	1	-	-	1	-	2
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>-</u>	<u>-</u>	<u>4</u>	<u>-</u>	<u>5</u>
	<u>Contract</u>						
10	Rate M4	11	-	-	111	-	122
11	Rate M7	-	-	-	4	-	4
12	Rate 20 Storage	-	-	-	-	-	- (1)
13	Rate 20 Transportation	4	-	-	19	38	61
14	Rate 100 Storage	-	-	-	-	-	- (1)
15	Rate 100 Transportation	-	-	-	-	18	18
16	Rate T-1 Storage	-	-	-	-	-	- (1)
17	Rate T-1 Transportation	-	-	-	-	64	64
18	Rate T-3 Storage	-	-	-	-	-	- (1)
19	Rate T-3 Transportation	-	-	-	-	1	1
20	Rate M5	5	-	-	138	-	143
21	Rate 25	50	-	-	-	41	91
22	Rate 30	-	-	-	-	-	- (1)
23	Total Contract	<u>70</u>	<u>-</u>	<u>-</u>	<u>272</u>	<u>162</u>	<u>504</u>
24	Total Customers	<u>1,063,027</u>	<u>240,904</u>	<u>72,630</u>	<u>2,581</u>	<u>162</u>	<u>1,379,304</u>

Note:

- (1) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Total Throughput Volume by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2012

Line No.	Particulars	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	2,306,664	473,077	188,351	16,920	-	2,985,013
2	Rate M2 Firm	382,744	341,142	23,509	240,132	-	987,527
3	Rate 01 Firm	652,763	234,575	-	9,821	-	897,159
4	Rate 10 Firm	157,199	83,282	-	86,033	-	326,514
5	Total General Service	<u>3,499,370</u>	<u>1,132,076</u>	<u>211,861</u>	<u>352,906</u>	<u>-</u>	<u>5,196,213</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	60,207	-	60,207
7	Rate M10 Firm	48	-	-	141	-	189
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>48</u>	<u>-</u>	<u>-</u>	<u>60,348</u>	<u>-</u>	<u>60,396</u>
	<u>Contract</u>						
10	Rate M4	16,855	-	-	404,023	-	420,878
11	Rate M7	-	-	-	148,688	-	148,688
12	Rate 20 Storage	-	-	-	-	-	-
13	Rate 20 Transportation	13,514	-	-	103,525	470,067	587,105
14	Rate 100 Storage	-	-	-	-	-	-
15	Rate 100 Transportation	-	-	-	-	1,908,885	1,908,885
16	Rate T-1 Storage	-	-	-	-	-	-
17	Rate T-1 Transportation	-	-	-	-	5,372,580	5,372,580
18	Rate T-3 Storage	-	-	-	-	-	-
19	Rate T-3 Transportation	-	-	-	-	269,820	269,820
20	Rate M5	14,152	-	-	506,082	-	520,234
21	Rate 25	43,249	-	-	-	89,341	132,590
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>87,770</u>	<u>-</u>	<u>-</u>	<u>1,162,319</u>	<u>8,110,693</u>	<u>9,360,781</u>
24	Total	<u>3,587,187</u>	<u>1,132,076</u>	<u>211,861</u>	<u>1,575,573</u>	<u>8,110,693</u>	<u>14,617,390</u>

UNION GAS LIMITED  
Total Gas Sales Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2012

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	729,308	58,500	23,907	928	-	812,642
2	Rate M2 Firm	89,805	16,035	2,061 <sup>(1)</sup>	10,334	-	118,236
3	Rate 01 Firm	248,609	55,004	-	1,540	-	305,153
4	Rate 10 Firm	42,052	10,786	-	10,330	-	63,167
5	Total General Service	<u>1,109,773</u>	<u>140,324</u>	<u>25,968</u>	<u>23,132</u>	<u>-</u>	<u>1,299,197</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	818	-	818
7	Rate M10 Firm	10	-	-	4	-	14
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>10</u>	<u>-</u>	<u>-</u>	<u>822</u>	<u>-</u>	<u>832</u>
	<u>Contract</u>						
10	Rate M4	3,648	-	-	11,149	-	14,796
11	Rate M7	-	-	-	3,980	-	3,980
12	Rate 20 Storage	-	-	-	-	1,257	1,257
13	Rate 20 Transportation	3,242	-	-	7,966	7,317	18,525
14	Rate 100 Storage	-	-	-	-	197	197
15	Rate 100 Transportation	-	-	-	-	12,862	12,862
16	Rate T-1 Storage	-	-	-	-	6,984	6,984
17	Rate T-1 Transportation	-	-	-	-	51,539	51,539
18	Rate T-3 Storage	-	-	-	-	1,240	1,240
19	Rate T-3 Transportation	-	-	-	-	3,334	3,334
20	Rate M5	2,905	-	-	8,386	-	11,291
21	Rate 25	9,641	-	-	-	1,524	11,165
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>19,435</u>	<u>-</u>	<u>-</u>	<u>31,482</u>	<u>86,255</u>	<u>137,172</u>
24	Total	<u>1,129,219</u>	<u>140,324</u>	<u>25,968</u>	<u>55,435</u>	<u>86,255</u>	<u>1,437,201</u>
25	Average Use						797
26	Total						<u>1,437,998</u>

Note:

(1) Includes U2 Store.

UNION GAS LIMITED  
Delivery Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2012

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	296,960	58,500	23,907	928	-	380,294
2	Rate M2 Firm	18,066	16,035	2,061 <sup>(1)</sup>	10,334	-	46,496
3	Rate 01 Firm	103,060	36,098	-	741	-	139,898
4	Rate 10 Firm	8,218	4,874	-	4,152	-	17,244
5	Total General Service	<u>426,303</u>	<u>115,507</u>	<u>25,968</u>	<u>16,155</u>	<u>-</u>	<u>583,933</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	818	-	818
7	Rate M10 Firm	1	-	-	4	-	5
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>-</u>	<u>-</u>	<u>822</u>	<u>-</u>	<u>823</u>
	<u>Contract</u>						
10	Rate M4	489	-	-	11,149	-	11,637
11	Rate M7	-	-	-	3,980	-	3,980
12	Rate 20 Storage	-	-	-	-	-	-
13	Rate 20 Transportation	315	-	-	1,653	7,317	9,285
14	Rate 100 Storage	-	-	-	-	-	-
15	Rate 100 Transportation	-	-	-	-	12,862	12,862
16	Rate T-1 Storage	-	-	-	-	6,984	6,984
17	Rate T-1 Transportation	-	-	-	-	51,539	51,539
18	Rate T-3 Storage	-	-	-	-	1,240	1,240
19	Rate T-3 Transportation	-	-	-	-	3,334	3,334
20	Rate M5	256	-	-	8,386	-	8,642
21	Rate 25	881	-	-	-	1,524	2,405
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>1,940</u>	<u>-</u>	<u>-</u>	<u>25,168</u>	<u>84,800</u>	<u>111,909</u>
24	Total	<u>428,245</u>	<u>115,507</u>	<u>25,968</u>	<u>42,145</u>	<u>84,800</u>	<u>696,664</u>
25	Average Use						797
26	Total						<u>697,461</u>

Note:

(1) Includes U2 Store.

UNION GAS LIMITED  
Other Revenue  
Calendar Year Ending December 31

Line No.	Particulars (\$000's)	Forecast 2012 (a)	Adjustments (b)	Total (c)
1	Late payment charges	6,403		6,403
2	Account opening charges	7,000		7,000
3	Billing Revenue	6,509		6,509
4	Mid market transactions	2,000		2,000
5	Other operating revenue	1,250		1,250
6	Total Other Revenue	23,162	-	23,162

UNION GAS LIMITEDRevenue from Storage and Transportation of Gas  
2012 Forecast vs. 2011 Actual

Line No.	Particulars (\$000's)	Forecast 2012 (a)	Actual 2011 (b)	Difference (c)	
<u>Transportation</u>					
1	M12 Transportation	133,972	138,273	(4,301)	/u
2	M12-X Transportation	5,942	1,477	4,465	/u
3	C1 Long-term Transportation	6,554	7,570	(1,016)	/u
4	C1 Short-term Transportation and Exchanges	32,186	44,228	(12,042)	/u
5	C1 Rebate Program	-	-	-	
6	M13 Transportation	366	323	43	/u
7	M16 Transportation	581	642	(61)	/u
8	Other S&T Revenue	<u>1,067</u>	<u>1,092</u>	<u>(25)</u>	/u
9	Total Transportation Revenue	180,668	193,605	(12,937)	/u
<u>Storage</u>					
10	Short-term Storage Services	6,590	9,036	(2,446)	/u
11	Off-Peak Storage/Balancing/Loan Services	<u>2,500</u>	<u>1,928</u>	<u>572</u>	/u
12	Total Storage Revenue	<u>9,090</u>	<u>10,964</u>	<u>(1,874)</u>	/u
13	Total S&T Revenue	<u><u>189,758</u></u>	<u><u>204,569</u></u>	<u><u>(14,811)</u></u>	/u

UNION GAS LIMITED  
Storage and Transportation Details  
As at November 1, 2012

Line No.	Description	Contracted Capacity at Nov 1	Unit	Revenue (\$000's)
<u>Transportation</u>				
1	M12 Transport	4,469,004	GJ/d	133,972 <sup>(1)</sup>
2	M12-X Transport	<u>391,011</u>	GJ/d	<u>5,942</u> <sup>(2)</sup>
3		<u><u>4,860,015</u></u>		<u><u>139,914</u></u>
<u>Storage</u>				
4	Short-term Storage Services	12,626,691	GJ	6,590 <sup>(3)</sup>
5	Other Storage Services	<u>-</u>	GJ	<u>2,500</u> <sup>(4)</sup>
6		<u><u>12,626,691</u></u>	GJ	<u><u>9,090</u></u>

Note:

- (1) See Exhibit C1, Summary Schedule 5, line 1.
- (2) See Exhibit C1, Summary Schedule 5, line 2.
- (3) See Exhibit C1, Summary Schedule 5, line 10.
- (4) See Exhibit C1, Summary Schedule 5, line 11.

UNION GAS LIMITED  
Comparison of Operating Revenue  
2011 Actual Year vs 2010 Actual Year

Line No.	Particulars (\$000's)	Actual 2011 (a)	Actual 2010 (b)	Difference (c)	
1	Gas sales & T-Service	1,482,738	1,497,451	(14,713)	/u
2	Transportation	193,605	183,331	10,274	/u
3	Storage	10,964	20,887	(9,923)	/u
4	Other revenue <sup>(1)</sup>	<u>23,080</u>	<u>23,504</u>	<u>(424)</u>	/u
5	Total operating revenue	<u><u>1,710,387</u></u>	<u><u>1,725,173</u></u>	<u><u>(14,786)</u></u>	/u

Notes:

(1) A summary of the other revenue variance:

		Actual 2011	Actual 2010	Difference	
6	Delayed payment charges	6,770	5,833	937	/u
7	Account opening charges	6,586	6,579	7	/u
8	ABC-T charges	6,013	7,369	(1,356)	/u
9	Mid market transactions	1,298	2,244	(946)	/u
10	Other operating revenue	<u>2,413</u>	<u>1,479</u>	<u>934</u>	/u
11	Total other revenue	<u><u>23,080</u></u>	<u><u>23,504</u></u>	<u><u>(424)</u></u>	/u



**UNION GAS LIMITED**  
Summary of Gas Sales, Delivery and Transportation  
All Customer Rate Classes  
Year Ended December 31, 2011

Line No.	Particulars	Customers Year End <sup>(2)</sup> (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)	Average Delivery Unit Rate <sup>(1)</sup> (\$ /m <sup>3</sup> ) (e) = (d) / (b)	
	<u>General Service</u>						
1	Rate M1 Firm	1,037,146	2,921,555	810,370	372,642	0.12755	/u
2	Rate M2 Firm	6,637	1,131,885	144,621	52,521	0.04640	/u
3	Rate 01 Firm	313,633	906,255	317,881	138,994	0.15337	/u
4	Rate 10 Firm	2,160	340,431	68,168	17,579	0.05164	/u
5	Total General Service	<u>1,359,576</u>	<u>5,300,126</u>	<u>1,341,039</u>	<u>581,735</u>	<u>0.37896</u>	/u
6	% of Total (line 27)	99.96%	37.49%	90%	83%		/u
	<u>Wholesale - Utility</u>						
7	Rate M9 Firm	2	60,129	833	833	0.01386	/u
8	Rate M10 Firm	2	192	12	5	0.02531	/u
9	Rate 77 Firm	-	-	-	-	-	/u
10	Total Wholesale - Utility	<u>4</u>	<u>60,321</u>	<u>846</u>	<u>838</u>	<u>0.03917</u>	/u
11	% of Total (line 27)	0.00%	0.43%	0.06%	0.12%		/u
	<u>Contract</u>						
12	Rate M4	132	442,183	15,446	12,041	0.02723	/u
13	Rate M7	5	257,671	5,890	5,890	0.02286	/u
14	Rate 20 Storage	-	-	1,701	1,701		/u
15	Rate 20 Transportation	49	644,805	20,050	9,457	0.01467	/u
16	Rate 100 Storage	-	-	186	186		/u
17	Rate 100 Transportation	14	1,892,180	12,823	12,823	0.00678	/u
18	Rate T-1 Storage	-	-	9,555	9,406		/u
19	Rate T-1 Transportation	56	4,607,226	52,202	52,202	0.01133	/u
20	Rate T-3 Storage	-	-	1,310	1,310		/u
21	Rate T-3 Transportation	1	264,032	3,397	3,397	0.01286	/u
22	Rate M5	124	510,800	12,012	8,898	0.01742	/u
23	Rate 25	94	157,783	11,294	3,277	0.02077	/u
24	Rate 30	1	-	63	63	-	/u
25	Total Contract	<u>476</u>	<u>8,776,679</u>	<u>145,928</u>	<u>120,650</u>	<u>0.13392</u>	/u
26	% of Total (line 27)	0.03%	62.08%	9.81%	17.16%		/u
27	Total	<u>1,360,056</u>	<u>14,137,126</u>	<u>1,487,813</u>	<u>703,223</u>	<u>0.04974</u>	/u
28	Average Use			(5,076)	(5,076)		/u
29	Total Inc Average Use			<u>1,482,737</u>	<u>698,147</u>		/u

## Note:

- (1) The average unit rates are calculated using total delivery revenue including both fixed components (monthly charge, demand) and volumetric components.
- (2) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Summary of Gas Sales, Delivery and Transportation  
General Service Customers, Volume and Total Revenue by Service Class  
Year Ended December 31, 2011

Line No.	Particulars	Rate Class	Customers Year End (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)	
	<u>General Service</u>						
1	Residential	M1	956,388	2,207,106	657,963	323,583	/u
2	Residential	M2	32	4,075	1,555 <sup>(1)</sup>	1,235 <sup>(1)</sup>	/u
3	Residential	01	286,420	664,638	248,140	116,431	/u
4	Residential	10	1	81	24	6	/u
5	Total General Service Residential		<u>1,242,841</u>	<u>2,875,900</u>	<u>907,682</u>	<u>441,255</u>	/u
6	Share of Total General Service		91.41%	54.26%	67.68%	75.85%	/u
7	Commercial	M1	76,751	656,216	140,097	45,713	/u
8	Commercial	M2	5,334	788,925	101,946	36,632	/u
9	Commercial	01	27,188	240,948	69,641	22,607	/u
10	Commercial	10	2,001	252,098	50,993	14,021	/u
11	Total General Service Commercial		<u>111,274</u>	<u>1,938,187</u>	<u>362,678</u>	<u>118,973</u>	/u
12	Share of Total General Service		8.18%	36.57%	27.04%	20.45%	/u
13	Industrial	M1	4,007	58,233	12,309	3,345	/u
14	Industrial	M2	1,271	338,885	41,120	14,653	/u
15	Industrial	01	25	669	100	(43)	/u
16	Industrial	10	158	88,252	17,151	3,552	/u
17	Total General Service Industrial		<u>5,461</u>	<u>486,039</u>	<u>70,679</u>	<u>21,507</u>	/u
18	Share of Total General Service		0.40%	9.17%	5.27%	3.70%	/u
19	Total for Rate Class	M1	1,037,146	2,921,555	810,369	372,641	/u
20	Total for Rate Class	M2	6,637	1,131,885	144,621	52,521	/u
21	Total for Rate Class	01	313,633	906,255	317,881	138,994	/u
22	Total for Rate Class	10	2,160	340,431	68,168	17,579	/u
23	Total General Service		<u>1,359,576</u>	<u>5,300,126</u>	<u>1,341,039</u>	<u>581,735</u>	/u
24	Share of Total Market		100.00%	100.00%	100.00%	100.00%	/u

Note:

(1) Residential M2 includes U2 Store.

UNION GAS LIMITED  
Total Customers by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2011

Line No.	Particulars	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)	
	<u>General Service</u>							
1	Rate M1 Firm	861,125	130,667	44,484	870	-	1,037,146	/u
2	Rate M2 Firm	3,346	2,339	174	778	-	6,637	/u
3	Rate 01 Firm	252,289	60,991	-	353	-	313,633	/u
4	Rate 10 Firm	1,220	661	-	275	4	2,160	/u
5	Total General Service	<u>1,117,980</u>	<u>194,658</u>	<u>44,658</u>	<u>2,276</u>	<u>4</u>	<u>1,359,576</u>	/u
	<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	2	-	2	/u
7	Rate M10 Firm	1	1	-	-	-	2	
8	Rate 77 Firm	-	-	-	-	-	-	
9	Total Wholesale - Utility	<u>1</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>4</u>	
	<u>Contract</u>							
10	Rate M4	11	2	-	119	-	132	/u
11	Rate M7	-	-	-	5	-	5	/u
12	Rate 20 Storage	-	-	-	-	-	-	(1)
13	Rate 20 Transportation	2	-	-	18	29	49	/u
14	Rate 100 Storage	-	-	-	-	-	-	(1)
15	Rate 100 Transportation	-	-	-	-	14	14	/u
16	Rate T-1 Storage	-	-	-	-	-	-	(1)
17	Rate T-1 Transportation	-	-	-	-	56	56	/u
18	Rate T-3 Storage	-	-	-	-	-	-	(1)
19	Rate T-3 Transportation	-	-	-	-	1	1	
20	Rate M5	4	1	-	119	-	124	/u
21	Rate 25	44	-	-	-	50	94	/u
22	Rate 30	-	-	-	-	1	1	/u
23	Total Contract	<u>61</u>	<u>3</u>	<u>-</u>	<u>261</u>	<u>151</u>	<u>476</u>	/u
24	Total	<u>1,118,042</u>	<u>194,662</u>	<u>44,658</u>	<u>2,539</u>	<u>155</u>	<u>1,360,056</u>	/u

Note:

(1) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Total Throughput Volume by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2011

Line No.	Particulars (10 <sup>3</sup> m <sup>3</sup> )	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)	
	<u>General Service</u>							
1	Rate M1 Firm	2,308,386	440,398	157,607	15,164	-	2,921,555	/u
2	Rate M2 Firm	484,725	350,835	28,801	267,525	-	1,131,885	/u
3	Rate 01 Firm	688,496	210,295	-	7,463	-	906,255	/u
4	Rate 10 Firm	158,487	86,923	-	93,386	1,635	340,431	/u
5	Total General Service	<u>3,640,094</u>	<u>1,088,452</u>	<u>186,408</u>	<u>383,537</u>	<u>1,635</u>	<u>5,300,126</u>	/u
	<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	60,129	-	60,129	/u
7	Rate M10 Firm	39	153	-	-	-	192	/u
8	Rate 77 Firm	-	-	-	-	-	-	
9	Total Wholesale - Utility	<u>39</u>	<u>153</u>	<u>-</u>	<u>60,129</u>	<u>-</u>	<u>60,321</u>	/u
	<u>Contract</u>							
10	Rate M4	17,744	4,174	-	420,265	-	442,183	/u
11	Rate M7	-	-	-	257,671	-	257,671	/u
12	Rate 20 Storage	-	-	-	-	-	-	
13	Rate 20 Transportation	13,034	-	-	98,449	533,322	644,805	/u
14	Rate 100 Storage	-	-	-	-	-	-	
15	Rate 100 Transportation	-	-	-	-	1,892,180	1,892,180	/u
16	Rate T-1 Storage	-	-	-	-	-	-	
17	Rate T-1 Transportation	-	-	-	-	4,607,226	4,607,226	/u
18	Rate T-3 Storage	-	-	-	-	-	-	
19	Rate T-3 Transportation	-	-	-	-	264,032	264,032	/u
20	Rate M5	16,360	1,437	-	493,002	-	510,800	/u
21	Rate 25	40,515	-	-	-	117,269	157,783	/u
22	Rate 30	-	-	-	-	-	-	
23	Total Contract	<u>87,653</u>	<u>5,611</u>	<u>-</u>	<u>1,269,387</u>	<u>7,414,028</u>	<u>8,776,679</u>	/u
24	Total	<u>3,727,786</u>	<u>1,094,216</u>	<u>186,408</u>	<u>1,713,053</u>	<u>7,415,663</u>	<u>14,137,126</u>	/u

UNION GAS LIMITED  
Total Gas Sales Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2011

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)	
	<u>General Service</u>							
1	Rate M1 Firm	736,330	53,542	19,650	847	-	810,370	/u
2	Rate M2 Firm	114,577	16,488	2,218	11,338	-	144,621	/u
3	Rate 01 Firm	265,773	50,868	-	1,240	-	317,881	/u
4	Rate 10 Firm	43,977	12,069	-	12,052	70	68,168	/u
5	Total General Service	<u>1,160,658</u>	<u>132,967</u>	<u>21,868</u>	<u>25,477</u>	<u>70</u>	<u>1,341,039</u>	/u
	<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	833	-	833	/u
7	Rate M10 Firm	8	4	-	-	-	12	/u
8	Rate 77 Firm	-	-	-	-	-	-	
9	Total Wholesale - Utility	<u>8</u>	<u>4</u>	<u>-</u>	<u>833</u>	<u>-</u>	<u>846</u>	/u
	<u>Contract</u>							
10	Rate M4	3,963	119	-	11,363	-	15,446	/u
11	Rate M7	-	-	-	5,890	-	5,890	/u
12	Rate 20 Storage	-	-	-	-	1,701	1,701	/u
13	Rate 20 Transportation	3,282	-	-	9,151	7,617	20,050	/u
14	Rate 100 Storage	-	-	-	-	186	186	/u
15	Rate 100 Transportation	-	-	-	-	12,823	12,823	/u
16	Rate T-1 Storage	-	-	-	-	9,555	9,555	/u
17	Rate T-1 Transportation	-	-	-	-	52,202	52,202	/u
18	Rate T-3 Storage	-	-	-	-	1,310	1,310	/u
19	Rate T-3 Transportation	-	-	-	-	3,397	3,397	/u
20	Rate M5	3,422	34	-	8,556	-	12,012	/u
21	Rate 25	8,711	-	-	-	2,583	11,294	/u
22	Rate 30	-	-	-	-	63	63	/u
23	Total Contract	<u>19,378</u>	<u>153</u>	<u>-</u>	<u>34,961</u>	<u>91,436</u>	<u>145,928</u>	/u
24	Total Gas Sales	<u>1,180,044</u>	<u>133,124</u>	<u>21,868</u>	<u>61,271</u>	<u>91,506</u>	<u>1,487,813</u>	/u
25	Average Use						<u>(5,076)</u>	/u
26	Total Inc Average Use						<u>1,482,737</u>	/u

Note:

(1) Includes U2 Store.

UNION GAS LIMITED  
Delivery Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2011

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)	
	<u>General Service</u>							
1	Rate M1 Firm	298,602	53,542	19,650	847	-	372,642	/u
2	Rate M2 Firm	22,477	16,488	2,218	11,338	-	52,521	/u
3	Rate 01 Firm	106,469	31,958	-	568	-	138,994	/u
4	Rate 10 Firm	8,359	5,003	-	4,147	70	17,579	/u
5	Total General Service	<u>435,907</u>	<u>106,991</u>	<u>21,868</u>	<u>16,899</u>	<u>70</u>	<u>581,735</u>	/u
	<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	833	-	833	/u
7	Rate M10 Firm	1	4	-	-	-	5	/u
8	Rate 77 Firm	-	-	-	-	-	-	
9	Total Wholesale - Utility	<u>1</u>	<u>4</u>	<u>-</u>	<u>833</u>	<u>-</u>	<u>838</u>	/u
	<u>Contract</u>							
10	Rate M4	558	119	-	11,363	-	12,041	/u
11	Rate M7	-	-	-	5,890	-	5,890	/u
12	Rate 20 Storage	-	-	-	-	1,701	1,701	/u
13	Rate 20 Transportation	291	-	-	1,548	7,617	9,457	/u
14	Rate 100 Storage	-	-	-	-	186	186	/u
15	Rate 100 Transportation	-	-	-	-	12,823	12,823	/u
16	Rate T-1 Storage	-	-	-	-	9,406	9,406	/u
17	Rate T-1 Transportation	-	-	-	-	52,202	52,202	/u
18	Rate T-3 Storage	-	-	-	-	1,310	1,310	/u
19	Rate T-3 Transportation	-	-	-	-	3,397	3,397	/u
20	Rate M5	308	34	-	8,556	-	8,898	/u
21	Rate 25	811	-	-	-	2,466	3,277	/u
22	Rate 30	-	-	-	-	63	63	/u
23	Total Contract	<u>1,969</u>	<u>153</u>	<u>-</u>	<u>27,358</u>	<u>91,170</u>	<u>120,650</u>	/u
24	Total	<u>437,877</u>	<u>107,148</u>	<u>21,868</u>	<u>45,091</u>	<u>91,240</u>	<u>703,223</u>	/u
25	Average Use						<u>(5,076)</u>	/u
26	Total Inc Average Use						<u>698,147</u>	/u

Note:

(1) Includes U2 Store.

Updated: 2012-03-27

EB-2011-0210

Exhibit C5

Tab 3

Schedule 1

UNION GAS LIMITED  
Other Revenue  
Calendar Year Ending December 31

Line No.	Particulars (\$000's)	Actual 2011 (a)	Adjustments (b)	Total (c)	
1	Delayed payment charges	6,770		6,770	/u
2	Account opening charges	6,586		6,586	/u
3	Billing revenue	6,013		6,013	/u
4	Mid market transactions	1,298		1,298	/u
5	Other operating revenue	2,413		2,413	/u
6	Total Other Revenue	23,080	-	23,080	/u

UNION GAS LIMITED  
Revenue from Storage and Transportation of Gas  
2011 Actual vs. 2010 Actual

Line No.	Particulars (\$000's)	Actual 2011 (a)	Actual 2010 (b)	Difference (c)	
<u>Transportation</u>					
1	M12 Transportation	138,273	142,421	(4,148)	/u
2	M12-X Transportation	1,477	-	1,477	/u
3	C1 Long-term Transportation	7,570	6,288	1,282	/u
4	C1 Short-term Transportation and Exchanges	44,228	32,554	11,674	/u
5	C1 Rebate Program	-	-	-	/u
6	M13 Transportation	323	386	(63)	/u
7	M16 Transportation	642	610	32	/u
8	Other S&T Revenue	<u>1,092</u>	<u>1,072</u>	<u>20</u>	/u
9	Total Transportation Revenue	193,605	183,331	10,274	/u
<u>Storage</u>					
10	Short-term Storage Services	9,036	14,886	(5,850)	/u
11	Off-Peak Storage/Balancing/Loan Services	<u>1,928</u>	<u>6,001</u>	<u>(4,073)</u>	/u
12	Total Storage Revenue	<u>10,964</u>	<u>20,887</u>	<u>(9,923)</u>	/u
13	Total S&T Revenue	<u><u>204,569</u></u>	<u><u>204,218</u></u>	<u><u>351</u></u>	/u



UNION GAS LIMITED  
Storage and Transportation Details  
As at November 1, 2011

<u>Line No.</u>	<u>Description</u>	<u>Contracted Capacity at Nov 1</u>	<u>Unit</u>	<u>Revenue (\$000's)</u>		
<u>Transportation</u>						
1	M12 Transport	4,884,799	GJ/d	\$ 138,273	(1)	/u
2	M12-X Transport	128,316	GJ/d	\$ 1,477	(2)	/u
3		<u>5,013,115</u>		<u>\$ 139,750</u>		/u
<u>Storage</u>						
4	Short Term Storage Services	10,073,032	GJ	\$ 9,036	(3)	/u
5	Other Storage Services	-	GJ	\$ 1,928	(4)	/u
6		<u>10,073,032</u>	GJ	<u>\$ 10,964</u>		/u

Notes:

- (1) See Exhibit C1 Summary Schedule 5 Line 1
- (2) See Exhibit C1 Summary Schedule 5 Line 2
- (3) See Exhibit C1 Summary Schedule 5 Line 10
- (4) See Exhibit C1 Summary Schedule 5 Line 11

UNION GAS LIMITED  
Comparison of Operating Revenue  
2010 Actual Year vs 2007 Board-Approved

Line No.	Particulars (\$000's)	Actual 2010 (a)	Board-Approved 2007 (b)	Difference (c)
1	Gas sales & T-Service	1,497,451	1,796,757	(299,306)
2	Transportation	183,331	127,701	55,630
3	Storage	20,887	17,962	2,925
4	Other revenue	<u>23,504</u>	<u>24,434</u>	<u>(930)</u>
5	Total operating revenue	<u><u>1,725,173</u></u>	<u><u>1,966,854</u></u>	<u><u>(241,681)</u></u>

Note:

(1) A summary of the other revenue variance:

		Actual 2010	Board-Approved 2007	Difference
6	Delayed payment charges	5,833	7,231	(1,398)
7	Account opening charges	6,579	5,858	721
8	ABC-T charges	7,369	9,041	(1,672)
9	Mid market transactions	2,244	2,000	244
10	Other operating revenue	1,479	304	1,175
11	Total other revenue	23,504	24,434	(930)

**UNION GAS LIMITED**  
Summary of Gas Sales, Delivery and Transportation  
All Customer Rate Classes  
Year Ended December 31, 2010

Line No.	Particulars	Customers Year End <sup>(2)</sup> (a)	Total Volume (10 <sup>3</sup> m <sup>3</sup> ) (b)	Total Gas Sales Revenue (\$000's) (c)	Total Delivery Revenue (\$000's) (d)	Average Delivery Unit Rate <sup>(1)</sup> (\$ /m <sup>3</sup> ) (e) = (d) / (b)
	<u>General Service</u>					
1	Rate M1 Firm	1,025,698	2,782,331	835,912	366,808	0.13183
2	Rate M2 Firm	6,607	1,032,858	143,810	50,759	0.04914
3	Rate 01 Firm	308,846	837,602	306,172	132,588	0.15829
4	Rate 10 Firm	2,154	316,303	61,325	14,503	0.04585
5	Total General Service	<u>1,343,305</u>	<u>4,969,094</u>	<u>1,347,218</u>	<u>564,657</u>	<u>0.38512</u>
6	% of Total (line 27)	99.96%	37.32%	89.97%	82.28%	
	<u>Wholesale - Utility</u>					
7	Rate M9 Firm	2	61,047	876	876	0.01435
8	Rate M10 Firm	2	164	12	4	0.02579
9	Rate 77 Firm	-	-	-	-	-
10	Total Wholesale - Utility	<u>4</u>	<u>61,211</u>	<u>888</u>	<u>880</u>	<u>0.04014</u>
11	% of Total (line 27)	0.00%	0.46%	0.06%	0.13%	
	<u>Contract</u>					
12	Rate M4	130	438,191	15,542	12,148	0.02772
13	Rate M7	6	313,077	6,381	6,381	0.02038
14	Rate 20 Storage	-	-	1,376	1,376	
15	Rate 20 Transportation	51	545,705	19,801	9,401	0.01723
16	Rate 100 Storage	-	-	839	839	
17	Rate 100 Transportation	16	1,882,208	12,639	12,639	0.00672
18	Rate T-1 Storage	-	-	9,982	9,982	
19	Rate T-1 Transportation	53	4,102,748	49,548	49,548	0.01208
20	Rate T-3 Storage	-	-	1,392	1,392	
21	Rate T-3 Transportation	1	253,595	3,614	3,614	0.01425
22	Rate M5	130	527,846	13,560	9,137	0.01731
23	Rate 25	99	220,334	14,606	4,234	0.01922
24	Rate 30	-	-	66	66	
25	Total Contract	<u>486</u>	<u>8,283,705</u>	<u>149,345</u>	<u>120,758</u>	<u>0.13490</u>
26	% of Total (line 27)	0.04%	62.22%	9.97%	17.60%	
27	Total	<u><u>1,343,795</u></u>	<u><u>13,314,010</u></u>	<u><u>1,497,451</u></u>	<u><u>686,295</u></u>	<u><u>0.05155</u></u>

Note:

- (1) The average unit rates are calculated using total delivery revenue including both fixed components (monthly charge, demand) and volumetric components.
- (2) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Summary of Gas Sales, Delivery and Transportation  
General Service Customers, Volume and Total Revenue by Service Class  
Year Ended December 31, 2010

Line No.	Particulars	Rate Class	Customers Year End	Total Volume (10 <sup>3</sup> m <sup>3</sup> )	Total Gas Sales Revenue (\$000's)	Total Delivery Revenue (\$000's)
			(a)	(b)	(c)	(d)
	<u>General Service</u>					
1	Residential	M1	945,156	2,129,693	679,720	317,316
2	Residential	M2	35	3,816	628	193
3	Residential	01	281,810	618,544	239,252	111,014
4	Residential	10				
5	Total General Service Residential		<u>1,227,001</u>	<u>2,752,053</u>	<u>919,600</u>	<u>428,523</u>
6	Share of Total General Service		91.34%	55.38%	68.26%	75.89%
7	Commercial	M1	76,520	599,537	143,473	46,094
8	Commercial	M2	5,284	722,280	102,087	36,706
9	Commercial	01	27,036	219,057	66,920	21,573
10	Commercial	10	1,976	215,866	43,164	10,982
11	Total General Service Commercial		<u>110,816</u>	<u>1,756,740</u>	<u>355,644</u>	<u>115,355</u>
12	Share of Total General Service		8.25%	35.35%	26.40%	20.43%
13	Industrial	M1	4,022	53,101	12,719	3,398
14	Industrial	M2	1,288	306,763	41,094	13,860
15	Industrial	01	-	-	-	-
16	Industrial	10	178	100,438	18,161	3,520
17	Total General Service Industrial		<u>5,488</u>	<u>460,302</u>	<u>71,974</u>	<u>20,779</u>
18	Share of Total General Service		0.41%	9.26%	5.34%	3.68%
19	Total for Rate Class	M1	1,025,698	2,782,331	835,912	366,808
20	Total for Rate Class	M2	6,607	1,032,858	143,810	50,759
21	Total for Rate Class	01	308,846	837,602	306,172	132,588
22	Total for Rate Class	10	2,154	316,303	61,325	14,503
23	Total General Service		<u>1,343,305</u>	<u>4,969,094</u>	<u>1,347,218</u>	<u>564,657</u>
24	Share of Total Market		100.00%	100.00%	100.00%	100.00%

**UNION GAS LIMITED**  
Total Customers by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2010

Line No.	Particulars	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	783,779	161,276	79,713	930	-	1,025,698
2	Rate M2 Firm	3,055	2,517	262	773	-	6,607
3	Rate 01 Firm	223,892	84,611	-	343	-	308,846
4	Rate 10 Firm	1,110	758	-	286	-	2,154
5	Total General Service	<u>1,011,836</u>	<u>249,162</u>	<u>79,975</u>	<u>2,332</u>	<u>-</u>	<u>1,343,305</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	2	-	2
7	Rate M10 Firm	1	1	-	-	-	2
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>4</u>
	<u>Contract</u>						
10	Rate M4	9	2	-	119	-	130
11	Rate M7	-	-	-	6	-	6
12	Rate 20 Storage	-	-	-	-	-	- (1)
13	Rate 20 Transportation	3	-	-	17	31	51
14	Rate 100 Storage	-	-	-	-	-	- (1)
15	Rate 100 Transportation	-	-	-	-	16	16
16	Rate T-1 Storage	-	-	-	-	-	- (1)
17	Rate T-1 Transportation	-	-	-	-	53	53
18	Rate T-3 Storage	-	-	-	-	-	- (1)
19	Rate T-3 Transportation	-	-	-	-	1	1
20	Rate M5	4	1	-	125	-	130
21	Rate 25	46	-	-	-	53	99
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>62</u>	<u>3</u>	<u>-</u>	<u>267</u>	<u>154</u>	<u>486</u>
24	Total Customers	<u>1,011,899</u>	<u>249,166</u>	<u>79,975</u>	<u>2,601</u>	<u>154</u>	<u>1,343,795</u>

Note:

(1) Customer count for storage is included in the transportation customer count.

UNION GAS LIMITED  
Total Throughput Volume by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2010

Line No.	Particulars (10 <sup>3</sup> m <sup>3</sup> )	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
<u>General Service</u>							
1	Rate M1 Firm	2,050,177	488,246	229,478	14,430	-	2,782,331
2	Rate M2 Firm	407,787	338,745	35,499	250,828	-	1,032,858
3	Rate 01 Firm	584,831	245,838	-	6,933	-	837,602
4	Rate 10 Firm	132,869	91,368	-	92,067	-	316,303
5	Total General Service	<u>3,175,663</u>	<u>1,164,197</u>	<u>264,977</u>	<u>364,258</u>	<u>-</u>	<u>4,969,094</u>
<u>Wholesale - Utility</u>							
6	Rate M9 Firm	-	-	-	61,047	-	61,047
7	Rate M10 Firm	35	129	-	-	-	164
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>35</u>	<u>129</u>	<u>-</u>	<u>61,047</u>	<u>-</u>	<u>61,211</u>
<u>Contract</u>							
10	Rate M4	14,885	4,116	-	419,190	-	438,191
11	Rate M7	-	-	-	313,077	-	313,077
12	Rate 20 Storage	-	-	-	-	-	-
13	Rate 20 Transportation	13,891	-	-	108,600	423,214	545,705
14	Rate 100 Storage	-	-	-	-	-	-
15	Rate 100 Transportation	-	-	-	-	1,882,208	1,882,208
16	Rate T-1 Storage	-	-	-	-	-	-
17	Rate T-1 Transportation	-	-	-	-	4,102,748	4,102,748
18	Rate T-3 Storage	-	-	-	-	-	-
19	Rate T-3 Transportation	-	-	-	-	253,595	253,595
20	Rate M5	19,866	1,550	-	506,430	-	527,846
21	Rate 25	44,741	-	-	-	175,593	220,334
22	Rate 30	-	-	-	-	-	-
23	Total Contract	<u>93,384</u>	<u>5,666</u>	<u>-</u>	<u>1,347,297</u>	<u>6,837,358</u>	<u>8,283,705</u>
24	Total Volume	<u>3,269,081</u>	<u>1,169,992</u>	<u>264,977</u>	<u>1,772,602</u>	<u>6,837,358</u>	<u>13,314,010</u>

UNION GAS LIMITED  
Total Gas Sales Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2010

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	742,945	62,690	29,384	893	-	835,912
2	Rate M2 Firm	112,890	16,660	3,179	11,081	-	143,810
3	Rate 01 Firm	246,293	58,770	-	1,109	-	306,172
4	Rate 10 Firm	40,094	11,090	-	10,141	-	61,325
5	Total General Service	<u>1,142,221</u>	<u>149,211</u>	<u>32,563</u>	<u>23,223</u>	<u>-</u>	<u>1,347,218</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	876	-	876
7	Rate M10 Firm	9	3	-	-	-	12
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>9</u>	<u>3</u>	<u>-</u>	<u>876</u>	<u>-</u>	<u>888</u>
	<u>Contract</u>						
10	Rate M4	3,887	115	-	11,540	-	15,542
11	Rate M7	-	-	-	6,381	-	6,381
12	Rate 20 Storage	-	-	-	-	1,376	1,376
13	Rate 20 Transportation	3,861	-	-	8,532	7,407	19,801
14	Rate 100 Storage	-	-	-	-	839	839
15	Rate 100 Transportation	-	-	-	-	12,639	12,639
16	Rate T-1 Storage	-	-	-	-	9,982	9,982
17	Rate T-1 Transportation	-	-	-	-	49,548	49,548
18	Rate T-3 Storage	-	-	-	-	1,392	1,392
19	Rate T-3 Transportation	-	-	-	-	3,614	3,614
20	Rate M5	4,765	36	-	8,759	-	13,560
21	Rate 25	11,070	-	-	-	3,536	14,606
22	Rate 30	-	-	-	-	66	66
23	Total Contract	<u>23,583</u>	<u>151</u>	<u>-</u>	<u>35,212</u>	<u>90,400</u>	<u>149,345</u>
24	Total	<u>1,165,813</u>	<u>149,365</u>	<u>32,563</u>	<u>59,311</u>	<u>90,400</u>	<u>1,497,451</u>

UNION GAS LIMITED  
Delivery Revenue by Service Type and Rate Class  
All Customer Rate Classes  
Year Ended December 31, 2010

Line No.	Particulars (\$000's)	System Sales (a)	ABC-T (b)	ABC-Unbundled (c)	Bundled-T (d)	T-Service (e)	Total (f)
	<u>General Service</u>						
1	Rate M1 Firm	273,840	62,690	29,384	893	-	366,808
2	Rate M2 Firm	19,839	16,660	3,179	11,081	-	50,759
3	Rate 01 Firm	93,036	39,004	-	548	-	132,588
4	Rate 10 Firm	6,355	4,729	-	3,419	-	14,503
5	Total General Service	<u>393,070</u>	<u>123,083</u>	<u>32,563</u>	<u>15,941</u>	<u>-</u>	<u>564,657</u>
	<u>Wholesale - Utility</u>						
6	Rate M9 Firm	-	-	-	876	-	876
7	Rate M10 Firm	1	3	-	-	-	4
8	Rate 77 Firm	-	-	-	-	-	-
9	Total Wholesale - Utility	<u>1</u>	<u>3</u>	<u>-</u>	<u>876</u>	<u>-</u>	<u>880</u>
	<u>Contract</u>						
10	Rate M4	493	115	-	11,540	-	12,148
11	Rate M7	-	-	-	6,381	-	6,381
12	Rate 20 Storage	-	-	-	-	1,376	1,376
13	Rate 20 Transportation	315	-	-	1,680	7,406	9,401
14	Rate 100 Storage	-	-	-	-	839	839
15	Rate 100 Transportation	-	-	-	-	12,639	12,639
16	Rate T-1 Storage	-	-	-	-	9,982	9,982
17	Rate T-1 Transportation	-	-	-	-	49,548	49,548
18	Rate T-3 Storage	-	-	-	-	1,392	1,392
19	Rate T-3 Transportation	-	-	-	-	3,614	3,614
20	Rate M5	343	36	-	8,759	-	9,137
21	Rate 25	843	-	-	-	3,391	4,234
22	Rate 30	-	-	-	-	66	66
23	Total Contract	<u>1,994</u>	<u>151</u>	<u>-</u>	<u>28,359</u>	<u>90,254</u>	<u>120,758</u>
24	Total	<u>395,065</u>	<u>123,237</u>	<u>32,563</u>	<u>45,176</u>	<u>90,254</u>	<u>686,295</u>



UNION GAS LIMITED  
Other Revenue  
Calendar Year Ending December 31

<u>Line No.</u>	<u>Particulars (\$000's)</u>	<u>Actual 2010 (a)</u>	<u>Adjustments (b)</u>	<u>Total (c)</u>
1	Late payment charges	5,833		5,833
2	Account opening charges	6,579		6,579
3	Billing Revenue	7,369		7,369
6	Mid market transactions	2,244		2,244
7	Other operating revenue	<u>1,479</u>	<u></u>	<u>1,479</u>
8	Total Other Revenue	<u><u>23,504</u></u>	<u><u>-</u></u>	<u><u>23,504</u></u>

UNION GAS LIMITED  
Revenue from Storage and Transportation of Gas  
2010 Actual vs. 2007 Board-Approved

Line No.	Particulars (\$000's)	Actual 2010 (a)	Board- Approved 2007 (b)	Difference (c)
<u>Transportation</u>				
1	M12 Transportation	142,421	120,667	21,754
2	M12-X Transportation	-	-	-
3	C1 Long-term Transportation	6,288	2,900	3,388
4	C1 Short-term Transportation and Exchanges	32,554	3,742	28,812
5	C1 Rebate Program	-	(2,178)	2,178
6	M13 Transportation	386	864	(478)
7	M16 Transportation	610	553	57
8	Other S&T Revenue	<u>1,072</u>	<u>810</u>	<u>262</u>
9	Total Transportation Revenue	183,331	127,358	55,973
<u>Storage</u>				
10	Short-term Storage Services	14,886	13,887	999
11	Off-Peak Storage/Balancing/Loan Services	<u>6,001</u>	<u>4,075</u>	<u>1,926</u>
12	Total Storage Revenue	<u>20,887</u>	<u>17,962</u>	<u>2,925</u>
13	Total S&T Revenue	<u><u>204,218</u></u>	<u><u>145,320</u></u>	<u><u>58,898</u></u>

UNION GAS LIMITED  
Storage and Transportation Details  
As at November 1, 2010

<u>Line No.</u>	<u>Description</u>	<u>Contracted Capacity at Nov 1</u>	<u>Unit</u>	<u>Revenue (\$000's)</u>
	<u>Transportation</u>			
1	M12 Transport	<u>5,118,708</u>	GJ/d	<u>142,421</u> <sup>(1)</sup>
	<u>Storage</u>			
2	Short-term Storage Services	10,188,032	GJ	14,886 <sup>(2)</sup>
3	Other Storage Services	<u>-</u>	GJ	<u>6,001</u> <sup>(3)</sup>
4		<u>10,188,032</u>	GJ	<u>20,887</u>

Note:

- (1) See Exhibit C1, Summary Schedule 5, line 1.
- (2) See Exhibit C1, Summary Schedule 5, line 10.
- (3) See Exhibit C1, Summary Schedule 5, line 11.