

EXHIBIT 3  
LOAD FORECAST  
EB-2016-0056

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1 **2.3.1 LOAD AND REVENUE FORECAST**

2  
3 This Exhibit provides the details of Atikokan Hydro Inc. (“Atikokan”) operating revenue for 2012  
4 Board Approved, 2012 Actual, 2013 Actual, 2014 Actual, 2015 Actual, the 2016 Bridge Year  
5 (“Bridge Year”) and the 2017 Test Year (“Test Year”). This Exhibit also provides a detailed  
6 variance analysis by rate classification of the operating revenue components. Distribution revenue  
7 excludes revenue from commodity sales.

8 Atikokan is proposing a total Service Revenue Requirement of \$1,518,220 for the 2017 Test Year.  
9 This amount includes a Base Revenue Requirement of \$1,415,450 plus revenue offsets of  
10 \$102,770, to be recovered through Other Revenue.

11 Other Revenue include Late Payment charges, Specific Service charges, Rent from Electric  
12 Property, Miscellaneous Service revenues, Standard Supply Service (“SSS”) Administrative  
13 charges and Interest. A summary of these operating revenues together is presented with a  
14 materiality analysis of variances is presented in Table 3-36.

15 The following Table 3-1 summarizes Atikokan Hydro’s total operating revenue. Revenue for each  
16 of the actual years is from Atikokan’s audited Financial Statements which reconcile to the annual  
17 filings with the OEB. The Bridge Year is comprised of actual revenue from January to June, 2016.  
18 The remainder of the year is based on a six month projection of distribution revenue from existing  
19 distribution rates and other distribution revenue. The Test Year distribution revenue is provided  
20 on the basis of both existing and proposed distribution rates. Revenue for the GS>50 kW is net  
21 of transformer allowance credits to eligible customers within these rate classes.

**Table 3-1 Summary of Operating Revenue**

	2011 Actual	2012 Board Approved	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test at Current Rates	2017 Test at Proposed Rates
<b>Distribution Throughput Revenue</b>									
Residential	618,479	\$ 746,244	\$676,859	\$773,906	\$781,985	\$769,099	\$728,871	\$716,830	835,939
GS<50	235,090	\$ 287,448	\$249,046	\$276,074	\$275,250	\$271,053	\$265,789	\$257,902	286,975
GS>50	142,581	\$ 115,030	\$151,058	\$163,590	\$173,917	\$231,321	\$225,123	\$191,138	196,020
Street Lights	75,441	\$ 84,093	\$91,061	\$111,656	\$112,397	\$113,146	\$113,226	\$113,188	96,516
<b>Total</b>	<b>1,071,590</b>	<b>\$ 1,232,815</b>	<b>1,168,023</b>	<b>1,325,226</b>	<b>1,343,549</b>	<b>1,384,619</b>	<b>1,333,009</b>	<b>1,279,058</b>	<b>1,415,450</b>
<b>Other Distribution Revenue</b>									
SSS Administration Revenue (4086)	4,633	\$4,200	\$4,741	\$4,845	\$4,906	\$4,884	\$4,875	\$4,875	\$4,875
Rent from Electric Property (4210)	34,911	\$ 34,911	\$31,625	\$31,625	\$31,625	\$31,625	\$32,609	\$32,609	\$32,609
Late Payment Charges (4225)	4,809	\$ 6,024	\$6,424	\$6,376	\$8,072	\$9,300	\$7,286	\$7,543	\$7,543
Specific Service Charges (4235)	6,330	\$ 7,100	\$6,079	\$6,278	\$6,640	\$4,542	\$5,861	\$5,885	\$5,885
Merchandise & Jobbing Revenue (4325)	89,497	\$ 75,000	\$66,608	\$70,407	\$128,340	\$91,224	\$59,171	\$70,000	\$70,000
Merchandise & Jobbing Costs (4330)	(24,174)	-\$ 20,000	-\$29,758	-\$58,208	-\$87,015	-\$23,705	-\$34,351	-\$34,351	-\$34,351
Other Distribution Rev. (4082, 4084, 4390)	9,922	\$ 9,000	\$11,660	10753.93	\$13,204	\$13,079	\$8,800	\$8,420	\$8,420
Other Income & Exp. (4405)	11,012	\$ 9,000	\$12,876	\$5,332	\$7,789	\$9,491	\$8,872	\$7,789	\$7,789
<b>Total</b>	<b>\$136,940</b>	<b>\$125,235</b>	<b>\$110,255</b>	<b>\$77,410</b>	<b>\$113,562</b>	<b>\$140,440</b>	<b>\$93,123</b>	<b>\$102,770</b>	<b>\$102,770</b>
<b>Grand Total</b>	<b>\$1,208,530</b>	<b>\$1,358,050</b>	<b>\$1,278,278</b>	<b>\$1,402,636</b>	<b>\$1,457,111</b>	<b>\$1,525,059</b>	<b>\$1,426,132</b>	<b>\$1,381,828</b>	<b>\$1,518,220</b>

### SUMMARY OF LOAD AND CUSTOMER/CONNECTION FORECAST

The purpose of this evidence is to present the process used by Atikokan to prepare the weather normalized load and customer/connection forecast used to design the proposed 2017 distribution rates.

In summary, as a starting point Atikokan used the same regression analysis methodology approved by the Ontario Energy Board (the "Board") in its 2012 Cost of Service ("COS") application (EB-2011-0293) and updated the analysis for actual power purchases to the end of the 2015. As described below, the updated regression analysis included the variables used in the 2012 COS application and included two new variables. A variable to reflect economic conditions and another variable to address the impact of the Intermediate customer was included. The regression analysis used in this application has also been used by a number of distributors in more recent cost of service rate applications to determine a prediction model. With regard to the overall process of load forecasting, Atikokan believes that conducting a regression analysis on historical electricity purchases to produce an equation that will predict purchases is appropriate. Atikokan has the data for the amount of electricity (in kWh) purchased from the IESO for use by Atikokan's customers. With a regression analysis, these purchases can be related to other monthly explanatory variables such as heating degree days and cooling degree days which occur in the same month. The results of the regression analysis produce an equation that predicts the purchases based on the explanatory variables. This prediction model is then used as the basis to

1 forecast the total level of weather normalized purchases for the Bridge Year and the Test Year  
 2 which is converted to billed kWh and kW, where applicable, by rate class. A detailed explanation  
 3 of the process is provided later in this evidence.

4 Based on the Board's approval of this methodology in a number of previous cost of service  
 5 applications as well as the discussion that follows, Atikokan submits the load forecasting  
 6 methodology is reasonable at this time for the purposes of this Application.

7 The following provides the material to support the weather normalized load forecast used by  
 8 Atikokan in this Application. Table 3-2, Table 3-3 and Table 3-4 below provide a summary of the  
 9 weather normalized load and customer/connection forecast used in this Application.

**Table 3-2 Summary of Load and Customer/Connection Forecast**

Year	Billed Actual (GWh)	Growth (GWh)	Billed Weather Normal (GWh)	Growth (GWh)	Customer/ Connection Count	Growth
<b>Billed Energy (GWh) and Customer Count / Connections</b>						
2012 Board Approved			23.0		2,297	
2003	41.5		41.4		2,416	
2004	36.2	(5.3)	36.0	(5.4)	2,376	(41)
2005	43.3	7.1	43.2	7.2	2,355	(21)
2006	43.3	0.0	43.6	0.4	2,344	(11)
2007	38.5	(4.8)	38.3	(5.3)	2,329	(15)
2008	24.6	(13.9)	24.2	(14.1)	2,312	(18)
2009	23.3	(1.3)	23.2	(1.0)	2,315	4
2010	22.9	(0.4)	23.8	0.6	2,308	(7)
2011	22.4	(0.5)	22.5	(1.3)	2,294	(14)
2012	22.0	(0.4)	22.5	0.0	2,299	5
2013	22.6	0.6	22.2	(0.3)	2,300	2
2014	23.4	0.8	23.0	0.8	2,297	(4)
2015	32.4	9.0	32.5	9.5	2,286	(11)
2016 Bridge			27.2	(5.3)	2,270	(15)
2017 Test			27.3	0.1	2,260	(10)

11  
 12 In the above Table 3-2, the billed GWh data from 2003 to 2015 reflects actual weather and  
 13 weather normal conditions in each year. The weather normal values are the actual values  
 14 adjusted by the weather normal conversion factor outlined in Table 3-6. The weather conversion

1 factor is determined consistent with the approach outlined by the OEB in Appendix 2-IA. For 2016  
2 and 2017, the forecasted billed GWh is on a weather normal basis.

3 Customer/Connection values are on an average basis and street lights, sentinel lights and  
4 unmetered loads are measured as connections.

5 On a rate class basis, the actual and forecasted billed amounts are shown in Table 3-3. Actual  
6 volumes have been weather normalized by rate class using the weather normal conversion factor  
7 from Table 3-6. The actual and forecasted number of customers/connections and  
8 customer/connection usage on a weather normal basis is shown in Table 3-4.

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**Table 3-3 Billed Energy by Rate Class**

Year	Residential	GS<50 kW	GS>50 kW	Intermediate	Street Lights	Total
<b>Billed Energy (GWh) - Actual</b>						
2003	11.2	6.2	7.5	16.1	0.5	41.5
2004	10.8	5.6	7.2	12.0	0.5	36.2
2005	11.1	5.7	7.2	18.8	0.5	43.3
2006	10.8	5.5	6.9	19.6	0.5	43.3
2007	11.0	5.7	7.2	14.1	0.5	38.5
2008	10.3	5.4	7.2	1.1	0.5	24.6
2009	9.8	5.0	8.1	0.0	0.5	23.3
2010	9.9	5.0	7.5	0.0	0.5	22.9
2011	9.6	5.6	6.7	0.0	0.5	22.4
2012	9.4	5.3	6.7	0.0	0.5	22.0
2013	9.8	5.2	7.0	0.0	0.5	22.6
2014	9.7	5.3	7.9	0.0	0.5	23.4
2015	9.2	5.1	17.6	0.0	0.5	32.4
<b>Billed Energy (GWh) - Weather Normal</b>						
2003	11.2	6.2	7.5	16.0	0.5	41.4
2004	10.8	5.6	7.1	12.0	0.5	36.0
2005	11.1	5.7	7.2	18.7	0.5	43.2
2006	10.8	5.5	7.0	19.8	0.5	43.6
2007	10.9	5.6	7.2	14.1	0.5	38.3
2008	10.2	5.3	7.1	1.1	0.5	24.2
2009	9.7	4.9	8.1	0.0	0.5	23.2
2010	10.3	5.2	7.8	0.0	0.5	23.8
2011	9.7	5.6	6.7	0.0	0.5	22.5
2012	9.7	5.4	6.9	0.0	0.5	22.5
2012 Board Approved	11.1	6.2	5.2	0.0	0.5	23.0
2013	9.7	5.2	6.9	0.0	0.5	22.2
2014	9.6	5.2	7.7	0.0	0.5	23.0
2015	9.3	5.1	17.6	0.0	0.5	32.5
2016 Bridge	9.6	5.3	11.9	0.0	0.5	27.2
2017 Test	9.7	5.1	12.0	0.0	0.5	27.3

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**Table 3-4 Number of Customers/Connections and Annual Normalized Usage by Rate**

**Class**

Number of Customers/Connections						
Year	Residential	GS<50 kW	GS>50 kW	Intermediate	Street Lights	Total
2003	1,502	270	22	1	622	2,416
2004	1,482	255	21	1	618	2,376
2005	1,468	247	21	1	620	2,355
2006	1,456	246	20	1	621	2,344
2007	1,444	244	20	1	621	2,329
2008	1,433	238	21	1	620	2,312
2009	1,435	239	21	0	621	2,315
2010	1,424	238	21	0	626	2,308
2011	1,409	232	22	0	632	2,294
2012	1,410	234	20	0	635	2,299
2012 Board Approved	1,424	235	15	0	623	2,297
2013	1,413	235	18	0	635	2,300
2014	1,411	234	19	0	633	2,297
2015	1,405	234	19	0	628	2,286
2016 Bridge	1,397	231	17	0	625	2,270
2017 Test	1,389	228	17	0	625	2,260
Actual Annual Energy Usage per Customer/Connection (kWh per customer/connection)						
2003	7,449	22,838	348,713	16,081,346	864	
2004	7,323	22,133	340,763	12,033,248	842	
2005	7,586	23,026	352,275	18,768,448	816	
2006	7,392	22,344	346,738	19,638,898	785	
2007	7,592	23,258	361,076	14,122,517	819	
2008	7,216	22,680	351,523	1,140,822	789	
2009	6,798	20,749	394,872	0	800	
2010	6,973	21,121	356,612	0	776	
2011	6,829	24,272	303,450	0	744	
2012	6,699	22,785	336,138	0	739	
2013	6,962	22,337	390,015	0	737	
2014	6,905	22,718	413,259	0	738	
2015	6,566	21,839	924,795	0	739	
Normalized Annual Energy Usage per Customer/Connection (kWh per customer/connection)						
2003	7,435	22,794	348,033	16,049,957	862	
2004	7,276	21,990	338,565	11,955,598	837	
2005	7,566	22,963	351,306	18,716,824	814	
2006	7,442	22,493	349,062	19,770,572	790	
2007	7,564	23,171	359,716	14,069,350	816	
2008	7,107	22,337	346,202	1,123,554	777	
2009	6,768	20,656	393,109	0	797	
2010	7,229	21,896	369,691	0	805	
2011	6,857	24,372	304,694	0	747	
2012	6,858	23,325	344,104	0	757	
2012 Board Approved	7,804	26,579	347,904	0	749	
2013	6,856	21,997	384,079	0	725	
2014	6,801	22,375	407,020	0	727	
2015	6,591	21,923	928,359	0	742	
2016 Bridge	6,889	22,813	698,221	0	739	
2017 Test	6,972	22,493	708,439	0	739	

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### 2.3.1.1 FORECAST METHODOLOGY – MULTIVARIATE REGRESSION MODEL

Atikokan’s weather normalized load forecast is developed in a three-step process. First, a total system weather normalized purchased energy forecast is developed based on multivariate regression model that incorporates historical load, weather, and economic data. Second, the weather normalized purchased energy forecast is adjusted by a historical loss factor to produce a weather normalized billed energy forecast. Finally, the forecast of billed energy by rate class is developed based on a forecast of customer numbers and historical usage patterns per customer. For the rate classes that have weather sensitive load their forecasted billed energy is adjusted to ensure that the total billed energy forecast by rate class is equivalent to the total weather normalized billed energy forecast that has been determined from the regression model. The forecast of customers by rate class is determined using a geometric mean analysis and judgement of Atikokan. The forecast is also adjusted for expected Conservation and Demand Management (“CDM”) results. For those rate classes that use kW for the distribution volumetric billing determinant an adjustment factor is applied to the class energy forecast based on the historical relationship between kW and kWh. The following will explain the forecasting process in more detail.

#### Purchased KWh Load Forecast

An equation to predict total system purchased energy is developed using a multivariate regression model with independent variables outlined below: weather (heating and cooling degree days), calendar variables (days in month) seasonal), number of customer/connections, provincial economic conditions and an Intermediate class flag. The regression model uses monthly kWh and monthly values of independent variables from May 2002 to December 2015 to determine the monthly regression coefficients. This provides 164 monthly data points which are a reasonable data set for use in a multiple regression analysis.

With regards to weather normalization, Atikokan submits that it is appropriate to review the impact of weather over the thirteen years January 2003 to December 2015 since it is consistent with the full years (i.e. 2003 to 2015) used in the regression analysis. The average weather conditions over this period are applied in the prediction formula to determine a weather normalized forecast. In accordance with the filing requirement, Atikokan has also provided sensitivity analysis showing

1 the impact on the 2017 forecast of purchases. This analysis assumes weather normal conditions  
2 are based on a 10 year average and a 20 year trend of weather data.

3  
4 The multivariate regression model has determined drivers of year-over-year changes in  
5 Atikokan's load growth are weather (heating and cooling degree days), calendar variables (days  
6 in month), number of customer/connections, provincial economic conditions and an Intermediate  
7 class flag. These factors are captured within the multivariate regression model.

8 Weather impacts on load are apparent in both the winter heating season, and in the summer  
9 cooling season. For that reason, both Heating Degree Days (i.e. a measure of coldness in winter)  
10 and Cooling Degree Days (i.e. a measure of summer heat) are modeled.

11 Another factor determining energy use in the monthly model is the number of days in a particular  
12 month.

13  
14 The regression analysis indicates that economic conditions such the number of  
15 customers/connection and the Ontario Real GDP impact on electricity usage for Atikokan. In  
16 addition, prior to September 2007, the monthly energy usage for the customer in the Intermediate  
17 class was significant (i.e. above 40% of Atikokan's total energy use). In 2012, this class was  
18 eliminated since the Intermediate class customer was no longer in existence. However, the  
19 regression analysis reviews data back to May 2002 which means the energy usage for the  
20 customer in the Intermediate class needs to be taken into consideration. This is done by using an  
21 Intermediate class flag. When the monthly consumption for the customer is above 1,000,000 kWh  
22 the flag is set to "1". For monthly consumption below 1,000,000 the flag is set to "0".

23  
24 The following outlines the predication model used by Atikokan to predict weather normal  
25 purchases for 2016 and 2017.

26  
27 Atikokan Monthly Predicted kWh Purchases

28 + Heating Degree Days \* 784  
29 + Cooling Degree Days \* 2,925  
30 + Number of Days in the Month \* 87,142  
31 + Intermediate Class Flag \* 1,536,537  
32 + Number of Customers/Connections \* 9,025  
33 + Ontario Real GDP Monthly \* 38,802

1 + Constant of (27,135,910)

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The monthly data used in the regression model and the resulting monthly prediction for the actual and forecasted years are provided in Appendix 3-A.

The sources of data for the various data points are:

- a) Environment Canada website for monthly heating degree day and cooling degree information. Weather data from the Atikokan (AUT) Station was used.
- b) The calendar provided information related to number of days in the month.
- c) The Intermediate Class Flag is explained above
- d) Number of customers/connections was provided from the Atikokan billing system
- e) Ontario Real GDP monthly values were based on information provided in the following sources
  - 2002 to 2006: 2003 and 2008 Ontario Economic Outlook and Fiscal Review, Ontario Ministry of Finance
  - 2007 to 2008: 2010 Ontario Economic Outlook and Fiscal Review - 2010 Fall Update
  - 2009: 2012 Ontario Economic Outlook and Fiscal Review - 2012 Fall Update
  - 2010: 2013 Ontario Economic Outlook and Fiscal Review - 2013 Fall Update
  - 2011: 2014 Ontario Economic Outlook and Fiscal Review - 2014 Fall Update
  - 2012: 2015 Ontario Budget
  - 2013 to 2017: 2016 Ontario Budget

The prediction formula has the following statistical results (Table 3-5) which generally indicate the formula has a very good fit to the actual data set.

1

**Table 3-5 Statistical Results**

R Square	91.9%
Adjusted R Square	91.6%
F Test	298.0
MAPE (Monthly)	7.6%
T-stats by Coefficient	
Heating Degree Days	11.2
Cooling Degree Days	2.0
Number of Days in Month	3.4
Intermediate Class Flag	26.3
Number of Customers/Connections	8.4
Ontario Real GDP Monthly %	6.8
Constant	(8.3)

2

3 The annual results of the above prediction formula compared to the actual annual purchases from  
 4 2003 to 2015 are shown below in Table 3-6 along with the predicted total system purchases for  
 5 Atikokan for 2016 and 2017 on a weather normal basis. In addition, weather normal values for  
 6 2017 are provided on a 10 year average and 20 year trend assumption for weather normalization.  
 7 Information is also provided to show the Weather Normal Conversion Factor which is used to  
 8 weather normalize actual volume data. In Table 3-6, the Predicted Weather Normal values are  
 9 similar to the Predicted amounts but the weather normalized heating degree days and cooling  
 10 degree days used to determine the weather normal forecast for 2016 and 2017 are used in the  
 11 prediction formula in place of actual heating degree days and cooling degree days. The ratio of  
 12 Predicted Weather Normal to Predicted values results in a Weather Normal Conversion Factor.  
 13 This factor is applied to the Actual amount which results in the Actual Weather Normal value.

14

**Table 3-6 Total System Purchase**

Year	Actual	Predicted	% Difference	Predicted Weather Normal	Weather Normal Conversion Factor	Actual Weather Normal
<b>Purchased Energy (GWh)</b>						
2003	41.9	42.1	0.5%	42.0	0.9980	41.8
2004	40.3	39.4	(2.2%)	39.2	0.9935	40.1
2005	45.9	46.2	0.5%	46.0	0.9972	45.8
2006	46.2	46.0	(0.6%)	46.3	1.0067	46.5
2007	40.7	40.1	(1.6%)	39.9	0.9962	40.6
2008	27.0	26.8	(0.6%)	26.4	0.9849	26.6
2009	25.8	25.0	(2.9%)	24.9	0.9955	25.7
2010	24.7	23.4	(5.1%)	24.3	1.0367	25.6
2011	24.7	24.9	0.7%	25.0	1.0041	24.8
2012	24.3	26.1	7.6%	26.8	1.0237	24.9
2013	24.9	28.2	13.5%	27.8	0.9848	24.5
2014	25.6	29.2	13.9%	28.7	0.9849	25.2
2015	34.8	29.3	(15.9%)	29.4	1.0039	34.9
2016 Bridge		29.6		29.6	1.0000	
2017 Test		30.0		30.0	1.0000	
2017 WN - 10 year average		30.0				
2017 WN - 20 year trend		30.2				

15

1 The weather normalized amount for 2017 is determined by using 2017 dependent variables in the  
2 prediction formula on a monthly basis along with the average monthly heating degree days and  
3 cooling degree days which have occurred from January 2003 to December 2015 (i.e. 13 years).  
4 The 2017 weather normal 10 year average value assumes the average in monthly heating degree  
5 days and cooling degree days which have occurred from January 2006 to December 2015. The  
6 2017 weather normal 20 year trend value reflects the trend in monthly heating degree days and  
7 cooling degree days which have occurred from January 1996 to December 2015.

### 8 9 **Billed KWh Load Forecast**

10  
11 To determine the total weather normalized energy billed forecast, the total system weather  
12 normalized purchases forecast is adjusted by a historical loss factor. The historical loss factor  
13 used is 8.3% which represents the average loss factor from 2003 to 2015. With this average loss  
14 factor the total weather normalized billed energy before adjustment discussed below will be 27.3  
15 (GWh) for 2016 (i.e.  $29.6/1.083$ ) and 27.7 (GWh) for 2017 (i.e.  $30.0/1.083$ ).

#### 16 17 18 **2.3.1.2 Billed KWh Load Forecast and Customer/Connection Forecast by Rate** 19 **Class**

20  
21 Since the total weather normalized billed energy amount is known this amount needs to be  
22 distributed by rate class for rate design purposes taking into consideration the  
23 customer/connection forecast and expected usage per customer by rate class.

24  
25 The next step in the forecasting process is to determine a customer/connection forecast. The  
26 customer/connection forecast is based on reviewing historical customer/connection data that is  
27 available as shown in the following Table 3-7.

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**Table 3-7 Historical Customer/Connection Data**

Year	Residential	GS<50 kW	GS>50 kW	Intermediate	Street Lights	Total
<b>Number of Customers/Connections</b>						
2003	1,502	270	22	1	622	2,416
2004	1,482	255	21	1	618	2,376
2005	1,468	247	21	1	620	2,355
2006	1,456	246	20	1	621	2,344
2007	1,444	244	20	1	621	2,329
2008	1,433	238	21	1	620	2,312
2009	1,435	239	21	0	621	2,315
2010	1,424	238	21	0	626	2,308
2011	1,409	232	22	0	632	2,294
2012	1,410	234	20	0	635	2,299
2013	1,413	235	18	0	635	2,300
2014	1,411	234	19	0	633	2,297
2015	1,405	234	19	0	628	2,286

From the historical customer/connection data the growth rate in customer/connection can be evaluated which is provided on the following Table 3-8.

**Table 3-8 Growth Rate in Customer/Connections**

Year	Residential	GS<50 kW	GS>50 kW	Intermediate	Street Lights
<b>Growth Rate in Customers/Connections</b>					
2003					
2004	(1.4%)	(5.7%)	(2.3%)	0.0%	(0.6%)
2005	(0.9%)	(3.1%)	(2.4%)	0.0%	0.3%
2006	(0.8%)	(0.2%)	(2.4%)	0.0%	0.2%
2007	(0.8%)	(1.0%)	0.0%	0.0%	(0.1%)
2008	(0.8%)	(2.5%)	2.5%	0.0%	(0.2%)
2009	0.1%	0.6%	0.0%	0.0%	0.2%
2010	(0.8%)	(0.6%)	2.4%	0.0%	0.7%
2011	(1.1%)	(2.5%)	4.8%	0.0%	1.0%
2012	0.1%	0.9%	(9.1%)	0.0%	0.6%
2013	0.2%	0.4%	(10.0%)	0.0%	0.0%
2014	(0.1%)	(0.2%)	5.6%	0.0%	(0.4%)
2015	(0.4%)	0.0%	0.0%	0.0%	(0.8%)
Geometric Mean	(0.6%)	(1.2%)	(1.0%)	0.0%	0.1%

For the Residential and GS < 50 kW classes the geometric mean analysis was used to forecast the number of customer for 2016 and 2017. The results of the geometric mean analysis were applied to the 2015 customer value to determine the 2016 customer forecast. The 2017 customer forecast is determine by applying the geometric mean factor to the 2016 forecast.

1 For the GS > 50 kW and Street Light classes Atikokan proposes it is reasonable to use the actual  
 2 July 2016 customers and connections as the forecast for 2016 and 2017 since Atikokan believes  
 3 based on local knowledge that these values are more reflective of the values that will occur in the  
 4 forecast period compared to those produced by using the results of the geometric mean analysis.  
 5 Table 3-9 outlines the forecast of customers/connections by rate class.

**Table 3-9 Customer/Connection Forecast**

Year	Residential	GS<50 kW	GS>50 kW	Street Lights	Total
Forecast Number of Customers/Connections					
2016 Bridge	1,397	231	17	625	2,270
2017 Test	1,389	228	17	625	2,260

7  
 8  
 9 The next step in the process is to review the historical customer/connection usage and to reflect  
 10 this usage per customer in the forecast. Table 3-10 below provides the average annual usage per  
 11 customer by rate class from 2003 to 2015.

**Table 3-10 Historical Annual Usage per Customer**

Year	Residential	GS<50 kW	GS>50 kW	Street Lights
Annual kWh Usage Per Customer/Connection				
2003	7,449	22,838	348,713	864
2004	7,323	22,133	340,763	842
2005	7,586	23,026	352,275	816
2006	7,392	22,344	346,738	785
2007	7,592	23,258	361,076	819
2008	7,216	22,680	351,523	789
2009	6,798	20,749	394,872	800
2010	6,973	21,121	356,612	776
2011	6,829	24,272	303,450	744
2012	6,699	22,785	336,138	739
2013	6,962	22,337	390,015	737
2014	6,905	22,718	413,259	738
2015	6,566	21,839	924,795	739

14  
 15  
 16 As can be seen from the above table, usage per customer/connection generally declines after  
 17 2007. It is Atikokan's view that this decline is partially due to the CDM programs initiated in 2006  
 18 and onwards and changing individual usage caused by a variety of factors including weather and  
 19 the economy. Atikokan's customer base is also very sensitive to weather, especially during the

1 winter months, with a substantial amount of primary or supplemental electric heating is used  
 2 throughout Atikokan.

3  
 4 From the historical usage per customer/connection data the growth rate in usage per  
 5 customer/connection can be reviewed which is provided on the following table; Table 3-11. The  
 6 geometric mean growth rate from 2003 to 2015 has also been shown.

7  
 8 **Table 3-11 Growth Rate in Usage per Customer/Connection**

Year	Residential	GS<50 kW	GS>50 kW	Street Lights
<b>Growth Rate in Customer/Connection</b>				
2003				
2004	(1.7%)	(3.1%)	(2.3%)	(2.5%)
2005	3.6%	4.0%	3.4%	(3.1%)
2006	(2.6%)	(3.0%)	(1.6%)	(3.9%)
2007	2.7%	4.1%	4.1%	4.4%
2008	(5.0%)	(2.5%)	(2.6%)	(3.6%)
2009	(5.8%)	(8.5%)	12.3%	1.4%
2010	2.6%	1.8%	(9.7%)	(3.0%)
2011	(2.1%)	14.9%	(14.9%)	(4.2%)
2012	(1.9%)	(6.1%)	10.8%	(0.6%)
2013	3.9%	(2.0%)	16.0%	(0.4%)
2014	(0.8%)	1.7%	6.0%	0.1%
2015	(4.9%)	(3.9%)	123.8%	0.2%
Geometric Mean	(1.0%)	(0.4%)	8.5%	(1.3%)

9  
 10 For the Residential, GS < 50 kW and the Street Light classes, the 2016 and 2017 forecast of  
 11 usage per customer/connection have been held constant at the 2015 level. Atikokan was  
 12 concerned with using the geometric mean factor since it could cause double counting of CDM  
 13 results. For the GS > 50 kW the 2016 and 2017 forecast of usage per customer has been  
 14 calculated as the average of the 2014 and 2015 since Atikokan believes this is a more realistic  
 15 method to forecast the usage for this class considering the significant change in 2015 results  
 16 compared to the prior years. The resulting usage forecast is as follows in Table 3-12.

17  
 18 **Table 3-12 Forecast Annual kWh Usage per Customer/Connection**

Year	Residential	GS<50 kW	GS>50 kW	Street Lights
<b>Forecast Annual kWh Usage per Customers/Connection</b>				
2016 Bridge	6,566	21,839	669,027	739
2017 Test	6,566	21,839	669,027	739

19



The preceding information is used to determine the non-normalized weather billed energy forecast by applying the forecast number of customer/connection from Table 3-9 by the forecast of annual usage per customer/connection from Table 3-12. The resulting non-normalized weather billed energy forecast is shown in the following Table 3-13.

**Table 3-13 Non-normalized Weather Billed Energy Forecast**

Year	Residential	GS<50 kW	GS>50 kW	Street Lights	Total
<b>NON-normalized Weather Billed Energy Forecast (GWh)</b>					
2016 Bridge	9.2	5.0	11.4	0.5	26.1
2017 Test	9.1	5.0	11.4	0.5	25.9

The non-normalized weather billed energy forecast has been determined but this needs to be adjusted in order to be aligned with the total weather normalized billed energy forecast. As previously determined, the total weather normalized billed energy forecast is 27.3 (GWh) for 2016 and 27.7 (GWh) for 2017.

The difference between the non-normalized and normalized forecast adjustments is 1.3 GWh in 2016 (i.e. 27.3 – 26.1) and 1.8 GWh in 2017 (i.e. 27.7 – 25.9). The difference is assumed to be the adjustment needed to move the forecast to a weather normal basis and this amount will be assigned to those rate classes that are weather sensitive. Based on the weather normalization work completed by Hydro One for Atikokan for the cost allocation study, which has been used to support this Application, it was determined that the weather sensitivity by rate classes is as follows in Table 3-14.

**Table 3-14 Weather Sensitivity by Rate Class**

Residential	GS<50 kW	GS>50 kW	Street Lights
<b>Weather Sensitivity</b>			
84%	84%	68%	0%

For the GS > 50 kW class the weather sensitivity amount of 68% was provided in the weather normalization work completed by Hydro One. For the Residential and General Service < 50 kW classes, it was assumed in the 2012 COS application that the weather sensitivity for the Residential and General Service < 50 kW classes was mid-way between 100% and 68%, or 84%. This assumption has been maintained in this application.

1 The difference between the non-normalized and normalized forecast of 1.3 GWh in 2016 and 1.8  
 2 GWh in 2017 has been assigned on a pro rata basis to each rate class based on the above level  
 3 of weather sensitivity.

4  
 5  
 6 **2.3.1.3 CDM Adjustment and LRAMVA**

7  
 8 A manual adjustment has been made to reflect the impact of 2015 to 2017 CDM programs on the  
 9 load forecast. Atikokan has made this adjustment to reflect the “net” impact of the CDM programs  
 10 on the load forecast.

11  
 12 The following Table 3-15, outlines the expected full year savings from 2015 to 2017 CDM  
 13 programs based on the 2015 to 2020 CDM Plan for Atikokan. It assumed that the savings that  
 14 occur in the first year of a program with persist at 100% for the years that follow.

15  
 16 **Table 3-15 2015 to 2017 Expected Full Year Total kWh Savings**

	<b>2015</b>	<b>2016</b>	<b>2017</b>
2015 Programs	64,000	64,000	64,000
2016 Programs		147,000	147,000
2017 Programs			402,000
Total Applicable to Target	64,000	147,000	402,000
Total Including Persistence	64,000	211,000	613,000

17  
 18  
 19 The following outlines how the above information is assigned to rate class based on information  
 20 in Atikokan’s 2015 to 2020 CDM Plan.

21  
 22 **Table 3-16 2015 to 2017 Expected Full Year Residential kWh Savings**

	<b>2015</b>	<b>2016</b>	<b>2017</b>
2015 Programs	42,000	42,000	42,000
2016 Programs		57,000	57,000
2017 Programs			97,000
Total Applicable to Target	42,000	57,000	97,000
Total Including Persistence	42,000	99,000	196,000

**Table 3-17 2015 to 2017 Expected Full Year GS < 50 kW kWh Savings**

	2015	2016	2017
2015 Programs	19,800	19,800	19,800
2016 Programs		81,000	81,000
2017 Programs			274,500
Total Applicable to Target	19,800	81,000	274,500
Total Including Persistence	19,800	100,800	375,300

**Table 3-18 2015 to 2017 Expected Full Year GS > 50 kW kWh Savings**

	2015	2016	2017
2015 Programs	2,200	2,200	2,200
2016 Programs		9,000	9,000
2017 Programs			30,500
Total Applicable to Target	2,200	9,000	30,500
Total Including Persistence	2,200	11,200	41,700

1 Since the regression analysis is based on actual power purchased data up to and including 2015  
 2 actual data, it is assumed that any savings from programs initiated up to and including 2015 are  
 3 reflected in the prediction equation resulting from the regression analysis. However, for 2015 it is  
 4 assumed that for those programs that were initiated in 2015 only one half of the full year results  
 5 actually occur since they were initiated throughout the year. This has been classified as the half  
 6 year rule for CDM purposes. As a result, consistent with approach used in previous COS  
 7 applications and using the rate class specific information mentioned above, the following equation  
 8 is used to determine the rate class manual CDM adjustment for each year.

9  
 10 Rate class CDM adjustment 2016 = 2015 Programs rate class savings x 50% + 2016 Programs  
 11 rate class savings x 50%

12  
 13 Rate class CDM adjustment 2017 = 2015 Programs rate class savings x 50% + 2016 Programs  
 14 rate class savings + 2017 Programs rate class savings x 50%

15  
 16 The following table outlines the CDM adjustment by rate class.

17

**Table 3-19 Manual CDM Adjustment by Rate Class (kWh)**

Year	Residential	GS<50 kW	GS>50 kW	Total
2016 Bridge	49,500	50,400	5,600	105,500
2017 Test	126,500	228,150	25,350	380,000

In accordance with the Guidelines for Electricity Distributor Conservation and Demand Management (EB-2013-0003), issued April 26, 2013 (“CDM Guidelines”), it is Atikokan’s understanding that as part of this application expected CDM savings in 2017 from 2016 and 2017 programs will need to be established for lost revenue adjustment mechanism (“LRAM”) variance accounts purposes. Atikokan also understands that the IESO will measure CDM results on a full year net basis. Consistent with past practices, it is expected the full year net level of savings will be used for LRAM variance calculations. As a result, it is Atikokan’s view the units used for the LRAM variance account should also be on a full year net basis. Based on the evidence provided above in regards to the CDM manual adjustment the following equation is used to determine the rate class kWh assumed in the load forecast for LRAM variance account purposes

Rate class LRAMVA Threshold 2017 = Rate class 2016 Program savings + Rate class 2017 Program savings. The conversion to kW for the GS > 50 kW class uses the kW/kWh factor from Table

**Table 3-20 2017 Expected CDM Savings by Rate Class for LRAM Variance Account**

Year	Residential	GS<50 kW	GS>50 kW	Total
2017 Test - kWh	154,000	355,500	39,500	549,000
2017 Test - kW Annual			112	112
2017 Test - kW Monthly			9	9

The following Table 3-21 outlines how the classes have been adjusted to align the non-normalized forecast with the normalized forecast and reflect the adjustments discussed above.

**Table 3-21 Alignment of Non-normal to Weather Normal Forecast**

<b>Table 3-21: Alignment of Non-normal to Weather Normal Forecast</b>					
<b>Year</b>	<b>Residential</b>	<b>GS&lt;50 kW</b>	<b>GS&gt;50 kW</b>	<b>Street Lights</b>	<b>Total</b>
<b>Non-normalized Weather Billed Energy Forecast (GWh)</b>					
2016 Bridge	9.2	5.0	11.4	0.5	26.1
2017 Test	9.1	5.0	11.4	0.5	25.9
<b>Weather Adjustment (GWh)</b>					
2016 Bridge	0.5	0.3	0.5	0.0	1.3
2017 Test	0.7	0.4	0.7	0.0	1.8
<b>CDM Adjustment (GWh)</b>					
2016 Bridge	(0.05)	(0.05)	(0.01)		(0.1)
2017 Test	(0.13)	(0.23)	(0.03)		(0.4)
<b>Weather Normalized Billed Energy Forecast (GWh)</b>					
2016 Bridge	9.6	5.3	11.9	0.5	27.2
2017 Test	9.7	5.1	12.0	0.5	27.3

**Billed KW Load Forecast**

There are two rate classes that charge volumetric distribution on per kW basis. These include GS > 50 kW and Street Lights. The forecast of kW for these classes is based on a review of the historical ratio of kW to kWh and applying the average ratio to the forecasted kWh to produce the required kW.

The following Table 3-22 outlines the annual demand units by applicable rate class on actual and weather normal basis. The weather normal values are actual values adjusted by the weather normal conversion factor outlined in Table 3-6.

**Table 3-22 Historical Annual kW per Applicable Rate Class**

<b>Year</b>	<b>GS&gt;50 kW</b>	<b>Street Lights</b>	<b>Total</b>	<b>GS&gt;50 kW</b>	<b>Street Lights</b>	<b>Total</b>
<b>Billed Annual kW</b>						
	<b>Actual</b>			<b>Weather Normal</b>		
2003	20,708	1,601	22,309	20,668	1,598	22,266
2004	16,244	956	17,200	16,139	950	17,089
2005	20,153	1,512	21,664	20,097	1,507	21,605
2006	18,817	1,462	20,279	18,943	1,472	20,415
2007	18,838	1,454	20,292	18,767	1,448	20,216
2008	18,111	1,459	19,570	17,837	1,437	19,273
2009	21,388	1,041	22,429	21,293	1,036	22,329
2010	22,208	1,449	23,657	23,023	1,502	24,525
2011	20,694	1,450	22,144	20,779	1,456	22,235
2012	22,335	1,450	23,785	22,864	1,484	24,348
2013	21,680	1,450	23,130	21,350	1,428	22,778
2014	24,636	1,455	26,091	24,264	1,433	25,697
2015	50,899	1,436	52,335	51,095	1,442	52,537

1 The following Table 3-23 shows the historical ratio of kW/kWh as well as the average

2 **Table 3-23 Historical kW/KWh Ratio per Applicable Rate Class**

Year	GS>50 kW	Street Lights
<b>Ratio of kW to kWh</b>		
2003	0.2762%	0.2983%
2004	0.2270%	0.1839%
2005	0.2791%	0.2988%
2006	0.2713%	0.3001%
2007	0.2609%	0.2861%
2008	0.2513%	0.2983%
2009	0.2642%	0.2094%
2010	0.2965%	0.2985%
2011	0.3100%	0.3088%
2012	0.3322%	0.3088%
2013	0.3088%	0.3100%
2014	0.3138%	0.3119%
2015	0.2897%	0.3098%
Average 2003 to 2015	0.2832%	0.2864%

3  
 4 For the GS > 50 kW class, the average ratio was applied to the weather normalized billed energy  
 5 forecast in Table 3-21 to provide the forecast of kW for this class. For the Street Lights class the  
 6 2015 ratio was applied to the weather normalized billed energy forecast in Table 3-21 since using  
 7 the average value resulted in a kW forecast that was unrealistically low.

8  
 9 The following Table 3-24 outlines the forecast of kW for the applicable rate classes.

10 **Table 3-24 kW Forecast by Applicable Rate Class**

Year	GS>50 kW	Street Lights	Total
<b>Predicted Billed kW</b>			
2016 Bridge	33,610	1,430	35,040
2017 Test	34,102	1,430	35,532

11  
 12 Table 3-25 provides a summary of the total load forecast on a power purchased and billed level.  
 13  
 14  
 15  
 16  
 17

1

**Table 3-25 Summary of Total Load Forecast**

2011 Actual	2012 Board Approved	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Bridge	2017 Test
<b>Purchases</b>							
24,741,815		24,288,144	24,871,617	25,633,173	34,806,669		
24,918,760		26,143,107	28,220,258	29,188,104	29,259,600	29,607,314	30,012,110
0.7%		7.6%	13.5%	13.9%	(15.9%)		
						1.0830	1.0830
						27,337,813	27,711,580
						105,500	380,000
22,383,850		21,958,203	22,559,900	23,377,488	32,370,291	27,232,313	27,331,580
<b>Billing Determinants</b>							
1,409	1,424	1,410	1,413	1,411	1,405	1,397	1,389
9,619,204	11,113,021	9,445,561	9,833,794	9,743,006	9,225,364	9,625,755	9,687,147
232	235	234	235	234	234	231	228
5,619,045	6,246,087	5,320,355	5,238,114	5,315,999	5,110,232	5,275,055	5,139,223
22	15	20	18	19	19	17	17
6,675,900	5,218,563	6,722,750	7,020,268	7,851,921	17,571,100	11,869,754	12,043,461
20,694	13,872	22,335	21,680	24,636	50,899	33,610	34,102
632	623	635	635	633	628	625	625
469,701	466,493	469,537	467,724	466,563	463,596	461,749	461,749
1,450	1,316	1,450	1,450	1,455	1,436	1,430	1,430
2,294	2,297	2,299	2,300	2,297	2,286	2,270	2,260
22,383,850	23,044,164	21,958,203	22,559,900	23,377,488	32,370,291	27,232,313	27,331,580
22,144	15,188	23,785	23,130	26,091	52,335	35,040	35,532

2.3.2 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

Variance Analysis of Distribution Revenue and Billing Determinants

The following discussion provides a year over year variance analysis on Atikokan’s distribution revenue and billing determinants. The variance analysis will compare 2012 Actual to 2012 Board Approved; 2011 Actual to 2012 Actual; 2012 Actual to 2013 Actual; 2013 Actual to 2014 Actual; 2014 Actual to 2015 Actual; 2015 Actual to 2016 Bridge and 2016 Bridge Year to 2017 Test Year. The distribution revenue variance analysis is based on information provided in Table 3-1. The billing determinant variance analysis is based on data outlined in Table 3-25. The overall variance analysis has been provided based on Atikokan’s materiality of \$50,000; the materiality calculation being noted earlier in Exhibit 1 of this Application.

2012 Actual vs 2012 Board Approved

**Table 3-26 Distribution Revenue - 2012 Actual vs 2012 Board Approved**

Throughput Revenue	2012 Actual	2012 Board Approved	Difference \$	Difference %
Residential	\$676,859	\$746,244	\$69,385	10.3%
GS<50	\$249,046	\$287,448	\$38,402	15.4%
GS>50	\$151,058	\$115,030	-\$36,028	-23.9%
Street Lights	\$91,061	\$84,093	-\$6,968	-7.7%
Total	\$1,168,023	\$1,232,815	\$64,792	5.5%

2012 Actual was \$64,792 or 5.5% less than the 2012 Board Approved \$1,232,815. An explanation for the variances between 2012 Board Approved distribution revenue and 2012 Actual is as follows.

Atikokan 2012 Board approved Load Forecast did not materialize with the exception of the GS > 50 class whereby it was greater than the Board Approved amount by \$36,028 driven by increased demand. The main driver for the variance is the Residential Rate Class is the variable Distribution Volumetric Charge.



**Table 3-27 Billing Determinants - 2012 Actual vs 2012 Board Approved**

Billing Quantities	Customers / Connections		Units	Volume		Volume Weather Normal		Annual Usage Per Customer / Connection		Annual Usage Per Customer / Connection Weather Normal	
	2012 Actual	2012 Board Approved		2012 Actual	2012 Board Approved	2012 Actual	2012 Board Approved	2012 Actual	2012 Board Approved	2012 Actual	2012 Board Approved
<b>Weather Normal Conversion Factor</b>						1.0237					
Residential	1,410	1,424	kWh	9,445,561	11,113,021	9,669,435	11,113,021	6,699	7,804	6,858	7,804
GS<50	234	235	kWh	5,320,355	6,246,087	5,446,456	6,246,087	22,785	26,579	23,325	26,579
GS>50	20	15	kW	22,335	13,872	22,864	13,872	1,117	925	1,143	925
Street Lights	635	623	kW	1,450	1,316	1,484	1,316	2	2	2	2
Total	2,299	2,297									
	Variance			Variance		Variance		Variance		Variance	
Residential	14		kWh	1,667,460		1,443,586		1,105		946	
GS<50	2		kWh	925,731		799,631		3,794		3,254	
GS>50	(5)		kW	(8,463)		(8,992)		(192)		(218)	
Street Lights	(12)		kW	(134)		(168)		(0)		(0)	

In the Residential class the number of customers assumed in the 2012 Board Approved was never achieved which contributed to the lower volumetric difference in 2012 Actual. In addition, the 2012 actual kWh was lower than the 2012 Board Approved kWh resulting from a 9% overall lower actual heating degree day value in 2012 compared to the weather normal value assumed in the 2012 Board Approved kWh.

In the General Service < 50 kW class the variance in both count and kWh is immaterial. In the General Service 50 to 4,999 kW the difference in actual volume 23,785 kW compared to Board Approved 15,188 kW is demand of 8,597 kW. Fluctuations in these class year over year result from a number of factors including reclassification of accounts to/from the GS<50 kW class, the loss of existing customers due to businesses closing and the opening of new businesses not necessarily at a one to one ratio.

For the Street Lighting class even though the actual 635 number of connections were higher than Board Approved the actual kW were slightly lower than the Board Approved. Connections were added but overall wattage remained constant with an immaterial change for volume. Atikokan believes this is due to a clerical error.

2011 Actual vs 2012 Actual

**Table 3-28 Distribution Revenue - 2011 Actual vs 2012 Actual**

Throughput Revenue	2011 Actual	2012 Actual	Difference \$	Difference %
Residential	\$618,479	\$676,859	\$58,379	9.4%
GS<50	\$235,090	\$249,046	\$13,957	5.9%
GS>50	\$142,581	\$151,058	\$8,477	5.9%
Street Lights	\$75,441	\$91,061	\$15,620	20.7%
Total	\$1,071,590	\$1,168,023	\$96,433	9.0%

The primary driver of the increase in distribution revenue 2011 Actual to 2012 Actual for all classes is the approved Rate Application EB-2011-0293 for Fixed and Distribution Volumetric service charges.

**Table 3-29 Billing Determinants - 2011 Actual vs 2012 Actual**

Billing Quantities	Customers / Connections		Units	Volume		Volume Weather Normal		Annual Usage Per Customer / Connection		Annual Usage Per Customer / Connection Weather Normal	
	2011 Actual	2012 Actual		2011 Actual	2012 Actual	2011 Actual	2012 Actual	2011 Actual	2012 Actual	2011 Actual	2012 Actual
<b>Weather Normal Conversion Factor</b>						1.0041	1.0237				
Residential	1,409	1,410	kWh	9,619,204	9,445,561	9,658,641	9,669,435	6,829	6,699	6,857	6,858
GS<50	232	234	kWh	5,619,045	5,320,355	5,642,082	5,446,456	24,272	22,785	24,372	23,325
GS>50	22	20	kW	20,694	22,335	20,779	22,864	941	1,117	944	1,143
Street Lights	632	635	kW	1,450	1,450	1,456	1,484	2	2	2	2
Total	2,294	2,299									
Variance				Variance		Variance		Variance		Variance	
Residential	2		kWh	(173,643)		10,794		(130)		0	
GS<50	2		kWh	(298,690)		(195,627)		(1,487)		(1,047)	
GS>50	(2)		kW	1,641		2,085		176		199	
Street Lights	4		kW	(0)		28		(0)		0	

Fluctuations in customer counts are a result of many factors including the averaging of counts over a 12 month period, account reclassifications, businesses closing, the timing of customers opening and closing accounts, moves, etc. The count variance year over year is immaterial. The 10% reduction in kW related to the GS 50 to 4,999 kW class is a result of a slow-down experienced by the industrial customers in this class.

2012 Actual vs 2013 Actual

**Table 3-30 Distribution Revenue - 2012 Actual vs 2013 Actual**

Throughput Revenue	2012 Actual	2013 Actual	Difference \$	Difference %
Residential	\$676,859	\$773,906	\$97,047	14.3%
GS<50	\$249,046	\$276,074	\$27,027	10.9%
GS>50	\$151,058	\$163,590	\$12,533	8.3%
Street Lights	\$91,061	\$111,656	\$20,596	22.6%
Total	\$1,168,023	\$1,325,226	\$157,203	13.5%

Upon final approval in Decision and Order Smart Meter Audit EB-2013-0019 Atikokan was approved for Smart Meter rate riders to customers of all classes with exception of Street Lighting.

- Rate Rider for Disposition of Residual Incremental Historical Smart Meter Costs –effective until August 31, 2015.
- Rate Rider for Recovery of Smart Meter Incremental Revenue Requirement – in effect until the next cost of service-based rate order.

**Table 3-31 Billing Determinants - 2012 Actual vs 2013 Actual**

Billing Quantities	Customers /		Units	Volume		Volume Weather		Annual Usage Per		Annual Usage Per	
	2012 Actual	2013 Actual		2012 Actual	2013 Actual	2012 Actual	2013 Actual	2012 Actual	2013 Actual	2012 Actual	2013 Actual
Weather Normal Conversion Factor						1.0237	0.9848				
Residential	1,410	1,413	kWh	9,445,561	9,833,794	9,669,435	9,684,124	6,699	6,962	6,858	6,856
GS<50	234	235	kWh	5,320,355	5,238,114	5,446,456	5,158,390	22,785	22,337	23,325	21,997
GS>50	20	18	kW	22,335	21,680	22,864	21,350	1,117	1,204	1,143	1,186
Street Lights	635	635	kW	1,450	1,450	1,484	1,428	2	2	2	2
Total	2,299	2,300									
	Variance			Variance		Variance		Variance		Variance	
Residential	3		kWh	388,233		14,689		263		(2)	
GS<50	1		kWh	(82,241)		(288,066)		(448)		(1,328)	
GS>50	(2)		kW	(655)		(1,514)		88		43	
Street Lights	0		kW	0		(56)		0		(0)	

The change in year over year Volumetric Distribution revenue in all classes is immaterial.

2013 Actual vs 2014 Actual

**Table 3-32 Distribution Revenue - 2013 Actual vs 2014 Actual**

Throughput Revenue	2013 Actual	2014 Actual	Difference \$	Difference %
Residential	\$773,906	\$781,985	\$8,079	1.0%
GS<50	\$276,074	\$275,250	-\$823	-0.3%
GS>50	\$163,590	\$173,917	\$10,327	6.3%
Street Lights	\$111,656	\$112,397	\$741	0.7%
Total	\$1,325,226	\$1,343,549	\$18,323	1.4%

1

2 The change in year over year distribution revenue in all classes is immaterial.

3

**Table 3-33 Billing Determinants - 2013 Actual vs 2014 Actual**

Billing Quantities	Customers /		Units	Volume		Volume Weather		Annual Usage Per		Annual Usage Per	
Weather Normal Conversion Factor								0.9848	0.9849		
	2013 Actual	2014 Actual		2013 Actual	2014 Actual	2013 Actual	2014 Actual	2013 Actual	2014 Actual	2013 Actual	2014 Actual
Residential	1,413	1,411	kWh	9,833,794	9,743,006	9,684,124	9,595,906	6,962	6,905	6,856	6,801
GS<50	235	234	kWh	5,238,114	5,315,999	5,158,390	5,235,738	22,337	22,718	21,997	22,375
GS>50	18	19	kW	21,680	24,636	21,350	24,264	1,204	1,297	1,186	1,277
Street Lights	635	633	kW	1,450	1,455	1,428	1,433	2	2	2	2
Total	2,300	2,297									
	Variance			Variance		Variance		Variance		Variance	
Residential	(2)		kWh	(90,789)		(88,218)		(57)		(55)	
GS<50	(1)		kWh	77,885		77,348		381		378	
GS>50	1		kW	2,956		2,914		92		91	
Street Lights	(3)		kW	5		5		0		0	

4

5 The change in year over year Volumetric Distribution revenue in all classes is immaterial.

6 **2014 Actual vs 2015 Actual**

7

**Table 3-34 Distribution Revenue - 2014 Actual vs 2015 Actual**

Throughput Revenue	2014 Actual	2015 Actual	Difference \$	Difference %
Residential	\$781,985	\$769,099	-\$12,886	-1.6%
GS<50	\$275,250	\$271,053	-\$4,197	-1.5%
GS>50	\$173,917	\$231,321	\$57,404	33.0%
Street Lights	\$112,397	\$113,146	\$749	0.7%
Total	\$1,343,549	\$1,384,619	\$41,070	3.1%

8

9 The change in year over year distribution revenue in all classes is immaterial with the exception  
 10 of GS >50kW.

11

1 Table 3-34 above shows the 2014 Actual distribution revenue increased by \$57,404 or 33.0%  
 2 for Actual 2015 distribution revenue. This is mainly contributable to an increase in the GS > 50  
 3 rate class adding additional revenue through a service added the end of 2014. The residential  
 4 class seen a drop in revenue by 1.6% but was offset by the other rate classes as the table  
 5 reflects.

6 **Table 3-35 Billing Determinants - 2014 Actual vs 2015 Actual**

Billing Quantities	Customers /		Units	Volume		Volume Weather		Annual Usage Per		Annual Usage Per	
Weather Normal Conversion Factor						0.9849	1.0039				
	2014 Actual	2015 Actual		2014 Actual	2015 Actual	2014 Actual	2015 Actual	2014 Actual	2015 Actual	2014 Actual	2015 Actual
Residential	1,411	1,405	kWh	9,743,006	9,225,364	9,595,906	9,260,923	6,905	6,566	6,801	6,591
GS<50	234	234	kWh	5,315,999	5,110,232	5,235,738	5,129,929	22,718	21,839	22,375	21,923
GS>50	19	19	kW	24,636	50,899	24,264	51,095	1,297	2,679	1,277	2,689
Street Lights	633	628	kW	1,455	1,436	1,433	1,442	2	2	2	2
Total	2,297	2,286									
	Variance			Variance		Variance		Variance		Variance	
Residential	(6)		kWh	(517,642)		(334,983)		(339)		(209)	
GS<50	0		kWh	(205,767)		(105,809)		(879)		(452)	
GS>50	0		kW	26,263		26,831		1,382		1,412	
Street Lights	(5)		kW	(19)		9		(0)		0	

7  
 8 Similar to explanations provided for Table 3-34; 2015 Actual volume increased from 2014 Actual  
 9 as a result of an additional GS > 50 customer connecting service the end of 2014. The additional  
 10 load is significant for the size of Atikokan's customer base. The decrease in the number of Street  
 11 Light connections is a result of a customer configuring their streetlights to a smart metering and  
 12 billing Time-of-Use as a general service < 50 rate class.

13 **2015 Actual vs 2016 Bridge**

14 **Table 3-36 Distribution Revenue – 2015 Actual vs 2016 Bridge**

Throughput Revenue	2015 Actual	2016 Bridge	Difference \$	Difference %
Residential	\$769,099	\$728,871	-\$40,228	-5.2%
GS<50	\$271,053	\$265,789	-\$5,264	-1.9%
GS>50	\$231,321	\$225,123	-\$6,198	-2.7%
Street Lights	\$113,146	\$113,226	\$80	0.1%
Total	\$1,384,619	\$1,333,009	-\$51,610	-3.7%

15  
 16  
 17 The change is immaterial overall for all classes. Residential difference is -\$40,228 or -5.2% due  
 18 to fewer residential customers and the average consumption dropped from 581 kW per month to  
 19 an average of 547 kW.

**Table 3-37 Billing Determinants - 2015 Actual vs 2016 Bridge**

Billing Quantities	Customers /		Units	Volume		Volume Weather		Annual Usage Per		Annual Usage Per	
	2015 Actual	2016 Bridge		2015 Actual	2016 Bridge	2015 Actual	2016 Bridge	2015 Actual	2016 Bridge	2015 Actual	2016 Bridge
<b>Weather Normal Conversion Factor</b>						1.0039	1.0000				
Residential	1,405	1,397	kWh	9,225,364	9,625,755	9,260,923	9,625,755	6,566	6,889	6,591	6,889
GS<50	234	231	kWh	5,110,232	5,275,055	5,129,929	5,275,055	21,839	22,813	21,923	22,813
GS>50	19	17	kW	50,899	33,610	51,095	33,610	2,679	1,977	2,689	1,977
Street Lights	628	625	kW	1,436	1,430	1,442	1,430	2	2	2	2
Total	2,286	2,270									
	Variance			Variance		Variance		Variance		Variance	
Residential	(8)		kWh	400,392		364,833		323		298	
GS<50	(3)		kWh	164,823		145,125		975		891	
GS>50	(2)		kW	(17,289)		(17,485)		(702)		(712)	
Street Lights	(3)		kW	(6)		(11)		0		(0)	

The Street Light class, the year over year differences among the rate classes for customers/connections are immaterial. The demand reduction of 17,289 kW in the GS >50 to 4,999 kW class is related to a drop in customers during the 2016 Bridge year and the outputs of the load forecast using consideration of historical averages. The variances in the other classes are less than 5% year over year and assumptions made in the load forecast are explained in the section above under “Summary of Load and Customer/Connection Forecast”.

**2016 Bridge vs 2017 Test**

**Table 3-38 Distribution Revenue - 2016 Bridge vs 2017 Test**

Throughput Revenue	2016 Bridge	2017 Test	Difference \$	Difference %
Residential	\$728,871	\$835,939	\$107,068	14.7%
GS<50	\$265,789	\$286,975	\$21,186	8.0%
GS>50	\$225,123	\$196,020	-\$29,103	-12.9%
Street Lights	\$113,226	\$96,516	-\$16,710	-14.8%
Total	\$1,333,009	\$1,415,450	\$82,441	6.2%

The proposed Test Year distribution revenue is \$82,441 or 6.2% higher than the 2016 Bridge year. This variance is due to the increased revenue resulting from this 2017 COS application. Atikokan followed Cost Allocation Model and policy thereby increasing Residential and GS<50 kW and decreasing GS>50kW and Street Lighting throughput revenue ratios.

Table 3-39 below compares the 2016 Bridge Year billing quantities to the 2017 Test Year billing quantities.

**Table 3-39 Billing Determinants - 2016 Bridge vs 2017 Test**

Billing Quantities	Customers /		Units	Volume		Volume Weather		Annual Usage Per		Annual Usage Per	
	2016 Bridge	2017 Test		2016 Bridge	2017 Test	2016 Bridge	2017 Test	2016 Bridge	2017 Test	2016 Bridge	2017 Test
<b>Weather Normal Conversion Factor</b>						1.0000	1.0000				
Residential	1,397	1,389	kWh	9,625,755	9,687,147	9,625,755	9,687,147	6,889	6,972	6,889	6,972
GS<50	231	228	kWh	5,275,055	5,139,223	5,275,055	5,139,223	22,813	22,493	22,813	22,493
GS>50	17	17	kW	33,610	34,102	33,610	34,102	1,977	2,006	1,977	2,006
Street Lights	625	625	kW	1,430	1,430	1,430	1,430	2	2	2	2
Total	2,270	2,260									
	Variance			Variance		Variance		Variance		Variance	
Residential	(8)		kWh	61,391		61,391		83		83	
GS<50	(3)		kWh	(135,831)		(135,831)		(321)		(321)	
GS>50	0		kW	492		492		29		29	
Street Lights	0		kW	0		0		0		0	

Year over year changes are a result of the inputs of the load forecast model which is explained in detail above. Flat growth rates, minimal increases to kWh, and reduced kW are appropriate on a go forward basis for rate setting purposes. Both rate classes GS > 50 and Street Lighting are assumed to remain the same as the 2016 Bridge year for the 2017 Test Year. Both the Residential and General Service < 50 rate class are forecasted to decline based on the historical counter counts showing a trend of decline. Changes from the end of the 2015 historical year to June 30, 2016 of the Bridge Year is evidence to support this forecast.

### Transformer Allowance

Atikokan currently provides a Transformer Ownership Allowance Credit of 10% of the GS > 50 kW class kW volumetric distribution rate to those customers that own their own transformer facilities. Atikokan is proposing to maintain this rate for the 2017 Test Year for eligible customers.

1 **2.3.3 OTHER REVENUE**

2 Other revenue is made up of SSS Administration Revenue, Rent for Electricity Property, Late  
 3 Payment Charges, Specific Service Charges, Merchandising Revenue vs Costs, Retailer  
 4 Service Charge, Miscellaneous Revenue and Interest Income.

5 SSS Administration and Rent for Electricity Property fluctuates minimally. Late Payment  
 6 Charges have remained consistent throughout the past few years. Atikokan has noticed a  
 7 modest increase due to Customers with larger balances not paying prior due dates. Given the  
 8 customer is given 21 days to pay their bill and with various easy pay methods there is little  
 9 movement for reversing these late fees. Interest income has made an improvement due to the  
 10 increase in available cash in our bank account.

11 Miscellaneous Revenue is mostly the sale of scrap materials to salvage yards.

12 We have arranged with our major customer to make prepayments on account to minimize the  
 13 utility's liability but also reducing the risk and impacts on rates to other customer rate classes.

14 Table 3-40 below summarizes the variances by account description.

15 **Table 3-40 Other Revenue - 2011 Actual vs 2012 Actual**

<b>Other Distribution Revenue</b>	2011 Actual	2012 Actual	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,633	\$4,741	\$108	2.3%
Rent from Electric Property (4210)	\$34,911	\$31,625	-\$3,286	-9.4%
Late Payment Charges (4225)	\$4,809	\$6,424	\$1,615	33.6%
Specific Service Charges (4235)	\$6,330	\$6,079	-\$251	-4.0%
Merchandise & Jobbing Revenue (4325)	\$89,497	\$66,608	-\$22,890	-25.6%
Merchandise & Jobbing Costs (4330)	-\$24,174	-\$29,758	-\$5,584	23.1%
Other Distribution Rev. (4082, 4084, 4390)	\$9,922	\$11,660	\$1,738	17.5%
Other Income & Exp. (4405)	\$11,012	\$12,876	\$1,864	16.9%
<b>Total</b>	<b>\$136,940</b>	<b>\$110,255</b>	<b>-\$26,685</b>	<b>-19.5%</b>

17

18

19



1 Table 3-41 below summarizes the variances by account description.

2 **Table 3-41 Other Revenue - 2012 Actual vs 2013 Actual**

<b>Other Distribution Revenue</b>	2012 Actual	2013 Actual	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,741	\$4,845	\$104	2.2%
Rent from Electric Property (4210)	\$31,625	\$31,625	\$0	0.0%
Late Payment Charges (4225)	\$6,424	\$6,376	-\$47	-0.7%
Specific Service Charges (4235)	\$6,079	\$6,278	\$199	3.3%
Merchandise & Jobbing Revenue (4325)	\$66,608	\$70,407	\$3,800	5.7%
Merchandise & Jobbing Costs (4330)	-\$29,758	-\$58,208	-\$28,450	95.6%
Other Distribution Rev. (4082, 4084, 4390)	\$11,660	\$10,754	-\$906	-7.8%
Other Income & Exp. (4405)	\$12,876	\$5,332	-\$7,544	-58.6%
<b>Total</b>	<b>\$110,255</b>	<b>\$77,410</b>	<b>-\$32,845</b>	<b>-29.8%</b>

3

4  
 5 Table 3-42 below summarizes the variances by account description followed by a discussion on  
 6 those variances over \$50,000.

7 **Table 3-42 Other Revenue - 2013 Actual vs 2014 Actual**

<b>Other Distribution Revenue</b>	2013 Actual	2014 Actual	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,845	\$4,906	\$61	1.3%
Rent from Electric Property (4210)	\$31,625	\$31,625	\$0	0.0%
Late Payment Charges (4225)	\$6,376	\$8,072	\$1,696	26.6%
Specific Service Charges (4235)	\$6,278	\$6,640	\$363	5.8%
Merchandise & Jobbing Revenue (4325)	\$70,407	\$128,340	\$57,933	82.3%
Merchandise & Jobbing Costs (4330)	-\$58,208	-\$87,015	-\$28,807	49.5%
Other Distribution Rev. (4082, 4084, 4390)	\$10,754	\$13,204	\$2,450	22.8%
Other Income & Exp. (4405)	\$5,332	\$7,789	\$2,457	46.1%
<b>Total</b>	<b>\$77,410</b>	<b>\$113,562</b>	<b>\$36,152</b>	<b>46.7%</b>

8

9 In 2014 the Merchandize and Jobbing has a variance of \$57,933. This difference results from  
 10 additional merchandising and jobbing for the year compared to the prior year 2013. During  
 11 2014, Atikokan performed and billed a customer accordingly for time, materials and equipment  
 12 used for installation of power line to new substation per customer request. This job was less

1 than the materiality threshold of \$50,000; however the job was a significant contributor to the  
 2 additional revenue in merchandising.

3 Table 3-43 below summarizes the variances by account description followed by a discussion on  
 4 those variances over \$50,000.

**Table 3-43 Other Revenue - 2014 Actual vs 2015 Actual**

<b>Other Distribution Revenue</b>	2014 Actual	2015 Actual	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,906	\$4,884	-\$22	-0.5%
Rent from Electric Property (4210)	\$31,625	\$31,625	\$0	0.0%
Late Payment Charges (4225)	\$8,072	\$9,300	\$1,227	15.2%
Specific Service Charges (4235)	\$6,640	\$4,542	-\$2,098	-31.6%
Merchandise & Jobbing Revenue (4325)	\$128,340	\$91,224	-\$37,116	-28.9%
Merchandise & Jobbing Costs (4330)	-\$87,015	-\$23,705	\$63,310	-72.8%
Other Distribution Rev. (4082, 4084, 4390)	\$13,204	\$13,079	-\$125	-0.9%
Other Income & Exp. (4405)	\$7,789	\$9,491	\$1,702	21.9%
<b>Total</b>	<b>\$113,562</b>	<b>\$140,440</b>	<b>\$26,878</b>	<b>23.7%</b>

6

7 In 2015, costs associated to Merchandize and Jobbing were \$63,310 or 72.8% less than 2014.  
 8 Similarly to the explanation for the variance reported in Table 3-42 on the previous page, 2014  
 9 Atikokan performed a customer request increasing revenue earned and therefore greater  
 10 expenses incurred for the prior year. Another explanation for the decrease in the expenses  
 11 recognized to the Merchandise and Jobbing cost account is under the International Financial  
 12 Statement Reporting recognizing the difference, labour costs are recorded in operating not  
 13 jobbing expense.

14 Table 3-44 below summarizes the variances by account description.

15  
 16  
 17  
 18

**Table 3-44 Other Revenue - 2015 Actual vs 2016 Bridge**

Other Distribution Revenue	2015 Actual	2016 Bridge	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,884	\$4,875	-\$9	-0.2%
Rent from Electric Property (4210)	\$31,625	\$32,609	\$984	3.1%
Late Payment Charges (4225)	\$9,300	\$7,286	-\$2,014	-21.7%
Specific Service Charges (4235)	\$4,542	\$5,861	\$1,319	29.0%
Merchandise & Jobbing Revenue (4325)	\$91,224	\$59,171	-\$32,053	-35.1%
Merchandise & Jobbing Costs (4330)	-\$23,705	-\$34,351	-\$10,646	44.9%
Other Distribution Rev. (4082, 4084, 4390)	\$13,079	\$8,800	-\$4,279	-32.7%
Other Income & Exp. (4405)	\$9,491	\$8,872	-\$619	-6.5%
<b>Total</b>	<b>\$140,440</b>	<b>\$93,123</b>	<b>-\$47,317</b>	<b>-33.7%</b>

Table 3-45 below summarizes the variances by account description.

**Table 3-45 Other Revenue – 2016 Bridge Actual vs 2017 Test**

Other Distribution Revenue	2016 Bridge	2017 Test	Difference \$	Difference %
SSS Administration Revenue (4086)	\$4,875	\$4,875	\$0	0.0%
Rent from Electric Property (4210)	\$32,609	\$32,609	\$0	0.0%
Late Payment Charges (4225)	\$7,286	\$7,543	\$257	3.5%
Specific Service Charges (4235)	\$5,861	\$5,885	\$24	0.4%
Merchandise & Jobbing Revenue (4325)	\$59,171	\$70,000	\$10,829	18.3%
Merchandise & Jobbing Costs (4330)	-\$34,351	-\$34,351	\$0	0.0%
Other Distribution Rev. (4082, 4084, 4390)	\$8,800	\$8,420	-\$380	-4.3%
Other Income & Exp. (4405)	\$8,872	\$7,789	-\$1,083	-12.2%
<b>Total</b>	<b>\$93,123</b>	<b>\$102,770</b>	<b>\$9,647</b>	<b>10.4%</b>

APPENDIX 3-A

MONTHLY DATA USED FOR REGRESSION ANALYSIS

	<u>Purchased</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Number of Days in Month</u>	<u>Intermediate Class Flag</u>	<u>Number of Customers/Connections</u>	<u>Ontario Real GDP Monthly %</u>	<u>Predicted Purchases</u>
May-02	4,573,577	338.7	2.9	31	1	2,460	122.95	4,347,702
Jun-02	4,260,627	79.7	35.3	30	1	2,457	123.31	4,135,973
Jul-02	4,562,117	12.1	84.5	31	1	2,453	123.68	4,297,733
Aug-02	4,203,237	33.7	28.2	31	1	2,450	124.04	4,133,703
Sep-02	3,873,917	143.8	23.3	30	1	2,446	124.41	4,102,293
Oct-02	4,274,057	540.7	0	31	1	2,443	124.78	4,416,182
Nov-02	4,161,567	706.8	0	30	1	2,440	125.14	4,443,082
Dec-02	4,409,707	850.9	0	31	1	2,436	125.51	4,627,066
Jan-03	5,097,790	989.2	0	31	1	2,433	125.66	4,710,651
Feb-03	4,717,710	994.6	0	28	1	2,430	125.81	4,428,648
Mar-03	4,446,570	769.1	0	31	1	2,426	125.95	4,488,526
Apr-03	3,975,240	433.3	0	30	1	2,423	126.10	4,113,388
May-03	3,844,650	212.6	0	31	1	2,419	126.24	4,002,757
Jun-03	3,428,880	86	16	30	1	2,416	126.39	3,838,406
Jul-03	3,846,460	28.4	35.3	31	1	2,413	126.54	3,912,081
Aug-03	2,891,760	29.7	56.8	31	0	2,409	126.68	2,414,686
Sep-03	1,967,640	173.2	9	30	0	2,406	126.83	2,275,435
Oct-03	2,417,070	412.9	1.4	31	0	2,403	126.98	2,503,468
Nov-03	2,458,490	667.8	0	30	0	2,399	127.12	2,587,273
Dec-03	2,768,410	832.8	0	31	0	2,396	127.27	2,779,001
Jan-04	3,085,313	1187.2	0	31	0	2,392	127.53	3,036,492
Feb-04	2,532,523	811.7	0	29	0	2,389	127.80	2,547,622
Mar-04	2,474,943	708.5	0	31	0	2,386	128.06	2,620,773
Apr-04	2,400,573	457	0	30	0	2,382	128.32	2,316,279
May-04	2,303,903	347.3	0	31	0	2,379	128.59	2,297,234
Jun-04	3,164,823	137.2	16	30	1	2,376	128.85	3,608,571
Jul-04	4,224,053	31.4	35.3	31	1	2,374	129.12	3,664,123
Aug-04	3,844,613	140.5	56.8	31	1	2,372	129.38	3,807,429
Sep-04	3,855,953	123.6	9	30	1	2,370	129.65	3,562,141
Oct-04	4,054,133	369.7	1.4	31	1	2,369	129.92	3,814,890
Nov-04	3,939,313	562.4	0	30	1	2,367	130.19	3,869,657
Dec-04	4,440,873	972.9	0	31	1	2,365	130.45	4,273,537
Jan-05	4,722,183	1124.7	0	31	1	2,364	130.74	4,388,351
Feb-05	3,915,913	812.6	0	28	1	2,362	131.03	3,878,156
Mar-05	4,024,213	824.2	0	31	1	2,360	131.33	4,144,558
Apr-05	3,705,613	368	0	30	1	2,358	131.62	3,695,752
May-05	3,726,493	264.6	0	31	1	2,357	131.91	3,697,782
Jun-05	3,486,993	56.4	26.6	30	1	2,355	132.20	3,521,219
Jul-05	3,654,493	34.2	71	31	1	2,354	132.50	3,723,967
Aug-05	3,331,013	69.5	28	31	1	2,353	132.79	3,629,007
Sep-05	3,350,603	149.9	18.2	30	1	2,352	133.09	3,579,395
Oct-05	3,965,603	372.3	1	31	1	2,351	133.38	3,793,747
Nov-05	3,975,733	640.1	0	30	1	2,350	133.68	3,916,812
Dec-05	4,052,273	872.2	0	31	1	2,350	133.98	4,189,130

	<u>Purchased</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Number of Days in Month</u>	<u>Intermediate Class Flag</u>	<u>Number of Customers/Connections</u>	<u>Ontario Real GDP Monthly %</u>	<u>Predicted Purchases</u>
Jan-06	3,921,263	809.2	0	31	1	2,349	134.25	4,142,186
Feb-06	3,835,713	934.6	0	28	1	2,348	134.53	3,981,504
Mar-06	4,038,473	678.9	0	31	1	2,347	134.81	4,044,992
Apr-06	3,709,953	324.7	0	30	1	2,346	135.08	3,682,728
May-06	3,886,953	200	15.1	31	1	2,345	135.36	3,718,824
Jun-06	3,562,953	56.3	14.3	30	1	2,344	135.64	3,519,254
Jul-06	3,884,013	10.3	75.2	31	1	2,343	135.92	3,748,043
Aug-06	3,680,103	38.3	18.5	31	1	2,342	136.20	3,603,715
Sep-06	3,526,943	205.7	4.2	30	1	2,340	136.48	3,605,556
Oct-06	3,974,403	462.4	0	31	1	2,339	136.76	3,881,242
Nov-06	3,963,533	568.6	0	30	1	2,338	137.04	3,876,988
Dec-06	4,247,253	809.9	0	31	1	2,337	137.33	4,152,934
Jan-07	4,446,737	997.6	0	31	1	2,335	137.55	4,297,573
Feb-07	4,162,837	999.6	0	28	1	2,334	137.78	4,035,246
Mar-07	4,047,317	674.4	0	31	1	2,333	138.01	4,039,329
Apr-07	3,649,477	478.8	0	30	1	2,332	138.23	3,796,437
May-07	3,822,617	186.5	8.1	31	1	2,330	138.46	3,675,745
Jun-07	3,322,417	57.9	39.1	30	1	2,329	138.69	3,576,077
Jul-07	3,434,017	41.2	57.4	31	1	2,328	138.92	3,699,387
Aug-07	3,216,537	65.5	21.9	31	1	2,326	139.15	3,610,331
Sep-07	2,797,977	175.6	6.6	30	0	2,325	139.38	2,023,949
Oct-07	2,739,437	333	0	31	0	2,323	139.61	2,210,926
Nov-07	2,340,337	663.5	0	30	0	2,322	139.84	2,378,615
Dec-07	2,742,337	989.2	0	31	0	2,320	140.07	2,716,842
Jan-08	2,748,532	1024	0	31	0	2,319	139.97	2,727,177
Feb-08	2,586,142	986	0	29	0	2,317	139.86	2,505,620
Mar-08	2,452,042	829	0	31	0	2,316	139.76	2,539,286
Apr-08	2,152,630	497	0	30	0	2,314	139.65	2,174,832
May-08	2,293,140	340	0	31	0	2,313	139.55	2,121,753
Jun-08	1,988,380	119	3	30	0	2,312	139.44	1,851,834
Jul-08	1,874,560	43	23	31	0	2,312	139.34	1,936,818
Aug-08	1,864,830	47	32	31	0	2,312	139.23	1,966,616
Sep-08	1,761,190	193	8	30	0	2,312	139.13	1,920,258
Oct-08	2,282,500	390	0	31	0	2,313	139.02	2,138,030
Nov-08	2,212,490	645	0	30	0	2,313	138.92	2,249,092
Dec-08	2,797,640	1129	0	31	0	2,313	138.81	2,713,933
Jan-09	2,785,280	1184	0	31	0	2,314	138.44	2,745,645
Feb-09	2,237,810	881	0	28	0	2,314	138.06	2,234,349
Mar-09	2,270,800	748	0	31	0	2,314	137.69	2,380,055
Apr-09	2,176,770	451	0	30	0	2,314	137.31	2,048,296
May-09	2,177,131	319	0	31	0	2,315	136.94	2,019,717
Jun-09	2,055,085	125	17	30	0	2,315	136.57	1,818,323
Jul-09	1,699,677	91	1	31	0	2,314	136.20	1,811,053
Aug-09	1,764,408	88	22	31	0	2,314	135.83	1,853,053
Sep-09	1,670,262	81	6	30	0	2,313	135.47	1,692,973
Oct-09	2,217,469	468	0	31	0	2,313	135.10	2,045,679
Nov-09	2,015,515	507	0	30	0	2,312	134.73	1,969,197
Dec-09	2,711,415	995	0	31	0	2,311	134.37	2,419,123

	<u>Purchased</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Number of Days in Month</u>	<u>Intermediate Class Flag</u>	<u>Number of Customers/Connections</u>	<u>Ontario Real GDP Monthly %</u>	<u>Predicted Purchases</u>
Jan-10	2,584,646	989	0	31	0	2,311	134.73	2,422,356
Feb-10	2,225,892	856	0	28	0	2,310	135.10	2,065,598
Mar-10	2,093,200	528	0	31	0	2,309	135.46	2,078,264
Apr-10	1,997,885	332	0	30	0	2,309	135.83	1,845,861
May-10	1,773,769	195	0	31	0	2,308	136.20	1,834,418
Jun-10	1,674,623	99	0	30	0	2,308	136.57	1,680,708
Jul-10	2,021,846	6	0	31	0	2,306	136.94	1,698,627
Aug-10	1,928,285	46	0	31	0	2,305	137.31	1,734,315
Sep-10	1,824,415	256	0	30	0	2,304	137.68	1,815,833
Oct-10	1,849,823	334	0	31	0	2,303	138.05	1,968,135
Nov-10	2,235,662	585	0	30	0	2,302	138.43	2,081,554
Dec-10	2,498,677	645	0	31	0	2,301	138.80	2,219,747
Jan-11	2,610,200	1126	0	31	0	2,299	139.10	2,597,446
Feb-11	2,246,462	859	0	28	0	2,298	139.40	2,127,928
Mar-11	2,236,546	760	0	31	0	2,297	139.70	2,313,125
Apr-11	2,047,023	438	0	30	0	2,296	140.00	1,974,518
May-11	2,007,631	198	0	31	0	2,295	140.30	1,874,650
Jun-11	1,668,008	128	0	30	0	2,294	140.60	1,733,612
Jul-11	1,910,577	32	61	31	0	2,294	140.90	1,937,902
Aug-11	2,013,785	24	33	31	0	2,294	141.20	1,864,902
Sep-11	1,643,662	176	9	30	0	2,295	141.50	1,843,612
Oct-11	1,987,346	353	5	31	0	2,295	141.80	2,074,610
Nov-11	2,020,454	566	0	30	0	2,296	142.11	2,154,378
Dec-11	2,350,123	777	0	31	0	2,296	142.41	2,422,079
Jan-12	2,406,962	622	0	31	0	2,296	142.61	2,312,823
Feb-12	2,113,377	760	0	29	0	2,297	142.81	2,257,694
Mar-12	2,195,146	497	0	31	0	2,297	143.01	2,237,703
Apr-12	2,132,323	435	0	30	0	2,298	143.21	2,113,291
May-12	1,694,373	199	0	31	0	2,298	143.42	2,027,420
Jun-12	1,942,718	42	0	30	0	2,299	143.62	1,828,725
Jul-12	1,954,473	1	61	31	0	2,299	143.82	2,070,115
Aug-12	1,843,391	45	33	31	0	2,299	144.02	2,031,143
Sep-12	1,568,673	210	9	30	0	2,299	144.22	2,013,064
Oct-12	1,976,964	423	5	31	0	2,299	144.43	2,265,835
Nov-12	2,066,773	644	0	30	0	2,299	144.63	2,345,102
Dec-12	2,392,973	898	0	31	0	2,299	144.83	2,640,191
Jan-13	2,490,942	1010	0	31	0	2,299	144.99	2,735,863
Feb-13	2,221,283	925	0	28	0	2,300	145.15	2,414,764
Mar-13	2,169,850	831	0	31	0	2,300	145.30	2,609,394
Apr-13	1,962,925	584	0	30	0	2,300	145.46	2,336,244
May-13	2,122,150	279	1	31	0	2,300	145.61	2,193,074
Jun-13	1,832,875	82	10	30	0	2,300	145.77	1,987,480
Jul-13	1,794,300	44	53	31	0	2,300	145.93	2,172,324
Aug-13	1,916,083	67	48	31	0	2,299	146.09	2,181,082
Sep-13	1,619,033	134	3	30	0	2,299	146.24	2,017,824
Oct-13	1,974,675	346	0	31	0	2,299	146.40	2,265,293
Nov-13	2,101,858	611	0	30	0	2,299	146.56	2,388,951
Dec-13	2,665,642	1170	0	31	0	2,298	146.72	2,917,967

	<u>Purchased</u>	<u>Heating Degree Days</u>	<u>Cooling Degree Days</u>	<u>Number of Days in Month</u>	<u>Intermediate Class Flag</u>	<u>Number of Customers/Connections</u>	<u>Ontario Real GDP Monthly %</u>	<u>Predicted Purchases</u>
Jan-14	2,759,483	1216	0	31	0	2,298	147.04	2,964,121
Feb-14	2,339,475	1022	0	28	0	2,298	147.37	2,560,293
Mar-14	2,364,158	928	0	31	0	2,297	147.70	2,758,433
Apr-14	2,015,133	555	0	30	0	2,297	148.02	2,388,567
May-14	2,100,685	238	8	31	0	2,297	148.35	2,261,813
Jun-14	1,992,408	79	16	30	0	2,297	148.68	2,081,776
Jul-14	1,907,331	54	21	31	0	2,296	149.01	2,170,061
Aug-14	1,759,069	60	11	31	0	2,295	149.35	2,149,035
Sep-14	1,616,431	168	2	30	0	2,294	149.68	2,126,208
Oct-14	1,859,369	390	0	31	0	2,293	150.01	2,384,969
Nov-14	2,415,631	781	0	30	0	2,292	150.34	2,609,507
Dec-14	2,504,000	822	0	31	0	2,291	150.68	2,733,321
Jan-15	2,799,215	1032	0	31	0	2,290	150.99	2,901,298
Feb-15	3,184,223	1110	0	28	0	2,289	151.30	2,705,350
Mar-15	3,085,285	714	0	31	0	2,288	151.61	2,659,819
Apr-15	2,788,138	459	0	30	0	2,287	151.92	2,376,887
May-15	2,839,485	246	0	31	0	2,286	152.24	2,300,713
Jun-15	2,589,715	80	2	30	0	2,286	152.55	2,093,596
Jul-15	2,779,462	22	49	31	0	2,284	152.86	2,273,191
Aug-15	2,450,792	67	32	31	0	2,283	153.18	2,259,948
Sep-15	2,722,200	101	24	30	0	2,282	153.49	2,177,355
Oct-15	3,269,292	358	0	31	0	2,280	153.81	2,395,825
Nov-15	2,988,931	503	0	30	0	2,279	154.13	2,423,294
Dec-15	3,309,931	733	0	31	0	2,278	154.44	2,692,324
Jan-16		1024	0	31	0	2,277	154.72	2,919,689
Feb-16		919	0	29	0	2,275	155.01	2,662,982
Mar-16		730	0	31	0	2,274	155.29	2,688,417
Apr-16		447	0	30	0	2,273	155.57	2,379,140
May-16		248	2	31	0	2,272	155.85	2,317,093
Jun-16		88	12	30	0	2,270	156.13	2,133,071
Jul-16		34	42	31	0	2,270	156.42	2,266,477
Aug-16		61	30	31	0	2,269	156.70	2,257,267
Sep-16		165	8	30	0	2,268	156.99	2,191,193
Oct-16		386	1	31	0	2,267	157.27	2,433,131
Nov-16		611	0	30	0	2,266	157.56	2,522,663
Dec-16		896	0	31	0	2,265	157.84	2,836,189
Jan-17		1024	0	31	0	2,264	158.15	2,940,862
Feb-17		919	0	28	0	2,263	158.47	2,601,697
Mar-17		730	0	31	0	2,263	158.78	2,718,963
Apr-17		447	0	30	0	2,262	159.10	2,414,380
May-17		248	2	31	0	2,261	159.41	2,357,031
Jun-17		88	12	30	0	2,260	159.73	2,177,711
Jul-17		34	42	31	0	2,259	160.04	2,312,382
Aug-17		61	30	31	0	2,258	160.36	2,304,440
Sep-17		165	8	30	0	2,257	160.68	2,239,639
Oct-17		386	1	31	0	2,256	160.99	2,482,855
Nov-17		611	0	30	0	2,256	161.31	2,573,669
Dec-17		896	0	31	0	2,255	161.63	2,888,481