2015 OPERATING REVENUE SUMMARY

1. The purpose of this evidence is to summarize the revenue forecast for 2015 Test Year, 2015 Board Approved Placeholder and 2014 Board Approved Budget.

2. A summary of the revenue for 2015 Test Year, 2015 Board Approved Placeholder and 2014 Board Approved Budget is provided in Table 1 below.

Table 1
Revenue Forecast
($ millions)

	Col. 1 2015 Updated Budget	Col. 2 2015 Board Approved Placeholder	Col. 3 2014 Board Approved Budget
1.0 Gas Sales	2,415.0	2,404.3	2,205.5
2.0 Transportation of Gas	259.2	229.6	229.2
3.0 Transmission, Compression and Storage	1.8	1.8	1.8
4.0 Other Operating Revenue	42.7	42.7	42.7
5.0 Other Income	0.1	0.1	0.1
6.0 Total Operating Revenue	2,718.8	2,678.5	2,479.3

3. The 2015 Updated Revenue Budget is $2,718.8 million as shown at Exhibit C3, Tab 1, Schedule 1. This represents a $40.3 million increase over the 2015 Placeholder of $2,678.5 million. A comparison of the 2015 Test Year Budget of Utility Operating Revenue to the 2015 Board Approved Placeholder is provided at Exhibit C3, Tab 1, Schedule 2.

4. The variance is explained by the revenue categories in the following paragraphs.

Witnesses: S. Qian
L. Stickles
M. Suarez

Gas Sales and Transportation of Gas Revenues

5. Gas sales and transportation of gas revenues for the 2015 Board Approved Placeholder used the Board-approved commodity rates in place in 2013 and the 2014 gas volume budget. Specifically, the 2015 Board Approved Placeholder was developed on the basis of EB-2013-0045 commodity rates set out in the April 2013 QRAM and the 2013 final rates that can be found in the Board Decision and Order for EB-2011-0354. The 2015 Test Year Gas Sales and Transportation of Gas Revenues are based on the EB-2014-0191 commodity rates set out in the October 2014 QRAM and the Final Rate Order in EB-2012-0459. Those updated commodity rates are applied to the updated gas volume budget set out within this rate adjustment application.

6. The evidence in support of the Company's 2015 gas volume budget is set out within Exhibit C1-2-1 and the C2 series of exhibits, with further numeric details in the C3 series of exhibits.

7. The increase in gas sales and transportation of gas revenues of $40.3 million from the 2015 Board Approved Placeholder to the 2015 Test Year Budget is primarily due to higher commodity rates using October 2014 QRAM commodity rates, partially offset by a decrease in distribution rates.

8. A breakdown of the 2015 Test Year Budget and 2015 Board Approved Placeholder gas sales and transportation of gas revenues by rate class is provided within the C3 series of exhibits.

Witnesses: S. Qian
L. Stickles
M. Suarez

Transmission, Compression and Storage

9. Transmission, Compression and Storage revenues for the 2015 Test Year Budget are also developed on the basis of Final Rate Order in EB-2012-0459. There is no variance from the 2015 Budget of $1.8 million compared to the 2015 Board Approved Placeholder.

Other Operating Revenues

10. Within the Board's EB-2012-0459 Decision with Reasons, Enbridge's Other Operating Revenues and Other Income were set at the level of $42.7 million and $0.1 million for each year from 2014 to 2018. Accordingly, there is no change in these amounts within the 2015 Test Year Budget.

Witnesses: S. Qian
L. Stickles
M. Suarez

GAS VOLUME BUDGET

1. The purpose of this evidence is to present the 2015 forecast of volumes to reflect updated forecast assumptions as part of the annual adjustments for the 2015 Rate Adjustment proceeding. The evidence describes the forecasting methodology and the key assumptions used to develop the volumes forecast for the General Service customers and Contract Market. The 2015 volume forecasts have been prepared based on the approved methodology applied in prior rate case filings. The contract market volume forecasts also reflect a probability-weighted methodology for potential new customers in accordance with the Ontario Energy Board's (the "Board") EB-2012-0459 Decision with Reasons dated July 17, 2014.

2. A summary of the 2015 volumes forecast is provided below. Further rate class detail and explanation for all gas volumes and related items are provided at Exhibit C3, Tab 2, Schedule 3.

Table 1
Summary of Gas Sales and Transportation Volumes
(Volumes in 10^6m^3)

	2013 Actual	2014 Board Approved Budget	2015 Budget
General Service Volumes	9 526.2	9 192.0	9 336.4
Contract Market Volumes	2 031.8	1 967.0	1 842.1
Total Volumes, Gas Sales and Transportation	11 558.0	11 159.0	11 178.5

Witnesses: S. Qian
M. Suarez

3. Total customers are reported as the annual average of monthly customer numbers. This annual average customer methodology has been used to develop Board Approved annual average customer numbers for more than ten years. Table 2 below illustrates the annual average number of general service and contract market customers for the forecast years. The methodology used to develop the customer budget can be found at Appendix B of this evidence.

Table 2
Summary of Total Average Number of Customers

	2013 Actual	2014 Board Approved Budget	2015 Budget
General Service Customers	2 029 589	2 059 217	2 096 458
Contract Market Customers	412	404	381
Total Number of Customers (Average)	2 030 001	2 059 621	2 096 839

General Service Demand Forecast Methodology

4. The general service volume forecast is derived using the general service customer budget and the normalized average use per customer forecast generated from the average use forecasting models.

5. The average use forecasting models are Enbridge Gas Distribution Inc's ("Enbridge" and / or the "Company') developed regression models, which are described in detail in the evidence at Exhibit C2, Tab 1, Schedule 3. The forecast incorporates economic assumptions from the Economic

Outlook, Q2 2014. Please refer to Exhibit C2, Tab 1, Schedule 1 for the economic assumptions.

6. The major variables in Rate 1 and Rate 6 models are heating degree days, vintage (Rate 1 only), employment, Ontario real gross domestic product, vacancy rates (Rate 6 only), real energy prices, and time trend. Annual econometric models are employed to model and quantify the impact of different variables on average use per customer. The vintage variable is constructed to reflect the impact that new homes, associated with more energy efficient gas equipment and enhanced building codes, have on average use. The time trend, including the dynamic variable in the regression model, captures the historical actual average trend of the sectoral average use, conservation initiatives originated by customers themselves or promoted by government programs, stock turnover and other historical impact not reflected in the mentioned driver variables.

7. The forecast of average use per customer is modeled based upon the analysis of weather-normalized volumes data. Normalization is the process that allows the Company to compare average use per customer by removing the influence of the weather. The Company's weather normalization methodology has been approved by the Board and utilized for more than ten years.

8. Consistent with previous rate cases, the Company continues to report the results that the models would generate using the actual data and driver variable information to allow parties to compare the results to the prior year's forecast. The Rate 1 average in-sample forecast error of regression models is 0.8% and the Rate 6 average in-sample forecast error is 1.2% on average during 2004 to 2013.

Overall, the regression model continues to be an good predictor of general service average use.

Contract Market Volume Forecast Methodology

9. The contract market volume budget was generated using the established grass roots approach as well as a new probability-weighted forecast approach for potential new large-volume contract customers. In its EB-2012-0459 Decision dated July 17, 2014, the Board expressed support for a probability-weighted forecast approach for potential new large-volume contract customers who are in the process of considering service in upcoming years.

10. At any given point in time, Enbridge is in conversation with new and existing customers to evaluate their gas service requirements. The traditional grass roots approach generates volume forecasts on an individual customer basis by account executives ("AEs") in consultation with customers during the budget process. Specifically, the AEs review the contract attributes for each contract in order to ensure that the customer can meet the contracted rate class minimum volume and load factor requirements. Current economic and industry conditions and budgeted degree days are factored into the budget determination. The same approach has been retained to forecast volumes for existing customers.

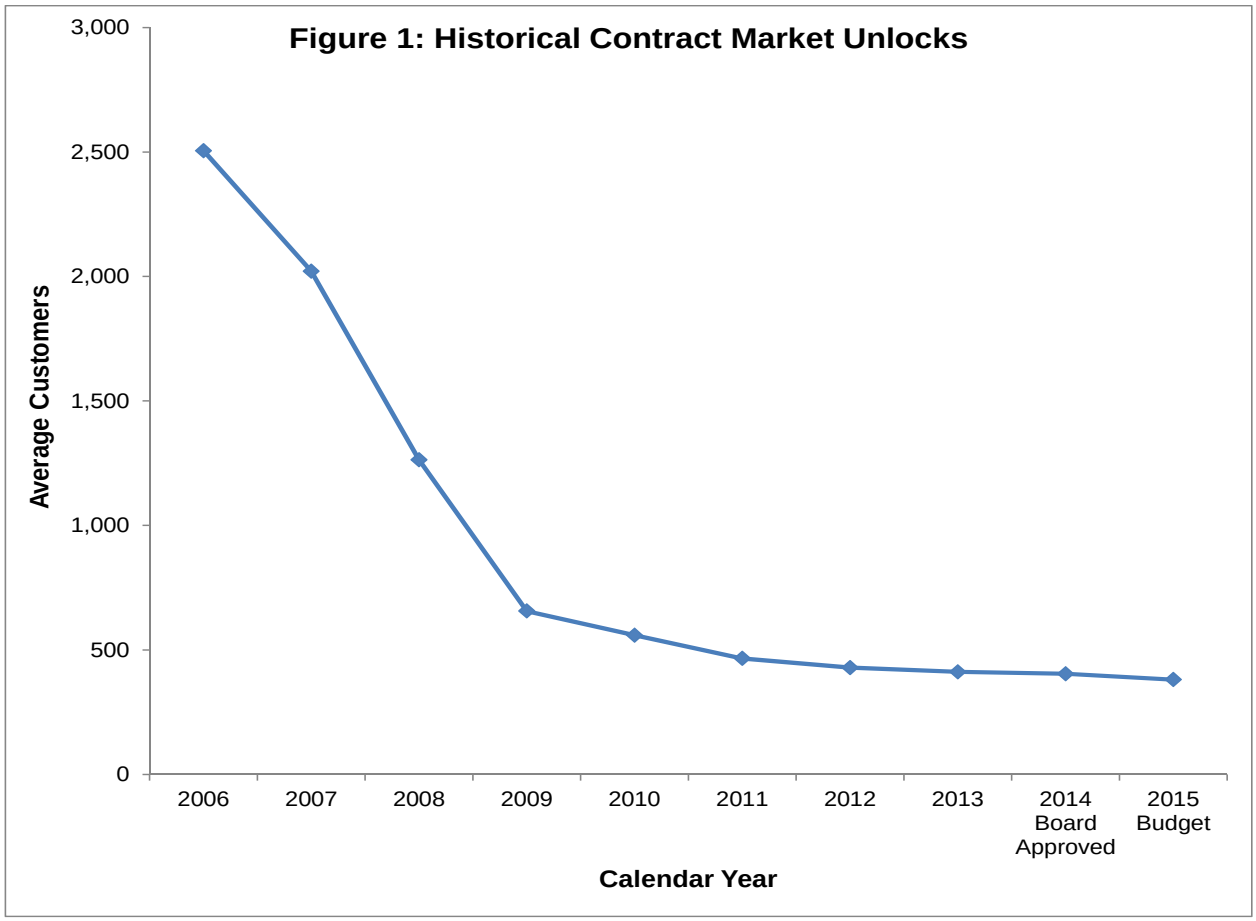
11. For the purpose of establishing a probability-weighted methodology for potential customers, existing practices were leveraged. Over the years, as the AEs in the Key Accounts group have worked with numerous potential customers, they collectively devised a system of capturing the stages at which new customers progress from the initial evaluation stage to ultimately signing a Large Volume Distribution Contract. Five stages or buckets are used to funnel projects from initial

discussions through to energizing the pipeline. The weights for each stage were assigned through conversations with the AEs who drew on actual experiences over the years. When a customer approaches the Utility requesting service, the AE prepares an assessment by analyzing the customer's site and volume requirements. This is used to determine the cost of the new addition and the applicable rate class.

- Stage 1: The potential customer is counted in this stage when a feasibility analysis is prepared with a subsequent terms sheet that outlines the timelines and contribution requirements. A customer remains in this bucket if they agree to the feasibility, and this initiates the contracting phase. This stage is assigned a 30% probability.
- Stage 2: The customer has purchased or leased the land and equipment for the project. This second stage is assigned a 50% probability.
- Stage 3: The contract terms have been negotiated and agreed upon, contracts have been executed, and the contribution and security deposits (if required) have been received. This third stage is assigned a 70% probability.
- Stage 4: When construction has started, 80% probability is assigned to the customer.
- Stage 5: The project is considered complete (at 100%) when the customer has executed a Large Volume Distribution Contract. The expectation is that gas will be flowing to the customer within 90-120 days.

12. It should be noted that even with a signed contract, a number of significant projects have been cancelled in the past. Hence, a signed contract cannot be considered as without risk.

13. Based on the grass-root approach and the proposed probability weight method described above, Figure 1 below shows the projection for 2015 unlocks, in comparison to 2014 Board Approved unlocks as well the historical actual contract market unlocks between 2006 and 2013.



14. As the previous graph illustrates, approximately 2,000 contract market customers migrated to general service over the period 2006 through 2010. This customer migration drove up average use per customer in Rate 6 over that period. With

rates migration stabilized in recent years, the number of projected contract market customers follows a relatively flat trend.

15. As a consequence of the implementation of the Natural Gas Electricity Interface Review ("NGEIR") in 2007, the Company experienced customer migration from bundled rate classes that bill distribution volumes volumetrically, reported in Table 1, to unbundled rate classes (e.g., Rate 125, Rate 300 Firm) that do not bill distribution volumes volumetrically. Unbundled customers incur monthly contract demand volumes and generate fixed contract demand revenues. Table 3 below presents a summary of these contract demand volumes.

Table 3
Summary of Unbundled Customers Contract Demand Volumes
(Volumes in 10^6m^3)

	2013 Actual	2014 Board Approved Budget	2015 Budget
Total Contract Demand Volumes	117.9	119.4	119.4

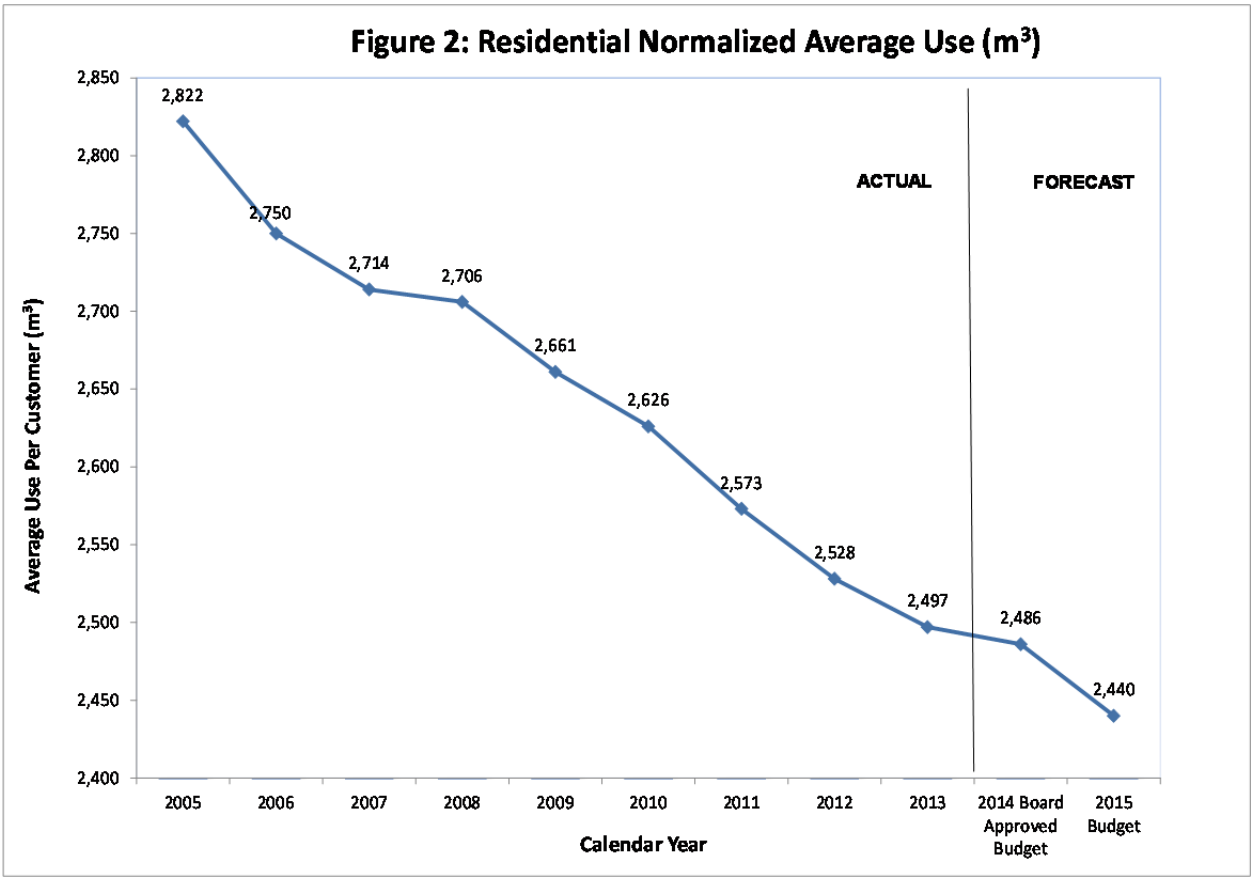
2015 Volume Budget

16. The 2015 Budget volumes reflect the meter reading heating degree days forecast using the Board approved degree day methodology in EB-2012-0459 decision. The 2015 Budget is comprised of General Service volumes of 9,336.4 10^6m^3 and Contract Market volumes of 1,842.1 10^6m^3. Detailed breakdown of gas volumes by rate class is provided at Exhibit C3, Tab 2, Schedule 1. Monthly meter reading heating degree days are determined by combining the Gas Supply heating degree day forecasts with the billing schedules. Please refer to Exhibit C2, Tab 1,

Schedule 2 for a detailed explanation of the derivation of the Company's degree days forecast.

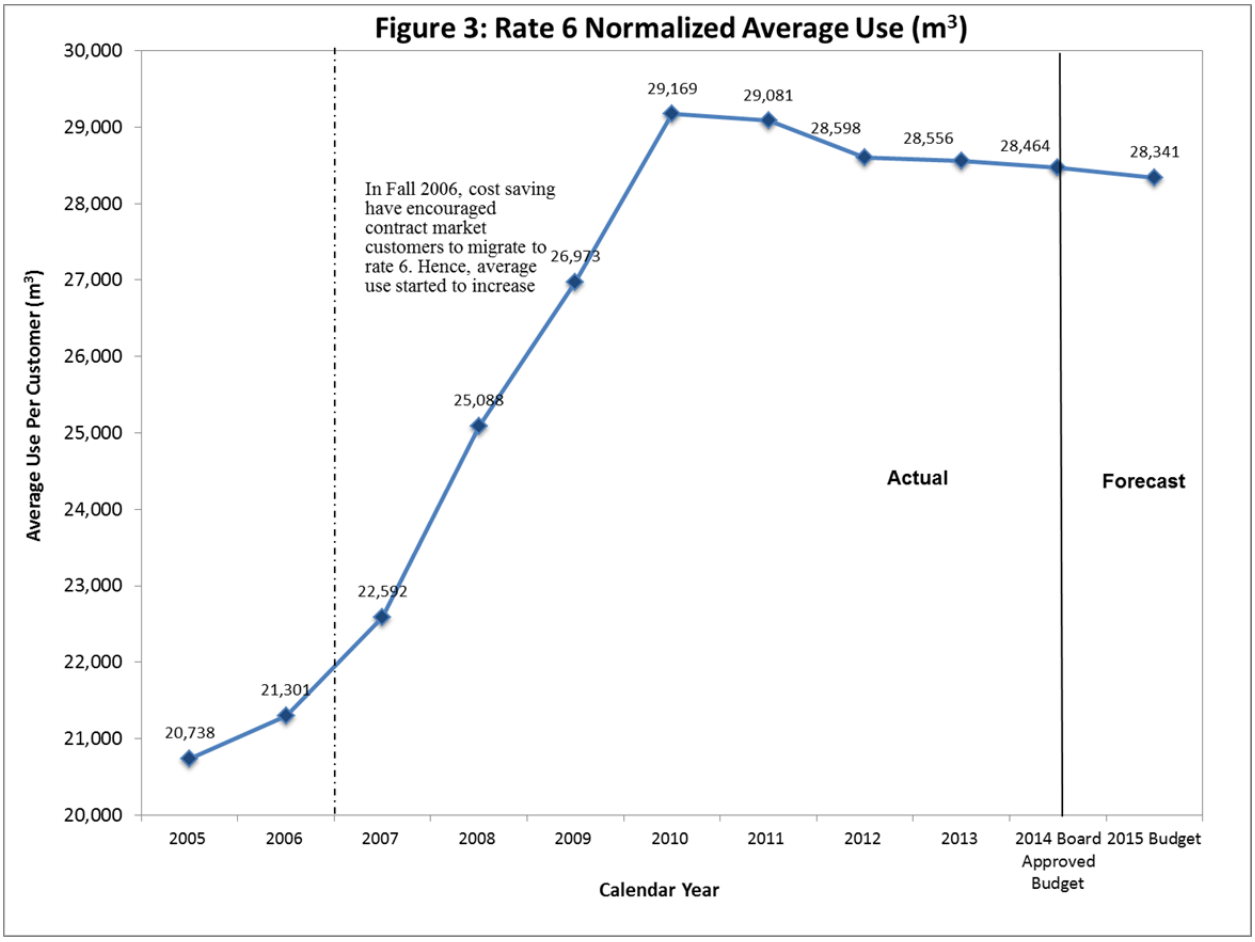
17. Table 1 in Appendix A of this evidence presents the historical normalized actual and Board approved general service average uses. Also, in order to eliminate the weather impact for year over year comparison, historical average uses are normalized to the 2015 forecast degree days at Table 2 & 3 of Appendix A.

18. Residential average use per customer has declined steadily over the period of 2005 through 2013, at an average rate of 1.3% per year. Figure 2 depicts this trend.



19. Based on the driver variables in the updated regression models which incorporate 2013 actual billing data and the latest economic assumptions, it is expected that the Rate 1 average use per customer will decrease slightly in 2015 compared to 2014 Board Approved Budget and 2013 Actual.

20. The following Figure 3 shows the normalized actual average use per customer for Rate 6 from 2005 to 2014, and the projection for 2014 to 2015, as filed at Table 2 and Table 3 of Appendix A of this evidence.



21. As noted earlier, there is a clear upward trend in usage per customer from 2006 to 2010 resulting from customer migration from contract market to general service. Rate design changes to include contract demand charges for Rate 100 and Rate 145, which became effective April 2007, prompted much of this rate migration. Approximately 2,000 contract market customers have migrated to general service over the period from 2006 through 2010.

22. Over the past few years, rate migration has stabilized and Rate 6 average use per customer has reflected a relatively flat or downward trend. Based on the driver variables in the updated regression models which incorporate 2013 actual billing data and the economic assumptions at the time of this analysis, it is expected that Rate 6 average use per customer will decrease slightly in 2015 compared to 2014 Board Approved Budget.

Comparison of 2015 Budget and 2014 Board Approved Budget

23. The 2015 Budget volumes reflect the heating degree days forecast for the Central Region of 3,536, an increase of 19 degree days compared to the 2014 Budget level of 3,517.

24. The 2015 Budget volumes of 11 178.5 10^6m^3 forecast to be 19.5 10^6m^3, or 0.2%, above the 2014 Board Approved Budget of 11 159.0 10^6m^3. The increase is primarily attributable to customer growth and higher degree days forecast, partially offset by lower average use for General Service customers and lower volumes in contract market. On a weather-normalized basis, the 2015 Budget volumes are forecast to be 8.1 10^6m^3 lower than the 2014 Budget. The volume decrease on a normalized basis is made up of a decrease in contract market volumes of

125.6 10^6m^3, partially offset by an increase in General Service of 117.5 10^6m^3. Further rate class detail and explanations are provided at Exhibit C3, Tab 2, Schedule 3.

25. The increase in the general service volumes of 117.5 10^6m^3 on a weather-normalized basis is primarily due to net customer growth of 164.1 10^6m^3, net customer migration from Contract Market of 41.1 10^6m^3, partially offset by lower average use per customer in Rate 1 totaling 41.0 10^6m^3 and lower average use per customer in Rate 6 totaling 46.7 10^6m^3. Continuous home improvements and conservation initiatives are assumed to be the primary drivers of the decline in residential average use per customer.

26. The 2015 contract volume budget is expected to see a decrease of 125.6 10^6m^3 compared to the 2014 Budget on a weather-normalized basis. The variance is mainly due to the decrease in the apartment sector of 1.4 10^6m^3, the commercial sector of 106.4 10^6m^3 and the industrial sector of 22.0 10^6m^3, partially offset by the increase of Rate 200 of 4.2 10^6m^3.

<u>Evaluation of Forecast Accuracy – Historical Normalized Actual vs. Board Approved Budget</u>

27. Historical Board Approved volumes were developed and approved based upon fiscal year information. For the periods prior to 2006, September 30 is fiscal year end whereas for the years 2006 and beyond the fiscal year is the calendar year.

28. The General Service Average Use Table 1 of the Appendix A at this evidence illustrates a 10-Year history of Normalized Actual vs. Board Approved volumes. The key factor used to evaluate the accuracy of the general service volumetric

demand is the variance of normalized residential average use per customer. The average normalized percentage variances between 2004 and 2013 are 0.8% for Rate 1 and 1.2% for Rate 6. Hence, the general service average use forecasting methodology continues to be a reasonable predictor for general service average use.

29. For the contract market, customer migration has had a significant impact between 2006 and 2010. In addition, the contract market volumes are primarily driven by economic factors. The Table 4 at Appendix A of this evidence illustrates a 10-Year history of Normalized Actual vs. Board Approved volumes for contract market customers to evaluate accuracy of forecast volumes.

Weather Normalization Methodology

30. The Company's weather normalization methodology has been approved by the Board and utilized for over ten years. Consistent with the previous rate cases, this section explains the Board approved normalization methodology of normalizing actual consumption for general service rate classes.

31. General Service normalization is carried out taking customers at a group level. The Company's General Service customers are grouped together into homogenous classes of gas usage within the three delivery areas (and six operating regions) of the Company's franchise area. Only the heat sensitive portion of consumption is normalized for heat sensitive or balance point degree days.

32. Firstly, the total load per customer of a customer group is calculated by dividing the group's consumption by the total customers within this group. Then, base-load per

customer is calculated by taking an average of the two non-weather sensitive summer months' total load. Base-load represents non-weather sensitive load, such as water heating and other non-heating uses. Thereafter, heat-load per customer is calculated by subtracting the base-load per customer from the total load per customer. This heat-load represents the heat sensitive portion of consumption. By dividing the heat-load per customer by Actual Heating Degree Days, an Actual Use per Degree Day is generated. The Actual Use per Degree Day is then adjusted to reflect normal weather by multiplying the Budget Heating Degree Days. Consequently, total normalized average use per customer is defined as an aggregate sum of base-load use per customer and normalized heat-load per customer.

33. For contract market customers who consume more than 340,000 m^3 annually, a similar process is followed to determine the actual base-load for each contract. Actual heat-load is obtained by removing the base-load and the process load from the total consumption, which is then adjusted to reflect normal weather. The actual volumes are also adjusted, where necessary, to the budgeted level of curtailment.

GENERAL SERVICE AVERAGE USES
HISTORICAL NORMALIZED ACTUAL AND BOARD APPROVED
FISCAL AND CALENDAR YEARS

1. In order to compare the year over year variance between Actual and Board Approved average uses on the same basis, the actual results have to be normalized to the corresponding Board Approved degree days for that fiscal year. Prior to 2006 the historical Board Approved degree days and average uses were developed based on the Company's fiscal-year ending September 30. From 2006 onwards, the fiscal year is the calendar year.

2. The actual average uses in Table 1 on the following page have been normalized to the corresponding Board Approved degree days for the respective year.

3. The normalized average uses on pages 3 and 4 are different from those presented in Table 1. These normalized average uses are all presented on a calendar-year basis and they are all normalized to the 2015 forecast degree days in order to eliminate the weather impact.

TABLE 1
GENERAL SERVICE AVERAGE USE

	Test Year	Rate Classes	Col. 1 Actual Normalized Average Use	Col. 2 Board Approved Normalized Average Use	Col. 3 Variance Normalized Average Use	Col. 4 %Variance Normalized Average Use
FISCAL YEAR	2003	Rate 1	2,877	2,892	(15)	-0.5%
		Rate 6	21,593	21,685	(92)	-0.4%
		Total General Service	4,541	4,579	(38)	-0.8%
	2004*	Rate 1	2,843	2,857	(14)	-0.5%
		Rate 6	21,472	21,612	(140)	-0.6%
		Total General Service	4,461	4,502	(41)	-0.9%
	2005	Rate 1	2,890	2,953	(63)	-2.1%
		Rate 6	22,241	22,507	(266)	-1.2%
		Total General Service	4,547	4,646	(99)	-2.1%
CALENDAR YEAR	2006	Rate 1	2,796	2,850	(54)	-1.9%
		Rate 6	22,272	21,999	273	1.2%
		Total General Service	4,444	4,438	6	0.1%
	2007	Rate 1	2,726	2,687	39	1.5%
		Rate 6	22,783	21,010	1,773	8.4%
		Total General Service	4,412	4,200	212	5.0%
	2008	Rate 1	2,636	2,647	(11)	-0.4%
		Rate 6	24,869	24,204	665	2.7%
		Total General Service	4,493	4,449	44	1.0%
	2009	Rate 1	2,604	2,637	(33)	-1.3%
		Rate 6	27,281	28,165	(884)	-3.1%
		Total General Service	4,659	4,770	(111)	-2.3%
	2010	Rate 1	2,579	2,622	(43)	-1.6%
		Rate 6	29,106	27,949	1,157	4.1%
		Total General Service	4,403	4,705	(302)	-6.4%
	2011	Rate 1	2,594	2,643	(49)	-1.8%
		Rate 6	29,471	28,029	1,442	5.1%
		Total General Service	4,764	4,726	38	0.8%
	2012	Rate 1	2,529	2,510	18	0.7%
		Rate 6	28,941	30,122	(1,182)	-3.9%
		Total General Service	4,642	4,715	(73)	-1.5%
	2013	Rate 1	2,547	2,568	(22)	-0.8%
		Rate 6	29,878	29,878	(0)	0.0%
		Total General Service	4,665	4,719	(54)	-1.1%

* 2004 Bridge Year Estimate from RP-2003-0203 was reported at column 2 because Board Approved numbers are not available since there was no 2004 Board Approved Volumes Budget due to the nature of the 2004 Rate Application. Please see RP-2003-0048, Exhibit A, Tab 3, Schedule 1 for the rationale for implementing this new approach.

Witnesses: S. Qian
M. Suarez

TABLE 2
GENERAL SERVICE
SYSTEM-WIDE TOTAL NORMALIZED AVERAGE USE*

		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 Board Approved Budget	2015 Forecast
Residential		2,750	2,714	2,706	2,661	2,626	2,573	2,528	2,497	2,486	2,440	2,419
	Change		(36)	(8)	(45)	(35)	(53)	(45)	(31)	(11)	(46)	(21)
	% Change		-1.31%	-0.29%	-1.66%	-1.32%	-2.02%	-1.75%	-1.23%	-0.44%	-1.85%	-0.86%
Apartment		79,205	86,725	100,842	124,932	143,154	163,216	151,010	146,074	147,154	145,921	149,645
	Change		7,520	14,117	24,090	18,222	20,062	(12,206)	(4,936)	1,080	(1,233)	3,724
	% Change		9.49%	16.28%	23.89%	14.59%	14.01%	-7.48%	-3.27%	0.74%	-0.84%	2.55%
Commercial		16,713	16,875	17,333	18,084	18,755	19,430	19,528	19,456	19,369	19,414	19,110
	Change		162	458	751	671	675	98	(72)	(87)	45	(304)
	% Change		0.97%	2.71%	4.33%	3.71%	3.60%	0.50%	-0.37%	-0.45%	0.23%	-1.57%
Industrial		52,186	54,905	59,816	74,496	88,639	106,931	108,822	104,980	106,775	105,934	108,222
	Change		2,719	4,911	14,680	14,143	18,292	1,891	(3,842)	1,795	(841)	2,288
	% Change		5.21%	8.94%	24.54%	18.98%	20.64%	1.77%	-3.53%	1.71%	-0.79%	2.16%

* All historical average uses are on a calendar-year basis and have been normalized to the 2015 Budget degree days.

TABLE 3
GENERAL SERVICE
SYSTEM-WIDE TOTAL NORMALIZED AVERAGE USE*

		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 Board Approved Budget	2015 Forecast
Rate 1		2,750	2,714	2,706	2,661	2,626	2,573	2,528	2,497	2,486	2,440	2,419
	Change		(36)	(8)	(45)	(35)	(53)	(45)	(31)	(11)	(46)	(21)
	% Change		-1.31%	-0.29%	-1.66%	-1.32%	-2.02%	-1.75%	-1.23%	-0.44%	-1.85%	-0.86%
Rate 6		20,738	21,301	22,592	25,088	26,973	29,169	29,081	28,598	28,556	28,464	28,341
	Change		563	1,291	2,496	1,885	2,196	(88)	(483)	(42)	(92)	(123)
	% Change		2.71%	6.06%	11.05%	7.51%	8.14%	-0.30%	-1.66%	-0.15%	-0.32%	-0.43%

* All historical average uses are on a calendar-year basis and have been normalized to the 2015 Budget degree days.

TABLE 4

CONTRACT CUSTOMERS NORMALIZED VOLUME

	Test Year	Col. 1 Actual Normalized Consumption ($10^6 m^3$)	Col. 2 Board Approved Normalized Consumption ($10^6 m^3$)	Col. 3 Variance Normalized Consumption (1-2)	Col. 4 %Variance Normalized Consumption (3/2)*100
FISCAL YEAR	2003	4,380.7	4,400.2	(19.5)	-0.4%
	2004*	4,275.7	4,309.7	(34.0)	-0.8%
	2005	4,199.2	4,334.2	(135.0)	-3.1%
CALENDAR YEAR	2006	4,119.1	4,387.9	(268.8)	-6.1%
	2007	3,739.8	4,134.3	(394.5)	-9.5%
	2008	3,099.6	3,355.2	(255.6)	-7.6%
	2009	2,191.4	2,316.6	(125.2)	-5.4%
	2010	2,191.5	2,008.6	182.9	9.1%
	2011	2,081.8	2,022.9	58.9	2.9%
	2012	2,072.6	1,943.4	129.2	6.6%
	2013	2,022.7	1,945.5	77.2	4.0%

* 2004 Bridge Year Estimate from RP-2003-0203 was reported at column 2 because Board Approved numbers are not available since there was no 2004 Board Approved Volumes Budget due to the nature of the 2004 Rate Application. Please see RP-2003-0048, Exhibit A, Tab 3, Schedule 1 for the rationale for implementing this new approach.

Witnesses: S. Qian
M. Suarez

AVERAGE NUMBER OF CUSTOMERS

1. The purpose of this exhibit is to present the calculation of the 2015 annual average customers underpinning the 2015 volume budget. The annual average customer methodology used by Enbridge Gas Distribution Inc. ("Enbridge" and / or the "Company") has been applied to calculate Board Approved annual average customers for more than ten years.

2. The 2015 Customer Budget of 2,096,839 is forecast to be 37,218, or 1.8%, above the 2014 Board Approved Budget of 2,059,621. The increase in customers is primarily attributable to the customer additions in the 2015 Budget and higher opening customers. The total customer additions forecast for 2015 are 34,536. The customer additions forecast underpins the new customer volumes of 164.1 $10^6 m^3$ added between 2015 Budget and 2014 Budget as stated at Exhibit C3, Tab 2, Schedule 3.

Underlying Forecast Methodology

3. Consistent with previous rate proceedings, each year's customer numbers are reported on an annual average of monthly customer numbers. Every month customer numbers are measured by number of active meters (or unlock meters)[1]. As a result, each month's customer number is an aggregate sum of the total active meters for that particular month. Specifically, each year's annual average is calculated as follows:

[1] Unlock meter is defined as customer whose gas meter is unlocked, allowing gas to flow through the meter to a premise.

annual average_customer = (1/12)(january_customer + february_customer + march_customer + april_customer + may_customer + june_customer + july_customer + august_customer + september_customer + october_customer + november_customer + december_customer)*

4. Consistent with the contract demand forecast methodology discussed in the Gas Volume Budget evidence, contract customer counts in the contract market are generated through the grass root approach between account executives and customers (including the probability-weighted methodology for potential new customers). The formula for forecasting the total number of contract market customers is as follows:

   forecast contract market customers = year end customers (2013 Estimate)
   + forecast new customer additions
   + forecast replacement customer additions
   - forecast lost customers
   + forecast transfer gains (i.e. customer migration from general service Rate 6 to contract market rate class)
   – forecast transfer losses (i.e. customer migration from contract market rate class to general service Rate 6)

5. The forecast of total number of general service customers is obtained by adding the forecast customer additions along with a time lag between customer additions and unlock meters to the number of customers recorded at the end of the prior year's forecast. Historical average monthly change in actual lock meters or customers are then added to these numbers. Transfer gains or losses between contract rate class and general service Rate 6 obtained from account executives are then layered onto

general service Rate 6 customers. The formula for forecasting the total number of general service customers is as follows:

forecast general service customers = year end customers
*+ forecast new construction customer additions*new construction time lag*
*+ forecast replacement customer additions*replacement time lag*
+ historical average monthly change in actual lock customers
+ forecast transfer gains (i.e. customer migration from contract market rate class to general service Rate 6)
- forecast transfer losses (i.e. customer migration from general service Rate 6 to contract market rate class)

6. Lock meters are defined as customers whose gas meters are locked and no gas is flowing through the meter to a premise. These can result from vacant premises (e.g., new construction, move-in/move out, bankruptcies, etc.), customer switching off gas to an alternate energy source, payment or credit reasons and seasonal usage. The Company has experienced an increase in lock meters, which has resulted in reduced net customer growth. Unfavorable economic conditions, e.g., vacancy or bankruptcy, may lead to an increase in locked meters and this factor has been incorporated into the customer forecast. Table 1 below presents the historical annual actual lock customer data.

Table 1 - Historical Annual Average Locks Customers

Calendar Year	Lock Customers
2011	41,170
2012	43,575
2013	45,781

Witnesses: S. Qian
M. Suarez

7. There is always a time lag between when the service line is installed (that underpins capital expenditures and customer additions) and the flow of gas which occurs when the customer moves into the premise and calls to have their meter unlocked by field staff, gas service and their account (that underpins billed revenues and volumes) is activated. This time lag is incorporated into the customer number calculation.

8. Similar to lock customers, this time lag is challenging to predict. Therefore, the latest available historical actual data is used in order to obtain an objective forecast of lock meters for the budget. Table 2 below, presents a summary of the 2014 budgeted time lag. It is expected the average time lag (i.e., number of months) for replacement customer additions will be shorter than new construction or subdivision customer additions. Also, the average time lag for commercial buildings or offices is anticipated to be longer than residential homes.

Table 2 - 2015 Budget Time Lag (i.e. Number of Months)

Sector	New Construction	Replacement
Residential	6	3
Apartment	7	7
Commercial	12	11
Industrial	7	7

Evaluation of Forecast Accuracy – Historical Actual vs. Board Approved Budget

9. Historical Board Approved customer numbers are set out on Table 3. The information for periods prior to 2006 shown in this Exhibit is presented on a September 30 fiscal year end whereas the fiscal-year for 2006 and beyond is the calendar year.

Witnesses: S. Qian
M. Suarez

10. Table 3 on the following page illustrates 18 years of Historical Actual vs. Board Approved customer numbers. The average percentage error variances over the past 18 years were 447 customers or approximately 0.1%. Overall, the existing methodology has continued to be a good predictor of actual customers.

TABLE 3 - GENERAL SERVICE AND CONTRACT MARKET CUSTOMERS

	Test Year	Col. 1 Actual Customers	Col. 2 Board Approved Customers	Col. 3 Variance Customers (1-2)	Col. 4 %Variance Customers (3/2)*100
FISCAL YEAR	1996	1,263,290	1,262,815	475	0.0%
	1997	1,312,434	1,309,752	2,682	0.2%
	1998	1,364,350	1,353,178	11,172	0.8%
	1999	1,414,788	1,417,832	(3,044)	-0.2%
	2000[a]	1,464,738	1,468,915	(4,177)	-0.3%
	2001	1,519,039	1,514,710	4,329	0.3%
	2002	1,566,710	1,565,017	1,693	0.1%
	2003	1,622,016	1,615,037	6,979	0.4%
	2004*	1,676,380	1,672,586	3,794	0.2%
	2005[b]	1,724,716	1,718,766	5,950	0.3%
CALENDAR YEAR	2006	1,782,813	1,792,615	(9,802)	-0.5%
	2007	1,824,789	1,823,258	1,531	0.1%
	2008	1,865,020	1,864,047	973	0.1%
	2009	1,887,605	1,906,437	(18,832)	-1.0%
	2010	1,926,294	1,931,528	(5,234)	-0.3%
	2011	1,960,378	1,965,538	(5,160)	-0.3%
	2012	1,994,903	1,984,734	10,169	0.5%
	2013	2,030,001	2,025,462	4,539	0.2%

* 2004 Bridge Year Estimate from RP-2003-0203 was reported at column 2 because Board Approved numbers are not available since there was no 2004 Board Approved Volumes Budget due to the nature of the 2004 Rate Application. Please see RP-2003-0048, Exhibit A, Tab 3, Schedule 1 for the rationale for implementing this new approach.

Witnesses: S. Qian
M. Suarez

KEY ECONOMIC ASSUMPTIONS

ECONOMIC OUTLOOK: CANADA & U.S.*

CALENDAR YEAR	2008	2009	2010	2011	2012	2013	2014F	2015F
REAL GDP (% CHANGE)								
CANADA	1.1	-2.9	3.3	2.4	1.7	1.6	2.3	2.5
U.S.	-0.3	-2.8	2.5	1.8	2.8	1.9	2.8	3.1
CANADA REAL EXPORTS (% CHANGE)	-4.4	-13.2	6.2	4.9	1.6	1.5	2.7	5.7
CANADA REAL IMPORTS (% CHANGE)	0.8	-12.3	13.5	6.2	3.7	1.3	0.9	4.1
CANADA HOUSING STARTS (000's)	211.1	149.1	189.9	194.0	214.8	187.9	181.3	177.9
CANADA UNEMPLOYMENT RATE (%)	6.1	8.3	8.0	7.6	7.4	7.1	6.9	6.6
CANADA EMPLOYMENT GROWTH (% CHANGE)	1.7	-1.6	1.4	1.6	1.3	1.2	0.9	1.2
CONSUMER PRICES (% CHANGE)								
CANADA	2.4	0.3	1.8	2.9	1.6	0.9	1.6	1.9
U.S.	3.8	-0.4	1.7	3.1	2.1	1.5	1.6	2.0

* The forecasts have been updated to reflect the Q2 2014 Economic Outlook.

ECONOMIC OUTLOOK: ONTARIO*

CALENDAR YEAR	2008	2009	2010	2011	2012	2013F	2014F	2015F
REAL GDP (% CHANGE)	-0.1	-3.1	3.4	2.2	1.3	1.5	2.2	2.6
REAL MANUFACTURING OUTPUT (% CHANGE)	-8.9	-15.7	6.5	2.4	2.7	-2.0	2.2	2.6
HOUSING STARTS (000's)	75.1	50.4	60.4	67.8	76.7	61.1	56.6	56.0
UNEMPLOYMENT RATE (%)	6.5	9.0	8.6	7.8	7.9	7.5	7.3	7.0
EMPLOYMENT GROWTH (% CHANGE)	1.5	-2.4	1.6	1.8	0.8	1.4	0.9	1.4
CONSUMER PRICES (% CHANGE)	2.3	0.4	2.4	3.1	1.4	1.1	1.7	1.9
RETAIL SALES (% CHANGE)	3.9	-2.4	5.5	3.6	1.6	1.8	3.0	3.9
WAGE RATE ** (% CHANGE)	1.4	0.1	1.8	2.7	2.3	1.2	2.5	2.8
REAL RESIDENTIAL NATURAL GAS PRICE (% CHANGE)	1.5	-17.8	-13.2	-11.5	-10.2	5.2	16.1	-3.8
REAL COMMERCIAL NATURAL GAS PRICE (% CHANGE)	1.6	-19.8	-14.5	-12.8	-12.0	6.8	19.5	-4.1

* The forecasts have been updated to reflect the Q2 2014 Economic Outlook.

Witnesses: H. Sayyan
M. Suarez

ECONOMIC OUTLOOK: REGIONS*

CALENDAR YEAR	2008	2009	2010	2011	2012	2013	2014F	2015F
FRANCHISE HOUSING STARTS (000's)	51.1	32.7	38.6	47.9	55.4	42.5	37.7	37.4
GTA								
HOUSING STARTS (000's)	42.7	25.8	30.6	40.5	48.0	34.5	31.4	31.0
SINGLES	12.2	8.4	11.8	12.1	11.8	10.6	10.4	10.7
MULTIPLES	30.5	17.4	18.8	28.5	36.2	23.8	21.0	20.3
CONSUMER PRICES (% CHANGE)	2.4	0.5	2.5	3.0	1.6	1.1	1.9	2.0
EMPLOYMENT GROWTH (% CHANGE)	1.8	-1.7	2.1	2.1	0.8	3.2	1.1	2.4
COMMERCIAL VACANCY RATE (%)	5.4	6.9	7.9	7.0	6.8	7.1	7.1	7.1
INDUSTRIAL VACANCY RATE (%)	5.9	7.0	6.5	6.3	6.1	6.0	6.0	6.0
VINTAGE METRO REGION CENTRAL WEATHER ZONE (% CHANGE)	-1.1	-0.9	-0.8	-0.7	-0.7	-0.7	-0.6	-0.5
VINTAGE WESTERN REGION CENTRAL WEATHER ZONE (% CHANGE)	-2.3	-2.7	-1.6	-1.0	-1.7	-1.7	-1.9	-1.6
VINTAGE CENTRAL REGION CENTRAL WEATHER ZONE (% CHANGE)	-3.6	-2.7	-2.5	-1.3	-1.9	-2.0	-1.9	-1.4
VINTAGE NORTHERN REGION CENTRAL WEATHER ZONE (% CHANGE)	-3.8	-3.5	-2.9	-2.1	-2.6	-2.5	-2.5	-1.8
CENTRAL HEATING DEGREE DAYS**	2919	2922	2659	2856	2388	2879	2679	2691
EASTERN								
HOUSING STARTS (000's)	7.2	6.0	6.6	6.0	6.2	6.7	5.0	5.3
SINGLES	3.1	2.6	2.4	2.2	1.7	1.9	2.0	2.1
MULTIPLES	4.1	3.4	4.2	3.8	4.5	4.8	3.0	3.2
CONSUMER PRICES (% CHANGE)	2.2	0.6	2.5	3.0	1.4	0.9	1.7	2.1
EMPLOYMENT GROWTH (% CHANGE)	4.0	-1.4	1.3	0.1	2.5	-1.3	2.6	2.7
VINTAGE EASTERN WEATHER ZONE (% CHANGE)	-2.7	-2.9	-3.3	-2.9	-2.9	-2.9	-2.6	-1.9
EASTERN HEATING DEGREE DAYS **	3458	3526	3092	3261	3160	3501	3275	3296
NIAGARA								
HOUSING STARTS (000's)	1.3	1.0	1.3	1.3	1.2	1.4	1.3	1.1
SINGLES	0.8	0.7	0.9	0.7	0.7	0.8	0.8	0.7
MULTIPLES	0.5	0.3	0.4	0.6	0.5	0.5	0.5	0.4
EMPLOYMENT GROWTH (% CHANGE)	2.9	-6.0	1.8	2.5	2.7	-3.5	2.1	1.3
VINTAGE NIAGARA WEATHER ZONE (% CHANGE)	-1.1	-1.1	-1.1	-0.7	-0.9	-1.1	-1.1	-1.0
NIAGARA HEATING DEGREE DAYS **	2761	2821	2650	2737	2318	2795	2667	2664

* The forecasts have been updated to reflect the Q2 2014 Economic Outlook.

**Balance Point Heating Degree Days are adjusted for billing cycles. The 2014 and 2015 Degree Day forecasts for all weather zones are generated by the methods approved the Board in its EB-2012-0459 Decision with Reasons dated July 17, 2014.

Witnesses: H. Sayyan
M. Suarez

BUDGET DEGREE DAYS

1. The purpose of this evidence is to provide the forecast of degree days for the 2015 Test Year.

2. The 2015 degree day forecasts were prepared in accordance with the Board's EB-2012-0459 Decision with Reasons dated July 17, 2014. The Board has approved the use of the 50:50 Hybrid method for the Central weather zone, the de Bever with Trend method for the Eastern weather zone and the 10-year moving average method for the Niagara weather zone as proposed by the Company. Table 1 displays 2015 forecasts were generated according to the approved methodology using Environment Canada degree days for each of the three weather zones within its franchise area:

Table 1
2015 Environment Canada Degree Day Forecast

Region	***Methodology***	***Environment Canada Degree Days***
Central	50:50 Hybrid	3,573
Eastern	De Bever with Trend	4,297
Niagara	10-year moving average	3,414

Degree Day Forecast Methodology

3. The degree day forecast for the Central weather zone was prepared using the 50:50 Hybrid method which is an average of the 10-year moving average and the 20-year Trend forecast. Table 2 displays the actual Environment Canada degree day data for the Central weather zone and the resultant 10-year moving average, 20-year Trend, and 50:50 Hybrid forecast. The 10-year moving average is calculated using data covering the period 2004 to 2013[1], while 20-year Trend model is estimated for the period 1994 to 2013. The 20-year Trend model results are provided in Table 3.

[1] The 10 year moving average for year *t* is calculated as $(DD_{t-2}+DD_{t-3}+ \ldots +DD_{t-10}+DD_{t-11})/10$ where DD is the actual degree day value.

Witnesses: H. Sayyan
M. Suarez

Table 2

Environment Canada Degree Day Forecast – Central

Col. 1	*Col. 2*
Calendar Year	Actual[1]
1994	4,115
1995	4,040
1996	4,177
1997	4,026
1998	3,220
1999	3,539
2000	3,826
2001	3,420
2002	3,630
2003	3,982
2004	3,798
2005	3,797
2006	3,378
2007	3,722
2008	3,837
2009	3,836
2010	3,501
2011	3,648
2012	3,215
2013	3,775
2015 Forecast (10-year Moving average)	3,651
2015 Forecast (20-year Trend)[2]	3,496
2015 Forecast (50:50 Hybrid)[3]	3,573

[1]Environment Canada heating degree day observations from Pearson Int't Airport until June 2013. Effective June 13th, 2013 Environment Canada is no longer able to provide degree day data for Pearson Int'l Airport. Data from June 12th, 2013 and thereafter are obtained from the Toronto Int'l A station.

[2]Calculated using the 20-year Trend regression equation from Table 3.

[3]Average of 10-year Moving average and 20-year Trend forecasts.

Table 3
20-Year Trend Forecasting Equation and Test Statistics - Central

Sample: 1994 2013 Included observations: 20

Col. 1	*Col. 2*	*Col. 3*	*Col. 4*	*Col. 5*
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3,932.5690	121.22	32.44	0.000
TREND	-19.8661	10.12	-1.96	0.065
R-squared	0.18	F-statistic	3.85	
Adjusted R-squared	0.13	F-prob	0.07	

Environment Canada Central Degree Day= 3,932.569-19.8661*TREND
The trend variable takes the values of 1 through 20 for each of the years from 1994 to 2013. The value of 22 is used for 2015 to generate 2015 degree day forecast.

4. The degree day forecast for the Eastern weather zone was prepared using the de Bever with Trend method. This method regresses actual Environment Canada degree days on a constant, a five year weighted average of Environment Canada degree days[2] and a trend. The five year weighted averages are lagged two years. Table 4 displays the actual Environment Canada degree day data for the Eastern weather zone and the 5 year weighted averages used to estimate the model. The resultant degree day forecast for 2015 is presented in Table 4 as well. The model is estimated over the period 1950 to 2013 for a total of 64 years which is determined by the cycle length with smallest variance. Estimation results are provided in Table 5.

[2] The five-year weighted average for year *t* is calculated as $(5*DD_{t-2}+4*DD_{t-3}+3*DD_{t-4}+2*DD_{t-5}+DD_{t-6})/15$ where DD is the actual degree day value.

Table 4
Environment Canada Degree Day Forecast – Eastern

Col. 1	*Col. 2*	*Col.3*
Calendar Year	Actual[1]	5-year Weighted MA[2]
1950	4,824	4,665
1951	4,587	4,594
1952	4,404	4,661
1953	4,059	4,641
1954	4,707	4,556
1955	4,689	4,385
1956	4,799	4,465
1957	4,405	4,523
1958	4,736	4,626
1959	4,718	4,584
1960	4,451	4,652
1961	4,586	4,669
1962	4,826	4,596
1963	4,921	4,584
1964	4,569	4,667
1965	4,810	4,753
1966	4,683	4,709
1967	4,882	4,755
1968	4,780	4,735
1969	4,698	4,775
1970	4,899	4,778
1971	4,797	4,762
1972	5,014	4,805
1973	4,420	4,808
1974	4,725	4,876
1975	4,514	4,736
1976	5,008	4,723
1977	4,597	4,637
1978	4,939	4,741
1979	4,589	4,695
1980	4,920	4,790
1981	4,438	4,735
1982	4,647	4,798
1983	4,536	4,674
1984	4,535	4,658
1985	4,659	4,601
1986	4,501	4,570
1987	4,328	4,585
1988	4,640	4,564
1989	4,931	4,482
1990	4,250	4,524
1991	4,303	4,657
1992	4,861	4,537
1993	4,780	4,461
1994	4,730	4,585
1995	4,585	4,646
1996	4,603	4,681
1997	4,786	4,680
1998	3,828	4,664
1999	4,137	4,689
2000	4,543	4,399
2001	4,115	4,276
2002	4,381	4,328
2003	4,715	4,240
2004	4,637	4,273
2005	4,421	4,444
2006	4,037	4,531
2007	4,447	4,511
2008	4,488	4,373
2009	4,534	4,376
2010	3,973	4,388
2011	4,144	4,430
2012	4,055	4,293
2013	4,402	4,242
2015 Forecast (de Bever with Trend	4,297	

[1]Environment Canada heating degree day observations from MacDonald-Cartier Airport until December 2011. Effective December 15th, 2011, Environment Canada is no longer able to provide degree day data for MacDonald-Cartier Airport. Data from December 15th, 2011 and thereafter are obtained from the Ottawa Int'l A station.

[2]5-year weighted average lagged 2 years.

[3]Calculated using the de Bever with Trend regression equation from Table 5.

Table 5
de Bever with Trend Equation and Test Statistics - Eastern

Sample: 1950 2013 Included observations: 64

Col. 1	*Col. 2*	*Col. 3*	*Col. 4*	*Col. 5*
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3,440.1040	1,104.26	3.12	0.00
ECEDD5WA	0.2816	0.23	1.21	0.23
TREND	-4.9993	1.96	-2.55	0.01
R-squared	0.21	F-statistic	7.95	
Adjusted R-squared	0.18	F-prob	0.00	

Environment Canada Eastern Degree Day= 3,440.104+0.2816*ECEDD5WA-4.9993*TREND
5-year weighted average of 4,209.4 is used for 2015 to generate 2015 degree day forecast.
Trend variables takes 1-64 for the period of 1950-2013. 66 is used for 2015 to generate 2015 degree day forecast.

5. The degree day forecast for the Niagara weather zone was prepared using the 10-year moving average method. Table 6 displays the actual Environment Canada degree day data for the Niagara weather zone and the resultant degree day forecast which is calculated using data covering the period 2004 to 2013[3].

[3] The 10 year moving average for year *t* is calculated as (DD_{t-2}+DD_{t-3}+ … +DD_{t-10}+DD_{t-11})/10 where DD is the actual degree day value.

Table 6
Environment Canada Degree Day Forecast – Niagara

Col. 1	*Col. 2*
Calendar Year	Actual[1]
1994	3,780
1995	3,703
1996	3,786
1997	3,669
1998	2,980
1999	3,338
2000	3,596
2001	3,239
2002	3,415
2003	3,799
2004	3,632
2005	3,653
2006	3,163
2007	3,296
2008	3,480
2009	3,565
2010	3,344
2011	3,458
2012	3,021
2013	3,527
2015 Forecast (10-yr Moving average)	3,414

[1]Environment Canada heating degree day observations from St. Catherines Airport until August 2008. Effective September 2008 Environment Canada is no longer able to provide degree day data for St.Catherines Airport. Data from September 2008 and thereafter are obtained from the Vineland Climate Station.

Gas Supply Degree Day Conversion

6. The final step in the degree day forecast involves the conversion of Environment Canada degree days to Gas Supply degree days. This conversion is done by regressing actual Gas Supply degree days onto actual Environment Canada degree days. The resultant equation (one for each weather zone) is used to convert the Environment Canada degree day forecast to the Gas Supply degree day forecast. Tables 7, 8 and 9 display actual Environment Canada degree days, actual Gas Supply degree days and the resultant Gas Supply degree day forecasts for the 2015 Test Year. Each conversion model uses a sample that is consistent with the sample period used to generate the forecasts as shown in each of Table 3, Table 5, and the last ten years for Niagara except in instances where no data are available.

Table 7
Determination of Gas Supply Equivalent Degree Days - Central

Col. 1	*Col. 2*	*Col. 3*
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
1994	4,115	4,084
1995	4,040	3,991
1996	4,177	4,133
1997	4,026	3,966
1998	3,220	3,202
1999	3,539	3,497
2000	3,826	3,784
2001	3,420	3,400
2002	3,630	3,597
2003	3,982	3,949
2004	3,798	3,766
2005	3,797	3,750
2006	3,378	3,355
2007	3,722	3,659
2008	3,837	3,801
2009	3,836	3,767
2010	3,501	3,466
2011	3,648	3,597
2012	3,215	3,194
2013	3,775	3,746
2015 Forecast (10-year Moving average)[1]		3,610
2015 Forecast (20-year Trend)[2]		3,463
2015 Forecast (50:50 Hybrid)[3]		3,536

[1]2015 forecast (10-year Moving average) is calculated using the following regression equation:
Gas Supply degree day =115.4613+0.95728*(Environment Canada degree day)
R-squared=0.995788, Adjusted R-squared=0.995262, F-statistic=1891.510, Prob(F-statistic)=0.000000

[2]2015 forecast (20-year Trend) is calculated using the following regression equation:
Gas Supply degree day =62.14518+0.972880*(Environment Canada degree day)
R-squared=0.998008, Adjusted R-squared=0.997897, F-statistic=9016.540, Prob(F-statistic)=0.000000

[3]2015 forecast (50:50 Hybrid) is an average of 10-year Moving average and 20-year Trend.

Witnesses: H. Sayyan
M. Suarez

Table 8
Determination of Gas Supply Equivalent Degree Days - Eastern

Col. 1	*Col. 2*	*Col. 3*
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
1970	4,899	5,018
1971	4,797	4,584
1972	5,014	4,816
1973	4,420	4,480
1974	4,725	4,858
1975	4,514	4,229
1976	5,008	4,901
1977	4,597	4,604
1978	4,939	4,920
1979	4,589	4,550
1980	4,920	4,853
1981	4,438	4,361
1982	4,647	4,617
1983	4,536	4,515
1984	4,535	4,504
1985	4,659	4,648
1986	4,501	4,507
1987	4,328	4,268
1988	4,640	4,601
1989	4,931	4,883
1990	4,250	4,225
1991	4,303	4,270
1992	4,861	4,746
1993	4,780	4,715
1994	4,730	4,700
1995	4,585	4,530
1996	4,603	4,561
1997	4,786	4,711
1998	3,828	3,802
1999	4,137	4,112
2000	4,543	4,506
2001	4,115	4,071
2002	4,381	4,317
2003	4,715	4,663
2004	4,637	4,598
2005	4,421	4,397
2006	4,037	4,012
2007	4,447	4,411
2008	4,488	4,431
2009	4,534	4,472
2010	3,973	3,947
2011	4,144	4,108
2012	4,055	4,048
2013	4,402	4,484
2015 Forecast[1]		4,267

[1]2015 forecast is calculated using the following regression equation:
Gas Supply degree days = 171.053+0.953058*(Environment Canada degree days)
R-squared=0.938531 Adjusted R-squared=0.937067 F-statistic=641.2714 Prob(F-statistic)=0.000000

Witnesses: H. Sayyan
M. Suarez

Table 9
Determination of Gas Supply Equivalent Degree Days - Niagara

Col. 1	*Col. 2*	*Col. 3*
Calendar Year	Actual Environment Canada Degree Days	Actual Gas Supply Degree Days
2004	3,632	3,485
2005	3,653	3,580
2006	3,163	3,079
2007	3,296	3,349
2008	3,480	3,510
2009	3,565	3,547
2010	3,344	3,322
2011	3,458	3,334
2012	3,021	3,013
2013	3,527	3,537
2015 Forecast[1]		3,376

[1]2015 forecast is calculated using the following regression equation:
Gas Supply degree days = 275.2115+0.908227*(Environment Canada degree days)
R-squared=0.896952 Adjusted R-squared=0.884071 F-statistic=69.63347 Prob(F-statistic)=0.000032

Summary of Forecast

Table 10
Summary of 2015 Degree Days Forecast

Region	***Environment Canada Degree Days***	***Gas Supply Degree Days***
Central	3,573	3,536
Eastern	4,297	4,267
Niagara	3,414	3,376

Witnesses: H. Sayyan
M. Suarez

AVERAGE USE FORECASTING MODEL

1. The purpose of this evidence is to present the forecasting methodology used to forecast average use for Rate 1 revenue class 20 and Rate 6 revenue classes 12, 48 and 73[1]. Rate 1 is the Company's residential rate class while Rate 6 is the Company's small apartment, commercial and industrial rate class. Revenue class 20 is forecast to comprise 87% of Rate 1 volumes while revenue classes 12, 48 and 73 are forecast to collectively comprise 91% of Rate 6 volumes in 2015. The forecasting methodology for the other revenue classes in Rate 1 and Rate 6 are very similar to the models presented in this exhibit.

2. The Company moved to a more objective forecasting methodology starting in the 2001 Budget Year in order to address the Board's concern with the systematic bias attributed to the grassroots forecasting process. This forecasting methodology would remove systematic or subjective bias by developing regression models to forecast average use for the Company's Rate 1 general service customers and Rate 6 general service customers. This econometric methodology has been in place since 2001, the forecasts of which have been accepted in settlement proposals and Board decisions since. As shown in Tables 1 to 3, 5 and 8, the models exhibit a high R^2 and low Root Mean Squared Percentage Error ("RMSPE") indicating that each of the regression models is a good predictor of average use.

[1] Rate 1 is comprised of: revenue class 10 - residential heating, revenue class 20 - residential space heating and water heating, revenue class 50 - space heating, water heating and pool heating, revenue class 60 – residential general service and revenue class 61 – residential water heating. Rate 6 is comprised of: revenue class 12 – apartment heating and other uses, revenue class 48 commercial heating and other uses, revenue class 73 industrial heating and other uses, revenue class 79 commercial general service, revenue class 83 – industrial general service, revenue class 86 – apartment general service, revenue class 90 – commercial air conditioning and space heating.

Witnesses: H. Sayyan
M. Suarez

3. The year-over-year growth rates in average use for all revenue classes are used as the basis for the average use forecast for Rate 1 and Rate 6 as shown at Exhibit C1, Tab 2, Schedule 1, Appendix A. Factors influencing overall average use include new customers (both new construction and replacement customers), the timing of new customer additions to the system, rate migration, gas prices, economic conditions, other external policy changes (e.g., Building Code), and the Company's DSM programs. While average use changes for Rate 1 are fairly reflective of regression model results because of the homogenous nature of customers within this class, modeled Rate 6 average uses may be adjusted to account for known rate migration or specific changes in usage patterns for customers within this class. Please refer to Exhibit C1, Tab 2, Schedule 1 for a detailed explanation of the derivation of the Company's gas volume budget.

4. Average use is defined as gas volume per unlock customer. The econometric models presented here utilize historical data and relationships to estimate driver variables and derive a top down forecast of average use. The models presented in the exhibit incorporate updated driver variables and historical data obtained from federal and provincial statistical agencies and the Company's database. Maintaining an econometric model is an ongoing process; consequently, the models must be monitored and refined to ensure they are valid and produce accurate forecasts of general service average use.

Error Correction Model

5. The Company uses the Error Correction Model ("ECM") to forecast the average use for Rate 1 and Rate 6. The Error Correction Model and the two step estimation procedure are described more fully in Engle and Granger (1987).[2] The ECM

[2] Engle, R.F. and Granger, C.W.J (1987), "Cointegration and Error Correction: Representation, Estimation and Testing," *Econometrica*, Vol. 55, No.2.

uses the concept of co-integration or long-run association between variables. In other words, variables hypothesized to be linked by some theoretical economic relationship should not diverge from each other in the long run. Such variables may drift apart in the short run; however, if they were to diverge without bound, an equilibrium relationship among such variables could not be said to exist. The ECM methodology has been used extensively in the energy field for modeling electricity sales[3] and natural gas prices[4].

6. The major difference between the ECM approach and the standard dynamic single-equation model is the ECM approach explicitly takes into account both long-run equilibrium and short-run dynamic relationships in the determination of average use. It is known that economic theory can provide useful information about the variables relevant in the long-run. However, it is relatively silent on the short-run dynamics between variables. The ECM approach allows the historical data to determine the lag structures and short run dynamics.

7. The estimated models are used to generate a normalized forecast of average use. The main purpose of the normalized forecast is to derive average use such that the weather impact has been taken out. Using the estimated coefficients, weather normalized average use data are obtained by replacing actual degree days in the model with proposed degree days for 2015 for every year so that year-to-year percentage changes reflect the pure average use trend by eliminating weather variability.

[3] Engle, R.F., Granger, C.W.J. and Hallman, J.J. (1989), "Merging Short- and Long-Run Forecasts: An Application to Monthly Electricity Sales Forecasting," *Journal of Econometrics*, Vol.40.
[4] Bopp, A.E. (1990), "An Analytical Approach to Forecasting Natural Gas Prices," *AGA Forecasting Review*: American Gas Association.

Average Use Forecasting Methodology

8. The model's specification is based on an objective criterion: to minimize both in-sample and out-of-sample forecast error. The discrepancy between actual average use and the model's forecast can be segregated into three major sources of uncertainty: (1) model specification, (2) forecast error from the driver variables used in the model, and (3) unexpected shocks or structural breaks. Sources (2) and (3) are not within the Company's control and will inevitably occur regardless of which forecasting methodology is adopted. Therefore the objective of the modeling procedure, described below, is to minimize the controllable source of error, the model's specification.

9. The main criteria for assessing the model's predictive ability is the model's forecast accuracy. A comparison of actual un-normalized average use versus the forecasts produced by the model is used to assess predictive ability. Forecast accuracy for the 2015 Test Year is measured using both in-sample and out-of-sample Mean Percentage Error ("MPE") and RMSPE. In-sample, or ex-post, means that the estimated model incorporates the entire sample, in this case 1985 to 2013. Out-of-sample, or ex-ante, means that the model incorporates only a portion of the sample, in this case 1985 to 2011. Forecasts of average use are produced under both approaches and measured against actual average use from 2012 to 2013 quantitatively via MPE and RMSPE. A two year "hold out" sample is used to compute the out-of-sample forecast accuracy statistics since the forecasting horizon for volumetric budgeting purposes is two years.

10. Table 1 presents the forecast accuracy statistics for Rate 1 and Rate 6. The smaller the MPE and RMSPE, the better the model's forecast performance.

TABLE 1
FORECAST ERRORS - PERCENT VARIANCE & ROOT MEAN SQUARED PERCENTAGE ERROR

Col 1.	Col 2.	Col 3.
Forecast Error Method	Rate 1	Rate 6
In-Sample % Variance (2 Years)	0.39%	1.36%
In-Sample RMSPE (2 Years)	0.55%	1.49%
Out-of-Sample % Variance (2 Years)	1.26%	2.38%
Out-of-Sample RMSPE (2 Years)	1.41%	2.54%

$$MPE = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{Forecast_i - Actual_i}{Actual_i}\right)$$

11. Consistent with the settlement of Issue 1.1 in the RP-2000-0040 Settlement Agreement, Tables 2 and 3 report the results that the models would generate using actual data to allow parties to compare results to the prior year's forecast. Tables 2 and 3 show the results that the models would have produced had all actual data been available at the time the forecast was produced. The tables are not updated for 2004 since there are no Board approved average use forecasts for this particular test year. In order to compare the variance between actual and Board Approved average use on the same basis, the actual results for each year have been normalized to the corresponding Board Approved degree days for each respective test year. The results in Tables 2 and 3 show the regression model is a good predictor of general service average use.

Witnesses: H. Sayyan
M. Suarez

TABLE 2

RATE 1 IN-SAMPLE FORECAST COMPARISON

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.
Fiscal Year	Actual Normalized Average Use Per Customer	Board Approved Normalized Average Use Per Customer[1,3]	Variance Normalized Average Use Per Customer	% Variance Normalized Average Use Per Customer	Model's Normalized Average Use Per Customer[2]	Variance Normalized Average Use Per Customer	% Variance Normalized Average Use Per Customer
	(m3)	m(3)	(2-3)	100*((2-3)/3)	(m3)	(2-6)	100*((2-6)/6)
2001	3,014	3,044	(30)	-1.0%	3,022	(8)	-0.26%
2002	2,980	2,970	10	0.3%	2,963	17	0.57%
2003	2,877	2,892	(15)	-0.5%	2,897	(20)	-0.69%
2004	2,843	n/a	n/a	n/a	2,864	(21)	-0.73%
2005	2,890	2,953	(63)	-2.1%	2,929	(39)	-1.33%
2006	2,796	2,850	(54)	-1.9%	2,816	(20)	-0.71%
2007	2,726	2,687	39	1.5%	2,695	31	1.15%
2008	2,636	2,647	(11)	-0.4%	2,611	25	0.97%
2009	2,616	2,637	(21)	-0.8%	2,623	(6)	-0.24%
2010	2,579	2,622	(43)	-1.6%	2,550	29	1.15%
2011	2,594	2,643	(49)	-1.9%	2,607	(13)	-0.51%
2012	2,529	2,510	18	0.7%	2,528	1	0.02%
2013	2,547	2,568	(22)	-0.8%	2,517	30	1.18%

[1]Board approved normalized average use from RP-2000-0040, RP-2001-0032, RP-2002-0133, RP-2003-0203, EB-2005-000, EB-2006-0034, EB-2007-0615, EB-2008-0219, EB-2009-0172, EB-2010-0146, EB-2011-0277 and EB-2011-0354 for 2001, 2002, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011,2012 and 2013 respectively.

[2]Model's normalized average use is generated by running the model using actual data and driver variable information.

[3]There is no Board approved normalized average use for 2004.

TABLE 3
RATE 6 IN-SAMPLE FORECAST COMPARISON

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.
Fiscal Year	Actual Normalized Average Use Per Customer	Board Approved Normalized Average Use Per Customer[1,3]	Variance Normalized Average Use Per Customer	% Variance Normalized Average Use Per Customer	Model's Normalized Average Use Per Customer[2]	Variance Normalized Average Use Per Customer	% Variance Normalized Average Use Per Customer
	(m3)	m(3)	(2-3)	100*((2-3)/3)	(m3)	(2-6)	100*((2-6)/6)
2001	22,510	22,643	(133)	-0.6%	22,706	(196)	-0.86%
2002	22,097	22,125	(28)	-0.1%	21,957	140	0.64%
2003	21,593	21,685	(92)	-0.4%	21,613	(20)	-0.09%
2004	21,472	n/a	n/a	n/a	21,377	95	0.44%
2005	22,241	22,507	(266)	-1.2%	22,334	(93)	-0.42%
2006	22,272	21,999	273	1.2%	22,149	123	0.55%
2007	22,783	21,010	1773	8.4%	22,973	(190)	-0.83%
2008	24,869	24,204	665	2.7%	25,273	(404)	-1.60%
2009	27,654	28,165	(512)	-1.8%	27,875	(222)	-0.79%
2010	29,106	27,949	1157	4.1%	29,691	(585)	-1.97%
2011	29,471	28,029	1442	5.1%	30,240	(769)	-2.54%
2012	28,941	30,122	(1182)	-3.9%	28,634	307	1.07%
2013	29,203	29,878	(675)	-2.3%	28,756	447	1.56%

[1]Board approved normalized average use from RP-2000-0040, RP-2001-0032, RP-2002-0133, RP-2003-0203, EB-2005-000, EB-2006-0034, EB-2007-0615, EB-2008-0219, EB-2009-0172, EB-2010-0146, EB-2011-0277 and EB-2011-0354 for 2001, 2002, 2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011,2012 and 2013 respectively.

[2]Model's normalized average use is generated by running the model using actual data and driver variable information.

[3]There is no Board approved normalized average use for 2004.

12. The primary goal of the average use forecast is to be accurate and objective. Ideally, the forecast error should be small in magnitude and distributed in a random fashion. Although the forecast errors in Tables 1, 2, and 3 are small in magnitude, forecast accuracy is conditional on driver variable forecast accuracy and the absence of any structural break between the historical period and the upcoming forecast period. Consequently, besides testing forecast accuracy, the models were subjected to a battery of diagnostic tests. These tests were run on the model to check for incorrect functional forms, parameter instability, structural breaks, omitted variables and randomness of residuals. Overall the models have been thoroughly tested and are statistically valid. The following diagnostic tests were run on each model (results are shown in Tables 6 and 9):

Breusch-Godfrey Serial Correlation LM Test[5]

This test is used to test for autocorrelation in the residuals. Autocorrelation occurs when disturbances in a regression equation are serially correlated. The test is set up as follows:

Null Hypothesis: No serial correlation

Alternative Hypothesis: Serial correlation

ARCH Test

This test is used to test for Autoregressive Conditional Heteroskedasticity ("ARCH"). ARCH occurs when the variance of disturbances in a regression equation are not constant and are serially correlated. The test is set up as follows:

Null Hypothesis: No ARCH

Alternative Hypothesis: ARCH

Chow Forecast Test

This test is used to test for stability of a regression model. A regression model is not stable if the estimated coefficients change (and consequently the model's predictions) when estimated over various sample ranges. The test is set up as follows:

Null Hypothesis: No structural change

Alternative Hypothesis: Structural change

[5] The Durbin-Watson test is not used since it is not valid when there are lagged dependent variables in a regression equation. The Durbin Watson test is biased toward the finding of no serial correlation if there are lagged values of the dependent variable in the regression equation.

Ramsey RESET Test

This is a general test which tests for omitted variables, incorrect functional form and correlation between the independent variables and disturbances. The test is set up as follows:

Null Hypothesis: Normally distributed disturbances (zero mean, constant variance)

Alternative Hypothesis: Non- normally distributed disturbances (non-zero mean, constant variance)

13. The following tables present the mnemonics used in the models (Tables 4 and 7), the regression equations for each model (Tables 5 and 8), and the diagnostic tests results run on the models (Tables 6 and 9). For the t tests in the regression equations, the p-values in Tables 5 and 8 show the probability of obtaining a forecast at least as extreme as one that was actually observed, assuming that the null hypothesis (coefficient is not significant) is true. The p-value is compared to a significance level which is often 0.05 or 0.10, so that if its value is smaller, the null hypothesis is rejected at the 95% or 90% confidence level, respectively. The smaller the p-value, the more strongly the test rejects the null hypothesis, thereby supporting the statistical significance of the coefficient. In any instance where insignificant variables were retained within the models, it was for the purposes of (1) improving the significance of other coefficients or (2) optimizing forecast accuracy. For the diagnostic test results shown in Tables 6 and 9, the null hypotheses tested are the desired outcomes. In each case, to support the null hypothesis, p-values in excess of 0.10 are preferred. Overall, diagnostic test results in Table 6 and 9 show that the models in Table 5 and 8 are statistically valid and no assumptions appear to be violated at the 95% confidence level.

TABLE 4 - RATE 1 MODEL MNEMONICS

Mnemonic	Definition
C	Constant Term
LOG(X)	Logarithm of Variable X
DLOG(X)	$LOG(X_t) - LOG(X_{t-1})$, First Difference of Logarithm of Variable X
CDD, EDD, NDD	Balance Point Heating Degree Days for Central, Eastern and Niagara Weather Zones
MET20VINT	Vintage Variable for the Metro Region, Central Weather Zone
WES20VINT	Vintage Variable for the Western Region, Central Weather Zone
CEN20VINT	Vintage Variable for the Central Region, Central Weather Zone
NOR20VINT	Vintage Variable for the Northern Region, Central Weather Zone
ERC20VINT	Vintage Variable for the Eastern Weather Zone
NRC20VINT	Vintage Variable for the Niagara Weather Zone
REALCRCRPG	Real Residential Natural Gas Price for the Central Weather Zone
REALERCRPG	Real Residential Natural Gas Price for the Eastern Weather Zone
DUM2008-DUM2009-DUM2010	Dummy Variables for Recession Impact
CENTEMP	Central Weather Zone Employment
ECM_Region	Error Correction Term for Each Region

Witnesses: H. Sayyan
M. Suarez

TABLE 5 - RATE 1 REVENUE CLASS 20 REGRESSION EQUATIONS

Metro Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.59	8.45	0.00
LOG(CDD)	0.70	18.42	0.00
LOG(REALCRCRPG)	-0.03	-2.00	0.06
LOG(MET20VINT)	0.74	11.34	0.00
DUM2008	-0.05	-4.02	0.00
DUM2010	-0.04	-2.83	0.01
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.01		
F-statistic	487.49		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	0.02	0.99
DLOG(CDD)	0.74	28.30	0.00
DLOG(MET20VINT)	0.90	1.76	0.09
DUM2008	-0.01	-1.51	0.14
ECM_MET20(-1)	-0.34	-1.60	0.12
R-squared	0.98		
Adjusted R-squared	0.97		
S.E. of regression	0.01		
F-statistic	238.11		0.00

Western Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.88	1.18	0.25
LOG(CDD)	0.70	24.47	0.00
LOG(REALCRCRPG)	-0.09	-6.53	0.00
LOG(WES20VINT)	0.38	6.14	0.00
LOG(CENTEMP)	0.19	2.29	0.03
DUM2008	-0.04	-4.47	0.00
DUM2010	-0.05	-4.43	0.00
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.01		
F-statistic	648.80		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	-2.22	0.04
DLOG(CDD)	0.72	37.20	0.00
DLOG(REALCRCRPG)	-0.08	-4.62	0.00
DUM2008	-0.01	-2.75	0.01
ECM_WES20(-1)	-0.67	-2.95	0.01
R-squared	0.98		
Adjusted R-squared	0.98		
S.E. of regression	0.01		
F-statistic	366.59		0.00

Central Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.62	0.69	0.50
LOG(CDD)	0.72	17.59	0.00
LOG(REALCRCRPG)	-0.03	-2.01	0.06
LOG(CEN20VINT)	0.47	7.69	0.00
LOG(CENTEMP)	0.21	2.21	0.04
DUM2008	-0.06	-5.10	0.00
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.02		
F-statistic	456.61		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	0.30	0.76
DLOG(CDD)	0.70	26.08	0.00
DLOG(REALCRCRPG)	-0.04	-1.67	0.11
DUM2008	-0.01	-1.69	0.11
DLOG(CEN20VINT)	0.37	1.89	0.07
ECM_CEN20(-1)	-0.85	-3.87	0.00
R-squared	0.97		
Adjusted R-squared	0.97		
S.E. of regression	0.01		
F-statistic	154.33		0.00

Northern Region - Central Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.63	0.73	0.48
LOG(CDD)	0.70	20.91	0.00
LOG(REALCRCRPG)	-0.08	-5.15	0.00
LOG(NOR20VINT)	0.42	7.89	0.00
LOG(CENTEMP)	0.24	2.43	0.02
DUM2009	-0.06	-5.61	0.00
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.01		
F-statistic	777.77		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	-0.36	0.72
DLOG(CDD)	0.68	27.82	0.00
DLOG(REALCRCRPG)	-0.06	-2.46	0.02
DLOG(NOR20VINT)	0.26	1.60	0.12
ECM_NOR20(-1)	-0.99	-4.15	0.00
R-squared	0.97		
Adjusted R-squared	0.97		
S.E. of regression	0.01		
F-statistic	209.73		0.00

Eastern Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	1.61	4.50	0.00
LOG(EDD)	0.78	17.88	0.00
LOG(REALERCRPG)	-0.04	-2.29	0.03
LOG(ERC20VINT)	0.38	17.52	0.00
DUM2009	-0.05	-4.62	0.00
R-squared	0.99		
Adjusted R-squared	0.99		
S.E. of regression	0.01		
F-statistic	686.02		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.01	-2.71	0.01
DLOG(EDD)	0.78	23.56	0.00
DLOG(REALERCRPG)	-0.03	-1.08	0.29
DUM2008	-0.01	-2.08	0.05
ECM_ERC20(-1)	-0.92	-3.99	0.00
R-squared	0.97		
Adjusted R-squared	0.96		
S.E. of regression	0.01		
F-statistic	174.09		0.00

Niagara Weather Zone

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	2.39	5.76	0.00
LOG(NDD)	0.71	13.67	0.00
LOG(NRC20VINT)	1.13	17.17	0.00
DUM2008	-0.06	-4.42	0.00
R-squared	0.98		
Adjusted R-squared	0.98		
S.E. of regression	0.02		
F-statistic	522.82		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.01	-4.21	0.00
DLOG(NDD)	0.72	23.28	0.00
ECM_NRC20(-1)	-0.59	-3.39	0.00
R-squared	0.96		
Adjusted R-squared	0.96		
S.E. of regression	0.02		
F-statistic	306.63		0.00

Witnesses: H. Sayyan
M. Suarez

TABLE 6 - RATE 1

Model Diagnostic Tests

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.
Test		Metro Region	Western Region	Central Region	Northern Region	Eastern Weather Zone	Niagara Weather Zone
Breusch-Godfrey Serial Correlation LM Test	Test Statistic	0.80	0.37	0.38	0.19	0.45	0.57
	P Value	0.37	0.54	0.54	0.66	0.50	0.45
ARCH Test	Test Statistic	0.42	1.96	0.70	0.00	0.00	0.69
	P Value	0.52	0.16	0.40	0.98	0.99	0.41
Chow Forecast Test: Forecast from 2013 to 2013	Test Statistic	0.75	0.08	0.50	1.35	0.18	0.70
	P Value	0.40	0.78	0.49	0.26	0.67	0.41
Ramsey RESET Test	Test Statistic	0.34	0.89	0.31	0.04	1.91	0.04
	P Value	0.56	0.36	0.58	0.85	0.18	0.84

Witnesses: H. Sayyan
M. Suarez

TABLE 7 - RATE 6 MODEL MNEMONICS

Mnemonic	Definition
C	Constant Term
LOG(X)	Logarithm of Variable X
DLOG(X)	$LOG(X_t) - LOG(X_{t-1})$, First Difference of Logarithm of Variable X
CDD, EDD, NDD	Balance Point Heating Degree Days for Central, Eastern and Niagara Weather Zones
CENTEMP	Central Weather Zone Employment
EASTEMP	Eastern Weather Zone Employment
NIAGEMP	Niagara Weather Zone Employment
REALERCCPG	Real Commercial Gas Price for the Eastern Weather Zone
REALNRCCPG	Real Natural Gas Price for the Niagara Weather Zone
ONTGDP	Ontario Real Gross Domestic Product
CRCCOMVAC	GTA Commercial Vacancy Rate
TIME	Time Trend
DUMRegion	Dummy Variable for Migration Impact
DUMXXXX	Dummy Variable for the Break in the Year XXXX
AR(p)	pth-order Autoregressive Process Term
ECM_Region	Error Correction Term for Each Region

Witnesses: H. Sayyan
M. Suarez

TABLE 8 - RATE 6 REVENUE CLASS 12 REGRESSION EQUATIONS

Central Revenue Class 12 (Apartment)

Single Equation Model

Variable	Coefficient	t-Statistic	p-Value
C	1.91	1.83	0.08
LOG(CDD)	0.65	6.92	0.00
LOG(CENTEMP)	0.56	8.07	0.00
DUM1996	-0.09	-5.02	0.00
DUMCRC12	0.23	7.73	0.00
AR(4)	-0.63	-2.89	0.01
R-squared	0.97		
Adjusted R-squared	0.96		
S.E. of regression	0.04		
F-statistic	113.085		0.00

Eastern Revenue Class 12 (Apartment)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	7.24	14.41	0.00
LOG(EDD)	0.45	7.38	0.00
LOG(TIME)	-0.03	-5.50	0.00
DUMERC12	0.32	28.42	0.00
DUM2011	-0.10	-6.33	0.00
LOG(REALERCCPG)	-0.03	-2.52	0.02
AR(1)	-0.49	-2.45	0.02
R-squared	0.96		
Adjusted R-squared	0.95		
S.E. of regression	0.02		
F-statistic	91.58		0.00

Niagara Revenue Class 12 (Apartment)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	3.53	2.98	0.01
LOG(NDD)	0.62	8.44	0.00
LOG(TIME)	-0.03	-3.31	0.00
LOG(NIAGEMP)	0.42	2.82	0.01
LOG(REALNRCCPG)	-0.07	-2.28	0.03
DUMNRC12	-0.07	-5.15	0.00
DUM2011	-0.09	-4.04	0.00
AR(1)	-0.49	-2.34	0.03
R-squared	0.91		
Adjusted R-squared	0.88		
S.E. of regression	0.03		
F-statistic	28.51		0.00

Witnesses: H. Sayyan
M. Suarez

TABLE 8 CONTINUED - RATE 6 REVENUE CLASS 48 REGRESSION EQUATIONS

Central Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.37	0.41	0.69
LOG(CDD)	0.83	15.00	0.00
LOG(TIME)	-0.12	-8.67	0.00
LOG(CRCCOMVAC)	-0.07	-4.22	0.00
LOG(ONTGDP)	0.25	4.04	0.00
DUMCRC48	0.11	9.40	0.00
R-squared	0.96		
Adjusted R-squared	0.96		
S.E. of regression	0.02		
F-statistic	123.22		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	0.14	0.89
DLOG(CDD)	0.82	29.45	0.00
DLOG(TIME)	-0.06	-3.02	0.01
DLOG(CRCCOMVAC)	-0.05	-3.84	0.00
DUMCRC48	0.02	2.66	0.01
ECM_CRC48(-1)	-0.82	-5.32	0.00
R-squared	0.98		
Adjusted R-squared	0.97		
S.E. of regression	0.01		
F-statistic	175.91		0.00

Eastern Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	1.96	1.85	0.08
LOG(EDD)	0.73	9.14	0.00
LOG(TIME)	-0.16	-12.16	0.00
LOG(ONTGDP)	0.18	3.31	0.00
DUMERC48	0.10	4.87	0.00
DUM2010	0.11	4.82	0.00
R-squared	0.96		
Adjusted R-squared	0.95		
S.E. of regression	0.02		
F-statistic	106.60		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.01	1.05	0.30
DLOG(EDD)	0.70	8.75	0.00
DLOG(TIME)	-0.13	-2.68	0.01
ECM_ERC48(-1)	-0.72	-2.39	0.02
R-squared	0.80		
Adjusted R-squared	0.78		
S.E. of regression	0.03		
F-statistic	32.62		0.00

Niagara Revenue Class 48 (Commercial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-1.23	-0.79	0.44
LOG(NDD)	0.71	12.20	0.00
LOG(TIME)	-0.09	-4.81	0.00
LOG(REALNRCCPG)	-0.18	-4.55	0.00
LOG(ONTGDP)	0.41	3.85	0.00
DUMNRC48	0.11	4.58	0.00
DUM2010	-0.11	-3.70	0.00
R-squared	0.92		
Adjusted R-squared	0.90		
S.E. of regression	0.02		
F-statistic	41.93		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	0.00	-0.35	0.73
DLOG(NDD)	0.74	12.52	0.00
DUMNRC48	0.11	3.31	0.00
DUM2010	-0.12	-3.48	0.00
DLOG(REALNRCCPG)	-0.08	-1.66	0.11
ECM_NRC48(-1)	-0.86	-2.61	0.02
R-squared	0.91		
Adjusted R-squared	0.89		
S.E. of regression	0.03		
F-statistic	44.05		0.00

TABLE 8 CONTINUED - RATE 6 REVENUE CLASS 73 REGRESSION EQUATIONS

Central Revenue Class 73 (Industrial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	4.05	1.38	0.18
LOG(CDD)	0.30	1.55	0.13
LOG(TIME)	-0.14	-3.70	0.00
LOG(ONTGDP)	0.37	2.30	0.03
DUMCRC73	0.49	12.04	0.00
R-squared	0.90		
Adjusted R-squared	0.88		
S.E. of regression	0.07		
F-statistic	52.92		0.00

Short Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-0.02	-2.22	0.04
DLOG(CDD)	0.48	7.24	0.00
DLOG(ONTGDP)	0.69	2.34	0.03
DUMCRC73	0.25	6.69	0.00
DUM2009	-0.18	-4.58	0.00
ECM_CRC73(-1)	-0.65	-5.97	0.00
R-squared	0.87		
Adjusted R-squared	0.84		
S.E. of regression	0.03		
F-statistic	29.32		0.00

Eastern Revenue Class 73 (Industrial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-287,443.40	-4.31	0.00
EDD	18.73	1.71	0.10
DUM2003	63,300.02	4.93	0.00
DUM2004	-163,364.80	-9.88	0.00
DUMERC73	113,386.30	13.84	0.00
EASTEMP	732.64	7.15	0.00
TIME	-6,409.73	-7.68	0.00
R-squared	0.96		
Adjusted R-squared	0.95		
S.E. of regression	11,502.94		
F-statistic	98.18		0.00

Niagara Revenue Class 73 (Industrial)

Long Run Equation

Variable	Coefficient	t-Statistic	p-Value
C	-1.36	-0.35	0.73
LOG(NDD)	0.79	3.22	0.00
DUM2002	-0.36	-3.99	0.00
DUM2007	0.47	4.21	0.00
DUM2010	0.39	3.44	0.00
LOG(NIAGEMP)	1.24	2.27	0.03
AR(1)	0.65	3.42	0.00
R-squared	0.95		
Adjusted R-squared	0.94		
S.E. of regression	0.11		
F-statistic	68.13		0.00

TABLE 9-RATE 6
Model Diagnostic Tests

Col 1.	Col 2.	Col 3.	Col 4.	Col 5.	Col 6.	Col 7.	Col 8.	Col 9.	Col 10.	Col 11.
		Revenue Class 12 (Apartment) Model Diagnostic Tests			**Revenue Class 48 (Commercial) Model Diagnostic Tests**			**Revenue Class 73 (Industrial) Model Diagnostic Tests**		
Test		Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone	Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone	Central Weather Zone	Eastern Weather Zone	Niagara Weather Zone
Breusch-Godfrey Serial Correlation LM Test	Test Statistic	2.17	0.87	1.57	0.98	2.30	0.74	1.76	2.26	2.35
	P Value	0.14	0.35	0.21	0.32	0.13	0.39	0.19	0.13	0.13
ARCH Test	Test Statistic	0.09	0.01	0.07	0.89	0.01	3.99	0.80	0.42	1.18
	P Value	0.76	0.92	0.79	0.34	0.92	0.06	0.37	0.52	0.28
Chow Forecast Test: Forecast from 2013 to 2013	Test Statistic	0.94	0.57	1.81	3.94	0.14	0.05	0.31	3.36	0.48
	P Value	0.35	0.46	0.19	0.06	0.71	0.83	0.58	0.08	0.49
Ramsey RESET Test	Test Statistic	0.94	0.46	0.98	0.99	0.84	1.16	3.08	0.09	2.51
	P Value	0.34	0.50	0.34	0.33	0.37	0.29	0.09	0.77	0.13

Witnesses: H. Sayyan
M. Suarez

14. Major driver variables in the models are balance point heating degree days adjusted for billing cycles, vintage, a time trend, real natural gas prices and economic variables. Driver variable assumptions are shown in the Economic Outlook at Exhibit C2, Tab 1, Schedule 1.

15. Natural gas prices have an important impact on average use. Sharp increases typically have two effects. First, they influence customers' fuel use habits, for example, the lowering of thermostat settings. Second, price increases likely factor in customers' decision-making around the purchase of more efficient furnaces and other appliances. In addition, homeowners may also respond by retrofitting older residences in order to reduce energy consumption. In the models, real natural gas prices are used. The Consumer Price Index ("CPI") is used to convert nominal gas prices to real gas prices. Nominal energy price forecast for 2015 is based on the consensus Henry Hub price forecast produced in April 2014.

16. A linear time trend is used as a proxy measure for energy conservation. However, a linear time trend only reflects constant annual changes in appliance efficiency; it will not be able to reflect the time varying impact of new residential construction on appliance efficiency. Consequently, a vintage variable serves as either a supplementary or complementary variable to the time trend in the model.

17. The vintage variable (for revenue class 20 only) is employed as a proxy measure of gas space heating and gas water heating efficiency gains and residential thermal efficiency. Newer homes with improved thermal envelope characteristics and older homes adding insulation and storm windows/doors reduce the typical amount of gas needed for space heating. Residential thermal efficiency will continue to improve as newer, better-insulated residences account for a larger portion of the

housing stock. The vintage variable captures the impact of both furnace efficiency and new home thermal efficiency on average use.

18. Vintage is defined as the fiscal year in which the customer became a customer (new gas service main date) and is not based on the age of the building. This data includes both new construction and conversion customer additions. As space heating efficiency gains have a greater impact on average use than thermal improvements to homes, customers by vintage is a better variable than age of the building in terms of explaining the percentage decline in residential average use.

19. An illustration of the vintage ratio for 1992 follows:

$$V_{1992} = \frac{\sum_{y=1987}^{1991} V_y}{\sum_{yy=1987}^{1992} V_{yy}}$$ where V denotes vintage.

20. Calendar 1992 is used as the reference year for the vintage ratio since the Energy Efficiency Act prohibited selling of the conventional low-efficiency furnace in January 1992.[6] Consequently, this ratio will capture the increasing market share of both mid-efficiency and high-efficiency furnaces at the expense of declining market share of conventional furnaces over time. Generally, regions with stronger new construction additions experience a sharper decline in the ratio than established regions like Metro. As more new customers are added to the revenue class the declining ratio leads to lower average use over time. Thus the sign of this variable's coefficient is positive.

[6] During the 1970s natural gas furnaces averages about 65% Annual Fuel Utilization Efficiency ("AFUE"). The Energy Efficiency Act imposed 78% AFUE as a minimum for gas furnaces manufactured after January 1, 1992.

21. Economic variables such as employment, vacancy rates, and gross domestic product can impact demand for new gas appliances as well as impact demand for natural gas for space heating and manufacturing processes. Stronger employment and demand for products both domestically and abroad will generally increase natural gas demand.

Risks to the Forecast

22. The impact of customer mix on average use is not static and changes over time. New customers may have different gas use characteristics than existing customers and may be influenced by builder specifications for inclusion/exclusion of new gas appliances. Thus, aggregate average use will be affected even if customers take no actions that could affect their average use. Advances in the future penetration of gas appliances above historical penetration levels implicit in the model could result in increased average use. Conversely, builder specification of non-gas water and/or space heating equipment represents a risk to the forecast as it could result in lower gas consumption than forecast.

23. The use of more efficient water heaters across the franchise area and/or the loss of natural gas water heating to other fuels could result in a permanent decrease in baseload usage and natural gas consumption relative to the forecast.

24. Gas consumption for space heating is very sensitive to thermostat settings. Customers may set their thermostats lower under extremely warm weather like that experienced in 1998, 2001, 2006, and most recently in 2012.

25. Economic activity can impact both demand for appliances and natural gas. If the economy slows more significantly and natural gas prices are higher than indicated in the Economic Outlook (Exhibit C2, Tab 1, Schedule 1), average use will decline further.

26. A structural break in the historical estimated relationship between average use and the driver variables will increase forecast risk as will forecast uncertainty in the driver variables.

Conclusion

27. The model employed by the Company passes a battery of statistical tests and is valid given current and historical information. Continual evaluation and testing is required, as new information becomes available. The model has been estimated over volatile periods in history – recent years of unexpected warm weather, historically high energy prices and increased energy price volatility. In light of these volatile economic and weather conditions, continuous model evaluation ensures that ongoing impacts in the relationship of average use and its driver variables is captured to produce the most accurate and objective forecast as possible.

2015 CUSTOMER ADDITIONS

Item No.	Sector	*Col. 1* 2013 Actual	*Col. 2* 2014 Budget Board Approved	*Col. 4* 2015 Forecast
	Residential[1]			
1.1	New Construction	24,224	26,967	24,678
1.2	Replacement	8,000	7,221	7,428
1.0	Total Residential	32,224	34,188	32,106
	Commercial[2]			
2.1	New Construction	1,891	1,667	1,722
2.2	Replacement	508	788	703
2.0	Total Commercial	2,399	2,455	2,425
	Industrial			
3.1	New Construction	18	2	4
3.2	Replacement	3	2	1
3.0	Total Industrial	21	4	5
4.0	Total Gross Customer Additions	34,644	36,647	34,536

[1] Residential customers include single homes and apartment ensuites

[2] Commercial customers include commercial and traditional apartment buildings

EXPLANATION OF MAJOR TRENDS IN CUSTOMER ADDITIONS

Customer Additions

1. The customer additions 2015 Forecast relative to 2013 Actual and 2014 Board Approved Budget as filed in the Enbridge Incentive Regulation ("IR") application at EB-2012-0459 is outlined in Table 1. The recent forecast projects a decline in 2015 customer additions relative to 2013 Actual and 2014 Budget. This change in customer additions forecast is consistent with the corresponding housing starts projections filed as Exhibit C2, Tab 1, Schedule 1 in EB-2012-0459 and Exhibit C2, Tab 1, Schedule 1 in EB-2014-0276.

2. The customer additions forecast has been developed using a number of sources. Information considered in developing this forecast includes on-the-ground realities such as development projects, originating from direct contact with builders, developers, and municipalities. Economic factors and indicators considered, as available from reliable third-party data sources, include housing starts forecasts, GDP growth, employment and mortgage rates. The approach used to develop this forecast is consistent with the approach used by the Company in previous rate applications, and has been accepted in settlement proposals and Board decisions.

Residential Customers

3. The residential sector consists of new construction ("NC") and replacement markets, accounting for over 90% of the customer additions forecast. Residential NC consists of new homes in new developments. Replacement customers are existing homes that switch from other energy sources to natural gas. Relative to 2013, customer additions are projected to increase in 2014 followed by a decline in 2015. The expected changes in the residential NC customer additions forecast are

driven by the corresponding variations in the housing start projections underpining these forecasts. The relative strength of customer growth in the replacement sector is driven by a favourable price advantage of natural gas relative to alternative fuels such as electricity, propane and heating oil. This price advantage is expected to uphold a strong growth in the replacement sector in 2015 and beyond.

Commercial Customers

4. The continued economic strength is expected to encourage investments in the commercial sector and customer growth is expected in both components of this sector, apartment traditional and commercial. Compared to 2013 Actual and 2014 Board Approved Budget, the customer additions forecast in 2015 is expected to stay flat.

Industrial Customers

5. Relative to 2013, prospects of investments in the industrial manufacturing sector in Ontario have significantly declined in 2015. However, the projected growth in industrial sector has not changed much compared to 2014 Board Approved Budget. The Company is forecasting five industrial customers to be added in 2015.

UTILITY REVENUE
2015 UPDATED FORECAST

Line No.		Col. 1 EB-2012-0459 2015 Utility Placeholder Revenue (Note 1) ($Millions)	Col. 2 2015 Test Year Update Adjustments ($Millions)	Col. 3 2015 Updated Forecast Test Year Utility Revenue ($Millions)
1.	Gas sales	2,404.3	10.7	2,415.0
2.	Transportation of gas	229.6	29.6	259.2
3.	Transmission, compression and storage revenue	1.8	-	1.8
4.	Other operating revenue	42.7	-	42.7
5.	Interest and property rental	-	-	-
6.	Other income	0.1	-	0.1
7.	Total operating revenue	2,678.5	40.3	2,718.8

EXPLANATION OF ADJUSTMENTS TO UTILITY REVENUE
2015 UPDATED FORECAST

Line No.	Adj'd Adjustment ($Millions)	Explanation
1.	10.7	Gas Sales Adjustment to 2015 placeholder gas sales revenues to reflect the updated 2015 volume forecast and Board Approved October 1, 2014 rates.
2.	29.6	Transportation of gas Adjustment to 2015 placeholder transportation of gas revenues to reflect the updated 2015 volume forecast and Board Approved October 1, 2014 rates.

CUSTOMER METERS AND VOLUMES BY RATE CLASS
2015 BUDGET

Item No.		Col. 1 Customers (Average)	Col. 2 Volumes (10^6m^3)	Col. 3 Revenues ($Millions)	
General Service					
1.1.1	Rate 1 - Sales	1 731 885	4 197.4	1 525.5	
1.1.2	Rate 1 - T-Service	201 089	476.0	88.8	
1.1	Total Rate 1	1 932 974	4 673.4	1 614.3	
1.2.1	Rate 6 - Sales	139 579	2 861.7	828.2	
1.2.2	Rate 6 - T-Service	23 898	1 800.7	130.6	
1.2	Total Rate 6	163 477	4 662.4	958.8	
1.3.1	Rate 9 - Sales	6	0.5	0.2	
1.3.2	Rate 9 - T-Service	1	0.1	0.0	**
1.3	Total Rate 9	7	0.6	0.2	
1.	Total General Service Sales & T-Service	2 096 458	9 336.4	2 573.3	
Contract Sales					
2.1	Rate 100	0	0.0	0.0	
2.2	Rate 110	34	72.2	15.7	
2.3	Rate 115	1	1.2	0.2	
2.4	Rate 135	5	3.7	0.7	
2.5	Rate 145	11	20.0	4.3	
2.6	Rate 170	5	39.7	7.7	
2.7	Rate 200	1	169.1	29.4	
2.	Total Contract Sales	57	305.9	58.0	
Contract T-Service					
3.1	Rate 100	0	0.0	0.0	
3.2	Rate 110	152	405.5	14.5	
3.3	Rate 115	30	503.6	8.3	
3.4	Rate 125	5	0.0	9.7	*
3.5	Rate 135	37	52.4	1.5	
3.6	Rate 145	69	113.2	2.9	
3.7	Rate 170	29	431.5	2.1	
3.8	Rate 300	2	30.0	0.2	
3.9	Rate 315	0	0.0	0.0	
3.	Total Contract T-Service	324	1 536.2	39.2	
4.	Total Contract Sales & T-Service	381	1 842.1	97.2	
5.	Total	2 096 839	11 178.5	2 670.5	

* There is no distribution volume for Rate 125 customers.
** Less than $50,000.

Witnesses: S. Qian
M. Suarez

COMPARISON OF AVERAGE CUSTOMER METERS BY RATE CLASS
2015 BUDGET AND 2014 BOARD APPROVED BUDGET

Item No.		Col. 1 2015 Budget	Col. 2 2014 Board Approved Budget	Col. 3 2015 Budget Over (Under) 2014 Budget (1-2)
General Service				
1.1.1	Rate 1 - Sales	1 731 885	1 700 370	31 515
1.1.2	Rate 1 - T-Service	201 089	199 262	1 827
1.1	Total Rate 1	1 932 974	1 899 632	33 342
1.2.1	Rate 6 - Sales	139 579	139 230	349
1.2.2	Rate 6 - T-Service	23 898	20 347	3 551
1.2	Total Rate 6	163 477	159 577	3 900
1.3.1	Rate 9 - Sales	6	7	(1)
1.3.2	Rate 9 - T-Service	1	1	0
1.3	Total Rate 9	7	8	(1)
1.	Total General Service Sales & T-Servic	2 096 458	2 059 217	37 241
Contract Sales				
2.1	Rate 100	0	0	0
2.2	Rate 110	34	33	1
2.3	Rate 115	1	1	0
2.4	Rate 135	5	1	4
2.5	Rate 145	11	11	0
2.6	Rate 170	5	5	0
2.7	Rate 200	1	1	0
2.	Total Contract Sales	57	52	5
Contract T-Service				
3.1	Rate 100	0	0	0
3.2	Rate 110	152	158	(6)
3.3	Rate 115	30	26	4
3.4	Rate 125	5	5	0
3.5	Rate 135	37	40	(3)
3.6	Rate 145	69	92	(23)
3.7	Rate 170	29	29	0
3.8	Rate 300	2	2	0
3.9	Rate 315	0	0	0
3.	Total Contract T-Service	324	352	(28)
4.	Total Contract Sales & T-Service	381	404	(23)
5.	Total	2 096 839	2 059 621	37 218

Witnesses: S. Qian
M. Suarez

COMPARISON OF GAS SALES AND TRANSPORTATION VOLUME BY RATE CLASS
2015 BUDGET AND 2014 BOARD APPROVED BUDGET
(10^6m^3)

Item No.		Col. 1 2015 Budget	Col. 2 2014 Board Approved Budget	Col. 3 2015 Budget Over (Under) 2014 Budget (1-2)
General Service				
1.1.1	Rate 1 - Sales	4 197.4	4 131.1	66.3
1.1.2	Rate 1 - T-Service	476.0	490.2	(14.2)
1.1	Total Rate 1	4 673.4	4 621.3	52.1
1.2.1	Rate 6 - Sales	2 861.7	2 944.6	(82.9)
1.2.2	Rate 6 - T-Service	1 800.7	1 625.5	175.2
1.2	Total Rate 6	4 662.4	4 570.1	92.3
1.3.1	Rate 9 - Sales	0.5	0.5	0.0
1.3.2	Rate 9 - T-Service	0.1	0.1	0.0
1.3	Total Rate 9	0.6	0.6	0.0
1.	Total General Service Sales & T-Service	9 336.4	9 192.0	144.4
Contract Sales				
2.1	Rate 100	0.0	0.0	0.0
2.2	Rate 110	72.2	92.1	(19.9)
2.3	Rate 115	1.2	0.9	0.3
2.4	Rate 135	3.7	1.2	2.5
2.5	Rate 145	20.0	22.0	(2.0)
2.6	Rate 170	39.7	37.3	2.4
2.7	Rate 200	169.1	164.9	4.2
2.	Total Contract Sales	305.9	318.4	(12.5)
Contract T-Service				
3.1	Rate 100	0.0	0.0	0.0
3.2	Rate 110	405.5	525.6	(120.1)
3.3	Rate 115	503.6	470.1	33.5
3.4	Rate 125	0.0 *	0.0 *	0.0
3.5	Rate 135	52.4	55.3	(2.9)
3.6	Rate 145	113.2	142.0	(28.8)
3.7	Rate 170	431.5	425.6	5.9
3.8	Rate 300	30.0	30.0	0.0
3.9	Rate 315	0.0	0.0	0.0
3.	Total Contract T-Service	1 536.2	1 648.6	(112.4)
4.	Total Contract Sales & T-Service	1 842.1	1 967.0	(124.9)
5.	Total	11 178.5	11 159.0	19.5

* There is no distribution volume for Rate 125 customers.

Witnesses: S. Qian
M. Suarez

COMPARISON OF GAS SALES AND TRANSPORTATION VOLUME BY RATE CLASS
2015 BUDGET AND 2014 BOARD APPROVED BUDGET
(10^6m^3)

Item No.		Col. 1 2015 Budget	Col. 2 2014 Board Approved Budget	Col. 3 2015 Budget Over (Under) 2014 Budget (1-2)	Col. 4 2014* Adjustments	Col. 5 2015 Budget Over (Under) 2014 Budget with Adjustments (3-4)
General Service						
1.1.1	Rate 1 - Sales	4 197.4	4 131.1	66.3	12.5	53.8
1.1.2	Rate 1 - T-Service	476.0	490.2	(14.2)	1.3	(15.5)
1.1	Total Rate 1	4 673.4	4 621.3	52.1	13.8	38.3
1.2.1	Rate 6 - Sales	2 861.7	2 944.6	(82.9)	9.1	(92.0)
1.2.2	Rate 6 - T-Service	1 800.7	1 625.5	175.2	4.0	171.2
1.2	Total Rate 6	4 662.4	4 570.1	92.3	13.1	79.2
1.3.1	Rate 9 - Sales	0.5	0.5	0.0	0.0	0.0
1.3.2	Rate 9 - T-Service	0.1	0.1	0.0	0.0	0.0
1.3	Total Rate 9	0.6	0.6	0.0	0.0	0.0
1.	Total General Service Sales & T-Service	9 336.4	9 192.0	144.4	26.9	117.5
Contract Sales						
2.1	Rate 100	0.0	0.0	0.0	0.0	0.0
2.2	Rate 110	72.2	92.1	(19.9)	0.0 **	(19.9)
2.3	Rate 115	1.2	0.9	0.3	0.0 **	0.3
2.4	Rate 135	3.7	1.2	2.5	0.0 **	2.5
2.5	Rate 145	20.0	22.0	(2.0)	0.0 **	(2.0)
2.6	Rate 170	39.7	37.3	2.4	0.0 **	2.4
2.7	Rate 200	169.1	164.9	4.2	0.0	4.2
2.	Total Contract Sales	305.9	318.4	(12.5)	0.0	(12.5)
Contract T-Service						
3.1	Rate 100	0.0	0.0	0.0	0.0	0.0
3.2	Rate 110	405.5	525.6	(120.1)	0.1	(120.2)
3.3	Rate 115	503.6	470.1	33.5	0.0 **	33.5
3.4	Rate 125	0.0	0.0	0.0	0.0 **	0.0
3.5	Rate 135	52.4	55.3	(2.9)	0.0 **	(2.9)
3.6	Rate 145	113.2	142.0	(28.8)	0.1	(28.9)
3.7	Rate 170	431.5	425.6	5.9	0.5	5.4
3.8	Rate 300	30.0	30.0	0.0	0.0	0.0
3.9	Rate 315	0.0	0.0	0.0	0.0	0.0
3.	Total Contract T-Service	1 536.2	1 648.6	(112.4)	0.7	(113.1)
4.	Total Contract Sales & T-Service	1 842.1	1 967.0	(124.9)	0.7	(125.6)
5.	Total	11 178.5	11 159.0	19.5	27.6	(8.1)

*Note: Weather normalization adjustments have been made to the 2014 Board Approved Budget utilizing the 2015 Budget degree days in order to place the two years on a comparable basis.

** Less than 50,000 m^3.

COMPARISON OF GAS SALES AND TRANSPORTATION VOLUME BY RATE CLASS
2015 BUDGET AND 2014 BOARD APPROVED BUDGET
(10^6m^3)

Item No.		Col. 1 2015 Budget	Col. 2 2014 Board Approved Budget	Col. 3 2015 Budget Over (Under) 2014 Budget (1-2)	Col. 4 Change in Use	Col. 5 Weather	Col. 6 New Customers	Col. 7 Transfer Gains	Col. 8 Transfer Losses	Col. 9 Lost Customers	Col. 10 Added Load
General Service											
1.1.1	Rate 1 - Sales	4 197.4	4 131.1	66.3	(31.1)	12.5	79.3	5.6	0.0	0.0	0.0
1.1.2	Rate 1 - T-Service	476.0	490.2	(14.2)	(9.9)	1.3	0.0	0.0	(5.6)	0.0	0.0
1.1	Total Rate 1	4 673.4	4 621.3	52.1	(41.0)	13.8	79.3	5.6	(5.6)	0.0	0.0
1.2.1	Rate 6 - Sales	2 861.7	2 944.6	(82.9)	(155.6)	9.1	84.8	(16.2)	(5.0)	0.0	0.0
1.2.2	Rate 6 - T-Service	1 800.7	1 625.5	175.2	108.9	4.0	0.0	57.5	4.8	0.0	0.0
1.2	Total Rate 6	4 662.4	4 570.1	92.3	(46.7)	13.1	84.8	41.3	(0.2)	0.0	0.0
1.3.1	Rate 9 - Sales	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	(0.1)	0.0
1.3.2	Rate 9 - T-Service	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.3	Total Rate 9	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	(0.1)	0.0
1.	Total General Service Sales & T-Service	9 336.4	9 192.0	144.4	(87.6)	26.9	164.1	46.9	(5.8)	(0.1)	0.0
Contract Sales											
2.1	Rate 100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.2	Rate 110	72.2	92.1	(19.9)	10.5	0.0 *	0.0	4.2	(31.2)	(3.4)	0.0
2.3	Rate 115	1.2	0.9	0.3	0.3	0.0 *	0.0	0.0	0.0	0.0	0.0
2.4	Rate 135	3.7	1.2	2.5	1.7	0.0 *	0.4	0.4	0.0	0.0	0.0
2.5	Rate 145	20.0	22.0	(2.0)	(1.5)	0.0 *	0.0	0.4	(0.9)	0.0	0.0
2.6	Rate 170	39.7	37.3	2.4	2.4	0.0 *	0.0	0.0	0.0	0.0	0.0
2.7	Rate 200	169.1	164.9	4.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0
2.	Total Contract Sales	305.9	318.4	(12.5)	17.6	0.0	0.4	5.0	(32.1)	(3.4)	0.0
Contract T-Service											
3.1	Rate 100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.2	Rate 110	405.5	525.6	(120.1)	2.5	0.1	2.8	25.7	(151.2)	0.0	0.0
3.3	Rate 115	503.6	470.1	33.5	11.0	0.0 *	0.0	141.5	(119.0)	0.0	0.0
3.4	Rate 125	0.0	0.0	0.0	0.0	0.0 *	0.0	0.0	0.0	0.0	0.0
3.5	Rate 135	52.4	55.3	(2.9)	(0.6)	0.0 *	0.0	0.5	(1.5)	(1.3)	0.0
3.6	Rate 145	113.2	142.0	(28.8)	2.5	0.1	0.0	9.9	(41.3)	0.0	0.0
3.7	Rate 170	431.5	425.6	5.9	(6.1)	0.5	0.0	44.4	(22.1)	(10.8)	0.0
3.8	Rate 300	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.9	Rate 315	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.	Total Contract T-Service	1 536.2	1 648.6	(112.4)	9.3	0.7	2.8	222.0	(335.1)	(12.1)	0.0
4.	Total Contract Sales & T-Service	1 842.1	1 967.0	(124.9)	26.9	0.7	3.2	227.0	(367.2)	(15.5)	0.0
5.	Total	11 178.5	11 159.0	19.5	(60.7)	27.6	167.3	273.9	(373.0)	(15.6)	0.0

* Less than 50,000 m^3.

The principal reasons for the variances contributing to the weather normalized decrease of 8.1 10^6m^3 in the 2015 Budget over the 2014 Budget are as follows:

1. The volumetric increase of 38.3 10^6m^3 in Rate 1 is due to customer growth of 79.3 10^6m^3, partially offset by lower average use per customer of totalling 41.0 10^6m^3;

2. The volumetric increase of 79.2 10^6m^3 in Rate 6 is due to the net customer growth of 84.8 10^6m^3, and the net customer migration from Contract Sales and T-Service of 41.1 10^6m^3, partially offset by lower average use per customer of totalling 46.7 10^6m^3;

3. The volumetric decrease for Contract Sales and T-Service of 125.6 10^6m^3 is due to the decreases in the apartment sector of 1.4 10^6m^3, the commercial sector of 106.4 10^6m^3 and the industrial sector of 22.0 $10^6m^{3,}$ partially offset by the increase of the Rate 200 of 4.2 10^6m^3.

COMPARISON OF GAS SALES AND TRANSPORTATION REVENUE BY RATE CLASS
2015 BUDGET AND 2014 BOARD APPROVED BUDGET
($ MILLIONS)

Item No.		Col. 1 2015 Budget	Col. 2 2014 Board Approved Budget	Col. 3 2015 Budget Over (Under) 2014 Budget (1-2)
General Service				
1.1.1	Rate 1 - Sales	1 525.5	1 382.8	142.7
1.1.2	Rate 1 - T-Service	88.8	88.1	0.7
1.1	Total Rate 1	1 614.3	1 470.9	143.4
1.2.1	Rate 6 - Sales	828.2	764.0	64.2
1.2.2	Rate 6 - T-Service	130.6	111.8	18.8
1.2	Total Rate 6	958.8	875.8	83.0
1.3.1	Rate 9 - Sales	0.2	0.2	0.0
1.3.2	Rate 9 - T-Service	0.0 *	0.0 *	0.0 *
1.3	Total Rate 9	0.2	0.2	0.0
1.	Total General Service Sales & T-Service	2 573.3	2 346.9	226.4
Contract Sales				
2.1	Rate 100	0.0	0.0	0.0
2.2	Rate 110	15.7	17.6	(1.9)
2.3	Rate 115	0.2	0.2	0.0
2.4	Rate 135	0.7	0.2	0.5
2.5	Rate 145	4.3	4.1	0.2
2.6	Rate 170	7.7	6.2	1.5
2.7	Rate 200	29.4	25.2	4.2
2.	Total Contract Sales	58.0	53.5	4.5
Contract T-Service				
3.1	Rate 100	0.0	0.0	0.0
3.2	Rate 110	14.5	13.9	0.6
3.3	Rate 115	8.3	6.0	2.3
3.4	Rate 125	9.7	9.7	0.0 *
3.5	Rate 135	1.5	1.5	(0.1)
3.6	Rate 145	2.9	3.3	(0.4)
3.7	Rate 170	2.1	(0.6)	2.7
3.8	Rate 300	0.2	0.2	0.0 *
3.9	Rate 315	0.0	0.0	0.0
3.	Total Contract T-Service	39.2	34.0	5.2
4.	Total Contract Sales & T-Service	97.2	87.5	9.7
5.	Total	2 670.5	2 434.4	236.0

* Less than $50,000.

Witnesses: S. Qian
M. Suarez