EXHIBIT 3 - OPERATING REVENUE

1. LOAD AND REVENUE FORECASTS and
2. ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

3. OTHER REVENUE

Load and Revenue Forecasts

Overview

Chapleau Public Utilities Corporation (Company) is a rural Northern Ontario electrical distribution company operating within the Township of Chapleau. Its main industry is forestry and the Canadian Pacific Railway. Several plant closures prior to 2006 in the forestry industry caused a population reduction of 16.9% resulting in 17.1% reduction in CPUC's customer consumptions. The towns' economy has not improved from 2006, and the Town has experienced further population and customer losses through to 2016.

The Town of Chapleau is located in Northern Ontario, 200 kilometers South-West of Timmins and 140 kilometers East of Wawa, with a population of about 2,300 residents and has a customer base of just under 1,300 metered customers. The Town of Chapleau exists to service the logging/lumber industry and the Canadian Pacific Railway.

Number of Customers

The 2016 number of customers was developed using the Weather Normalization Regression Model included in this application.

Number of Customers/Connections

Customer Classes	2003 Actual	2006 Actual	2012 Board Approved	2012 Actual	2013 Actual	2014 Actual	2015 Bridge Year	2016 Test Year
Residential Customers	1,189	1,136	1,133	1,099	1,076	1,068	1,065	1,063
Gen Service <50 kW Customers	169	159	161	162	157	154	153	152
Gen Service >50 kW Customers	16	15	14	14	14	13	13	13
Unmetered Scattered Load	6	6	6	5	5	4	4	4
Sentinel Lighting	26	24	23	23	23	23	23	23
Street Lighting	341	341	341	328	328	328	328	328
TOTAL Customers/Connections	1,747	1,681	1,678	1,631	1,603	1,590	1586	1,583

Variance Analysis - Number of Customers.

Customer Classes	2012 Board Approved vs 2012 Actual	2012 actual vs 2013 actual	2013 Actual vs 2014 Actual	2014 actual vs 2015 Bridge Year	2015 Bridge Year vs 2016 Test Year
Residential	(34)	(23)	(8)	(3)	(2)
General Service <50 kW	1	(5)	(3)	(1)	(1)
General Service > 50 kW	0	0	(1)	0	0
Un-metered Scattered Load	(1)	0	(1)	0	0
Sentinel Lights	0	0	0	0	0
Street Lights	(13	0	0	0	0
Total Customer Variance	**(47)**	**(28)**	**(13)**	**(4)**	**(3)**
Total Customer Change %	**(2.80%)**	**(1.72%)**	**(.81%)**	**(.25%)**	**(.19%)**

Customer count decreases over the years are attributable to several plant closures in the forestry/mining industry resulting in population and customer count reductions. The towns' economy has not improved and the Town has experienced further population and customer losses through to 2016.

Year	Population	% Change	Metered Customers	% Change
2001	2,832	-	1,398	-
2006	2,354	(16.9)	1,310	(6.3)
2011	2,116	(10.1)	1,287	(1.8)
2016	2,100 (Est)	(0.7)	1,238 (Est)	(3.8)
Total Change	732	25.85%	160	11.43%

Service Revenue Requirement

Chapleau PUC is proposing a total Service Revenue Requirement of $891,122 for the 2016 Test Year. This amount includes a Base Revenue Requirement of $847,617 plus Revenue Offsets of $43,505 to be recovered through Other Revenue.
Other Revenue include Late Payment charges, Specific Service charges, Rent from Electric Property, Interest/Dividend Income and Retail Services revenue.

The following summarizes Chapleau PUC's total operating revenue.

Detail	2012 Board Approved	2012 Actual	2013 Actual	2014 Actual	2015 Bridge Year	2016 Test Year
Distribution Revenue					Weather Normalized	
Residential	513,150	380,767	478,658	551,579	506,730	593,933
GS <50 kW	156,531	117,301	151,786	164,990	150,848	146,482
GS >50 kW	90,813	81,007	97,879	105,956	84,109	91,482
Unmetered Scattered Load	1,983	1,324	1,508	1,570	1,320	1,284
Sentinel Lights	3,314	1,052	1,288	1,811	3,380	5,208
Street Lights	33,127	24,779	28,451	34,050	32,367	9,227
Sub-Total	**798,918**	**606,230**	**759,571**	**859,957**	**778,754**	**847,616**

Smart Meter Disposition Ryder	0	81,867	34,287	38,060	0	0
Foregone Revenue	0	0	68,633	47,571	0	0
Regulatory Debit	0	0	(24,413)	(20,042)	0	0
Retail Services Revenue	0	3,061	3,009	2,763	0	0
Smart Meter Entity	0	0	6,163	0	0	0
Total Distribution Revenue	**798,918**	**691,158**	**847,249**	**928,309**	**778,754**	**847,616**
Revenue Offsets						
Specific Service Charges	9,540	8,156	6,985	9,142	7,545	8,055
Late Payment Charges	5,190	5,624	7,192	7,546	6,757	6,500
Other Operating Revenues	10,025	12,210	15,242	16,282	15,963	15,750
Other Income or Deductions	16,980	13,857	8,060	20,196	11,757	13,200
Total Revenue Offsets	**41,735**	**39,847**	**37,481**	**53,165**	**42,022**	**43,505**
Total Operating Revenue	**840,653**	**731,005**	**884,730**	**981,474**	**820,776**	**891,121**

Year to Year Variances

2012 Board Approved and 2012 Actual

Customer Classes	2012 Board Approved	2012 Actual	Variance
Distribution Revenue			
Residential	513,150	380,767	(132,383)
GS <50 kW	156,531	117,301	(39,230)
GS >50 kW	90,813	81,007	(9,806)
Unmetered Scattered Load	1,983	1,324	(659)
Sentinel Lights	3,314	1,052	(2,262)
Street Lights	33,127	24,779	(8,348)
Sub-Total	**798,918**	**606,230**	**(192,688)**

Variances between 2012 Board Approved and 2012 Actual are mainly due to the late approval (December 1, 2012) of the 2012 cost of service rates. Loss of revenue from May 1, 2012 to November 30, 2012 was recovered through a foregone revenue rate rider over a three year period.
Changes in weather conditions and the declining economy also had an effect on revenues.

2012 Actual and 2013 Actual

Customer Classes	2012 Actual	2013 Actual	Variance
Distribution Revenue			
Residential	380,767	478,658	97,891
GS <50 kW	117,301	151,786	34,485
GS >50 kW	81,007	97,879	16,872
Unmetered Scattered Load	1,324	1,508	184
Sentinel Lights	1,052	1,288	236
Street Lights	24,779	28,451	3,672
Sub-Total	**606,230**	**759,571**	**153,341**

Variances between 2012 Actual and 2013 Actual are mainly due to the late approval (December 1, 2012) of the 2012 cost of service rates. Partial rate increases were applied in 2013 so as to be within a 10.0% annual increase. Additional foregone revenue was recovered through a rate rider in 2013.
Changes in weather conditions(2013 experienced colder temperatures than 2012) and the declining economy also had an effect on revenues.

2013 Actual and 2014 Actual

Customer Classes	2013 Actual	2014 Actual	Variance
Distribution Revenue			
Residential	478,658	551,579	72,921
GS <50 kW	151,786	164,990	13,204
GS >50 kW	97,879	105,956	8,077
Unmetered Scattered Load	1,508	1,570	62
Sentinel Lights	1,288	1,811	523
Street Lights	28,451	34,050	5,599
Sub-Total	**759,571**	**859,957**	**100,386**

Variances between 2013 Actual and 2014 Actual are due to the partial rate increases applied in 2013 so as to be within a 10.0% annual increase and additional partial rate increases in 2014 so as to again be within a 10.0% annual increase. Additional foregone revenue was recovered through a rate rider in 2014.
Changes in weather conditions (2014 experienced colder temperatures than 2013) and the declining economy also had an effect on revenues.

2014 Actual and 2015 Bridge Year

Customer Classes	2014 Actual	2015 Bridge Year	Variance
Distribution Revenue		Weather Normalized	
Residential	551,579	506,730	(44,849)
GS <50 kW	164,990	150,848	(14,142)
GS >50 kW	105,956	84,109	(21,847)
Unmetered Scattered Load	1,570	1,320	(250)
Sentinel Lights	1,811	3,380	1,569
Street Lights	34,050	32,367	(1,683)
Sub-Total	**859,957**	**778,754**	**(81,203)**

Variances between 2014 Actual and 2015 Bridge Year are mainly due to the warmer temperatures experienced in 2015 over 2014. The declining economy also had an effect on revenues.

2015 Bridge Year and 2016 Test Year.

Customer Classes	2015 Bridge Year	2016 Test Year	Variance
Distribution Revenue	Weather Normalized		
Residential	506,730	593,933	87,203
GS <50 kW	150,848	146,482	(4,366)
GS >50 kW	84,109	91,482	7,373
Unmetered Scattered Load	1,320	1,284	(36)
Sentinel Lights	3,380	5,208	1,828
Street Lights	32,367	9,227	(23,140)
Sub-Total	**778,754**	**847,616**	**68,862**

Variances between 2015 Bridge Year and 2016 Test Year of $68,864 are mainly due to the proposed increases/decreases to fixed and variable distribution revenue.

Changes in Definition or Composition of Class

There are no changes in definition or composition of class.

Load Forecast

The load forecast was developed using the Weather Normalization Regression Model included in this application as ATTACHMENT G

Weather Normalization Regression Model

The purpose of this evidence is to present the process used by CPUC to prepare the weather normalized load and customer/connection forecast for 2016.

CPUC has used the same regression analysis methodology used by a number of other distributors between 2009 and 2016 cost of service rate applications to determine a prediction model. With regard to the overall process of load forecasting, CPUC submits that conducting a regression analysis on historical electricity purchases to produce an equation that will predict purchases is appropriate. CPUC has the data for the amount of monthly electricity (in kWh) purchases from the IESO for use by CPUC'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 forecast the total level of weather normalized purchases for CPUC for the Bridge Year and the Test Year which is converted to billed kWh by rate class. A detailed explanation of the process is provided later in this evidence.

To increase the accuracy of the regression analysis and to achieve reasonable results for the purpose of weather normalized load forecasting for this application, CPUC utilized the regression analysis based on historical electricity purchases.

Based on the OEB's approval of this methodology in a number of cost of service applications, and based on the discussion that follows, CPUC submits that its load forecasting methodology using power purchases is reasonable at this time for the purposes of this Application.

The following provides the material to support the weather normalized load forecast that may be used by CPUC in this Application.

Summary of Load and Customer/Connection Forecast						
Year	***Billed kWh***	***Change***	***% Change***	***Customer/ Connection Count***	***Change***	***% Change***
2003 Actual	**32,559,118**			**1,747**		
2004 Actual	**31,044,406**	**-1,514,713**	**-4.88%**	**1,734**	**-13**	**-0.75%**
2005 Actual	**29,513,664**	**-1,530,742**	**-5.19%**	**1,730**	**-4**	**-0.23%**
2006 Actual	**28,429,027**	**-1,084,638**	**-3.82%**	**1,681**	**-49**	**-2.91%**
2007 Actual	**28,525,074**	**96,048**	**0.34%**	**1,705**	**24**	**1.41%**
2008 Actual	**28,582,032**	**56,958**	**0.20%**	**1,701**	**-4**	**-0.24%**
2009 Actual	**28,674,687**	**92,655**	**0.32%**	**1,690**	**-11**	**-0.65%**
2010 Actual	**26,167,966**	**-2,506,721**	**-9.58%**	**1,676**	***-14***	**-0.84%**
2011 Actual	**26,893,563**	**725,597**	**2.70%**	**1,657**	**-19**	**-1.15%**
2012 Actual	**26,031,597**	**-861,966**	**-3.31%**	**1,631**	**-26**	**-0.23%**
2013 Actual	**27,174,709**	**1,143,112**	**4.21%**	**1,603**	**-28**	**-1.59%**
2014 Actual	**27,940,070**	**795,361**	**2.85%**	**1,590**	**-13**	**0.82%**
2015 Normalized	**26,475,527**	**-1,464,543**	**-5.53%**	**1,586**	**-4**	**-0.24%**
2016 Normalized	**26,061,255**	**-414,272**	**-1.60%**	**1,583**	**-3**	**-0.19%**

Note that 2003 to 2014 are weather actual, while 2015 and 2016 are weather normalized. CPUC does not have a process to adjust weather actual data to weather normal basis. However, based on the process outlined in this Exhibit, a process to

forecast energy on a weather normalized basis has been developed and used in this application.

The total Customers and Connections are on a year average basis. Sentinel Lights and Streetlights are measured as connections.

Actual and Forecast Billed Amounts and Number of Customers are shown in Table B per customer usage is shown in Table C on a rate class basis below:

Table B - Billed Energy and Number of Customer/Connections by Rate Class

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights	Total
Billed Energy							
2003 Actual	16,533,903	6,027,416	9,668,139	7,248	27,506	294,906	32,559,118
2004 Actual	15,978,327	5,940,345	8,798,182	7,239	23,670	296,643	31,044,406
2005 Actual	15,211,690	5,825,357	8,150,335	7,248	23,346	295,688	29,513,664
2006 Actual	14,654,854	5,541,938	7,907,099	7,286	23,346	294,504	28,429,027
2007 Actual	15,018,918	5,438,894	7,740,511	7,286	24,801	294,664	28,525,074
2008 Actual	15,056,531	5,269,211	7,928,332	7,301	24,659	295,998	28,582,032
2009 Actual	15,273,442	5,200,927	7,871,532	7,212	24,861	296,713	28,674,687
2010 Actual	13,587,676	4,877,032	7,374,502	7,391	25,021	296,344	26,167,966
2011 Actual	14,223,450	5,102,862	7,236,568	7,734	26,236	296,713	26,893,563
2012 Actual	13,606,692	4,978,478	7,124,651	5,511	26,265	290,000	26,031,597
2013 Actual	14,615,491	5,220,157	7,033,427	5,052	27,271	273,311	27,174,709
2014 Actual	15,225,943	5,251,373	7,157,299	4,048	26,857	274,528	27,940,070
2015 Normalized	14,458,774	4,942,820	6,769,262	3,680	27,099	273,712	26,475,527
2016 Normalized	14,291,097	4,842,432	6,630,340	3,584	26,757	267,045	26,061,255

Number of Customer/Connections

2003 Actual	**1,189**	**169**	**16**	**6**	**26**	**341**	**1,747**
2004 Actual	**1,179**	**169**	**14**	**6**	**25**	**341**	**1,734**
2005 Actual	**1,176**	**169**	**14**	**6**	**24**	**341**	**1,730**
2006 Actual	**1,136**	**159**	**15**	**6**	**24**	**341**	**1,681**
2007 Actual	**1,159**	**159**	**14**	**6**	**26**	**341**	**1,705**
2008 Actual	**1,148**	**167**	**14**	**6**	**25**	**341**	**1,701**
2009 Actual	**1,144**	**162**	**14**	**6**	**23**	**341**	**1,690**
2010 Actual	**1,132**	**160**	**14**	**6**	**23**	**341**	**1,676**
2011 Actual	**1,117**	**156**	**14**	**6**	**23**	**341**	**1,657**
2012 Actual	**1,099**	**162**	**14**	**5**	**23**	**328**	**1,631**
2013 Actual	**1,076**	**157**	**14**	**5**	**23**	**328**	**1,603**
2014 Actual	**1,068**	**154**	**13**	**4**	**23**	**328**	**1,590**
2015 Normalized	**1,065**	**153**	**13**	**4**	**23**	**328**	**1,586**
2016 Normalized	**1,063**	**152**	**13**	**4**	**23**	**328**	**1,583**

Table C - Annual Usage per Customer/Connection by Rate Class

Total Billed	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
Energy Usage per Customer/Connections by Rate Class kWh						
2003 Actual	**13,906**	**35,665**	**604,259**	**1,208**	**1,058**	**865**
2004 Actual	**13,552**	**35,150**	**628,442**	**1,207**	**947**	**870**
2005 Actual	**12,935**	**34,470**	**582,167**	**1,208**	**973**	**867**
2006 Actual	**12,900**	**34,855**	**527,140**	**1,214**	**973**	**864**
2007 Actual	**12,959**	**34,207**	**552,894**	**1,214**	**954**	**864**
2008 Actual	**13,115**	**31,552**	**566,309**	**1,217**	**986**	**868**
2009 Actual	**13,351**	**32,104**	**562,252**	**1,202**	**1,081**	**870**
2010 Actual	**12,003**	**30,481**	**526,750**	**1,232**	**1,088**	**869**
2011 Actual	**12,734**	**32,711**	**516,898**	**1,289**	**1,141**	**870**
2012 Actual	**12,381**	**30,731**	**508,904**	**1,102**	**1,142**	**884**
2013 Actual	**13,583**	**33,249**	**502,388**	**1,010**	**1,186**	**833**
2014 Actual	**14,257**	**34,100**	**550,561**	**1,017**	**1,168**	**837**
2015 Normalized	**14,289**	**33,961**	**545,923**	**1,001**	**1,178**	**834**
2016 Normalized	**14,321**	**33 823**	**541,324**	**986**	**1,189**	**832**

Annual Growth/Loss Rate in Usage per Customer/Connection						
2003 Actual						
2004 Actual	-0.0254	-0.0144	0.0400	-0.0012	-0.1050	0.0059
2005 Actual	-0.0456	-0.0194	-0.0736	0.0012	0.0274	-0.0032
2006 Actual	-0.0027	0.0112	-0.0945	0.0052	0.0000	-0.0040
2007 Actual	0.0045	-0.0186	0.0489	0.0000	-0.0194	0.0005
2008 Actual	0.0121	-0.0776	0.0243	0.0021	0.0340	0.0045
2009 Actual	0.0180	0.0175	-0.0072	-0.0122	0.0959	0.0024
2010 Actual	-0.1009	-0.0506	-0.0631	0.0248	0.0064	-0.0012
2011 Actual	0.0608	0.0731	-0.0187	0.0464	0.0484	0.0012
2012 Actual	-0.0277	-0.0605	-0.0155	-0.1449	0.0011	0.0161
2013 Actual	0.0971	0.0819	-0.0128	-0.0833	0.0383	-0.0575
2014 Actual	0.0496	0.0256	0.0959	0.0065	-0.0152	0.0045
2014 Normalized	0.0023	-0.0041	-0.0084	-0.0155	0.0090	-0.0030
2015 Normalized	0.0023	-0.0041	-0.0084	-0.0156	0.0090	-0.0030

LOAD FORECAST AND METHODOLOGY

CPUC's weather normalized load forecast is developed by using a three step process. First total system weather normalized purchased energy forecast is developed based on a multifactor regression model that incorporates historical load, weather and calendar related events. Second, the weather normalized purchases 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 customer numbers by rate class is determined using a geometric mean analysis. 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.

A detailed explanation of the load forecasting process follows.

Purchases kWh Load Forecast:

An equation to predict total system purchased energy is developed using a multifactor regression model with the following independent variables: weather (heating and cooling degree days) and calendar variables (number of days in the month). The regression model uses monthly kWh and monthly values of independent variables from January 2003 to December 2014 to determine the monthly regression coefficients. This provides 144 monthly data points - this represents a reasonable data set for use in a regression analysis. Based on the recent global activity surrounding climate change, historical weather data is showing that there is a warming of the global climate system. In this regard, CPUC submits that it is appropriate to review the impact of weather since 2003 on the energy usage and then determine the average weather conditions from January 2003 to December 2014 which would be applied in the forecasting process to determine a weather normalized forecast.

The multifactor regression model has determined drivers of year-over-year changes in CPUC's load growth; these include weather and "calendar" factors. These factors are captured within the multifactor regression model.

CPUC conducted the regression analysis using the Heating Degree Days, Cooling Degree Days, Ontario Real GDP Monthly Index, Number of Customers, Number of Days in the month and Spring Fall Flag and Number of Peak Hours. After completing the regression analysis CPUC eliminated the Ontario Real Gross Domestic Product % and the spring/fall flag variables from the regression analysis since they did not have a t-stat value above the absolute value of 2 and are not statistically significant to the analysis.

The following outlines the prediction model used by CPUC to predict weather normal purchases for 2015 and 2016:

CPUC's Monthly Predicted kWh Purchases

Intercept	**-4329780.327**
Heating Degree Days	**2527.105379**
Cooling Degree Days	**1639.788116**
Number of Peak Hours	**1118.577441**
Number of Customers	**3429.53786**
Number of Days in Month	**27029.76583**

The monthly data used in the regression model and the resulting monthly prediction for the actual and forecasted years are provided in ATTACHMENT G

The sources of data for the various data points are:

a) Environment Canada website for monthly heating degree day and cooling degree day information. Weather data from the Chapleau Station was used which is located in Northern Ontario, at latitude 47.82 degrees, longitude -83.35 at an elevation of 448.1 meters.

b) The calendar provided information related to the spring/fall flag.

The prediction formula has the following statistical results:

Table D - Statistical Results and T-Stat Coefficients

Statistical Results

Statistic	Value
R Square	99%
Adjusted R Square	99%
F Test	1798.87
T-Stats by Coefficient	
Intercept	-8.08
Heating Degree Days	75.82
Cooling Degree Days	3.27

T-Stat Coefficients

Intercept	-8.083694703
Heating Degree Days	75.81558445
Cooling Degree Days	3.266389882
Number of Peak Hours	2.028218132
Number of Customers	10.91278787
Number of Days in Month	2.381763389

The following table outlines the data that supports the above chart. In addition, the predicted total system purchases for CPUC are provided for 2015 and 2016. For 2015 and 2016 the system purchases reflect a weather normalized forecast for the full year.

Table E - Total System Purchases

Purchased Energy (kWh)

Year	Actual	Predicted	Difference	% Difference
2003	33,611,224	34,757,774	1,146,550	3.4%
2004	32,654,946	34,426,725	1,171,779	5.4%
2005	31,058,652	33,275,403	2,216,751	7.1%
2006	29,569,274	30,392,281	823,007	2.8%
2007	29,857,234	31,497,154	1,639,920	5.5%
2008	30,257,407	32,657,571	2,400,164	7.9%
2009	29,917,187	31,899,157	1,981,970	6.6%
2010	27,909,701	29,586,308	1,676,607	6.0%
2011	28,474,627	30598,529	2,123,902	7.5%
2012	28,011,153	29,548,461	1,447,308	5.2%
2013	29,749,924	31,027,380	1,277,456	4.3%
2014	29,940,176	30,895,903	955,727	3.2%
2015 Normalized		28,853,029		
2016 Normalized		29,049,515		

The weather normalized amount for 2016 is determined by using 2016 dependent variables in the prediction formula on a monthly basis together with the average monthly heating degree days and cooling degree days that occurred from January 2003 to December 2014 (i.e. twelve years).

The weather normal twelve year average has been used as the purchased forecast in this Application for the purposes of determining a billed kWh load forecast which is used to design rates. The twelve year average has been used as this is consistent with the period of time over which the regression analysis was conducted.

CDM Savings

With regard to the forecast of the CDM savings variable, CPUC applied a savings of 594,567 kWh to the 2016 test year forecast. The CDM savings was prorated to the rate classes based on the 2016 weather corrected forecast. The CDM savings is determined through the worksheet "App 2-I LF CDM" in the 2016 Filing Requirements.

Table F - CDM Savings

Total CDM savings kWh	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
594,567	**326,467**	**110,621**	**150,960**	**79**	**587**	**5,853**

Billed KWh Load Forecast

To determine the total weather normalized energy billed forecast, the total system weather normalized purchases forecast is adjusted by the 5 year average determined in the 2016 Filing Requirements sheet "App. 2-R Loss Factors" of 1.0898 which is inclusive of the average Supply Facilities Loss Factor of 1.0151.

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

Customer/Connection Forecast

The next step in the forecasting process is to determine a customer/connection forecast. The customer/connection forecast is based on reviewing historical customer/connection data that is available as shown in the following table.

Table G - Historical Customer/Connection Data

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights	Total
2003 Actual	1,189	169	16	6	26	341	1,747
2004 Actual	1,179	169	14	6	25	341	1,734
2005 Actual	1,176	169	14	6	24	341	1,730
2006 Actual	1,136	159	15	6	24	341	1,681
2007 Actual	1,159	159	14	6	26	341	1,705
2008 Actual	1,148	167	14	6	25	341	1,701
2009 Actual	1,144	162	14	6	23	341	1,690
2010 Actual	1,132	160	14	6	23	341	1,676
2011 Actual	1,117	156	14	6	23	341	1,657
2012 Actual	1,099	162	14	5	23	328	1,631
2013 Actual	1,076	157	14	5	23	328	1,603
2014 Actual	1,068	154	13	4	23	328	1,590

From the historical customer/connection data the growth/loss rates in customers/ connections can be evaluated. The growth/loss rates are provided in the following table. The geometric mean growth rate in number of customers is also provided. The geometric mean approach provides the average growth/loss rate from 2003 to 2014.

Table H - Growth Rate in Customer/Connections

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
2004	0.9916	1.0000	0.8750	1.0000	0.9615	1.0000
2005	0.9975	1.0000	1.0000	1.0000	0.9600	1.0000
2006	0.9660	0.9408	1.0714	1.0000	1.0000	1.0000
2007	1.0202	1.0000	0.9333	1.0000	1.0833	1.0000
2008	0.9905	1.0503	1.0000	1.0000	0.9615	1.0000
2009	0.9965	0.9701	1.0000	1.0000	0.9200	1.0000
2010	0.9895	0.9877	1.0000	1.0000	1.0000	1.0000
2011	0.9867	0.9750	1.0000	1.0000	1.0000	1.0000
2012	0.9839	1.0685	1.0000	0.8333	1.0000	0.9619
2013	0.9791	0.9691	1.0000	1.0000	1.0000	1.0000
2014	0.9926	0.9809	0.9286	0.8000	1.0000	1.0000
Used	.09975	0.9950	1.0000	0.9638	1.0000	1.0000
Geometric Mean	0.9903	0.9916	0.9813	0.9638	0.9889	0.9965

The resulting geometric mean was applied to the customer/connection numbers to determine the forecast of customer/connections in 2015 and 2016. However Chapleau PUC did not agree with the results and applied the actual customer numbers/connections for 2015 and used them. As for 2016 Chapleau PUC felt more comfortable to make minor changes to the Residential and GS <50 kW and for all other classes to remain the same as 2015. Table I below outlines the forecast of customers by rate class for 2015 and 2016.

Table I - Forecast of Customers By Rate Class

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights	Total
2015	1,065	153	13	4	23	328	1,586
2016	1,063	152	13	4	23	328	1,583

Average Annual Usage per Customer by Rate Class

The next step in the process is to review the historical customer/connection usage and to reflect this usage per customer in the forecast. The following table provides the average annual usage per customer by rate class from 2003 to 2014.

Table J - Historical Annual Usage per Customer

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
2003	13,906	35,665	604,259	1,208	1,058	865
2004	13,552	35,150	628,442	1,207	947	870
2005	12,935	34,470	582,167	1,208	973	867
2006	12,900	34,855	527,140	1,214	973	864
2007	12,959	34,207	552,894	1,214	954	864
2008	13,115	31,552	566,309	1,217	986	868
2009	13,351	32,104	562,252	1,202	1,081	870
2010	12,003	30,481	526,750	1,232	1,088	869
2011	12,734	32,711	516,898	1,289	1,141	870
2012	12,381	30,731	508,904	1,102	1,142	884
2013	13,583	33,249	502,388	1,010	1,186	833
2014	14,257	34,100	550,561	1,017	1,168	837

From the historical usage per customer/connection data the growth rate in usage per customer/connection can be reviewed. That information is provided in the following table. The geometric mean growth rate has also been shown.

Table K - Geometric Mean Growth/Loss Rate in Usage per Customer/Connection

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
Growth/Loss Rate in annual usage per Customer						
2003						
2004	0.9746	0.9856	1.0400	0.9988	0.8950	1.0059
2005	0.9544	0.9806	0.9264	1.0012	1.0274	0.9968
2006	0.9973	1.0112	0.9055	1.0052	1.0000	0.9960
2007	1.0045	0.9814	1.0489	1.0000	0.9806	1.0005
2008	1.0121	0.9224	1.0243	1.0021	1.0340	1.0045
2009	1.0180	1.0175	0.9928	0.9878	1.0959	1.0024
2010	0.8991	0.9494	0.9369	1.0248	1.0064	0.9988
2011	1.0608	1.0731	0.9813	1.0464	1.0486	1.0012
2012	0.9723	0.9395	0.9845	0.8551	1.0011	0.9161
2013	1.0971	1.0819	0.9872	0.9167	1.0383	0.9425
2014	1.0496	1.0256	1.0959	1.0065	0.9848	1.0045
	0					
Used	1.0023	0.9959	0.9916	0.9845	1.0090	0.9970
Geometric Mean	1.0023	0.9959	0.9816	0.9845	1.0090	0.9970

From the historical usage per customer/connection data the growth/loss rate in usage per customer/connection can be reviewed. That information is provided in the following table. The geometric mean growth rate has also been shown.

Table L -Forecast Annual kWh Usage per Customer/Connection

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
Forecast Annual kWh Usage per Customer/Connection						
2015	14,289	33,961	545,923	1,001	1,178	834
2016	14,321	33,823	541,324	986	1,189	832

Billed Energy Forecast

With the preceding information the non-normalized weather billed energy forecast can be determined by applying the forecast number of customer/connections from Table I by the forecast annual usage per customer/connection Table L. The resulting non-normalized weather billed energy forecast is shown in the following table.

Table M - Non-normalized Weather Billed Energy Forecast

Year	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
Non Normalized Weather Billed Energy Forecast (kWh)						
2015 Not Normalized	**15,222,314**	**5,203,842**	**7,097001**	**3,860**	**27,099**	**273,712**
2016 Not Normalized	**15,218,687**	**5,156,739**	**7,037211**	**3,662**	**27,343**	**272,899**

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 1,352,302 kWh for 2015 and 1,060,720 kWh for 2016.

The difference between the non-normalized and normalized forecast adjustment is assumed to be associated with the moving forecast from a non-normalized to weather normal basis and this amount will be assigned to those rate classes that are weather sensitive. Based on the weather normalized work completed by Hydro One, and CPUC having used this in its' previous COS application of 2012, it was prudent that the weather sensitivity by rate classes be the same.

Table N - Weather Sensitivity by Rate Class

Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
92.65%	**92.65%**	**85.30%**	**0.00%**	**0.00%**	**0.00%**

For the General Service > 50 kW class the weather sensitivity amount of 85.30% was provided in the weather normalization work completed by Hydro One. For the Residential and General Service < 50 kW classes, it has been previously assumed in cost of service applications that these two classes are 100% weather sensitive. Concerns were expressed with this assumption and it was suggested that 100% weather sensitivity is not appropriate. CPUC agrees with this position but also submits that the weather sensitivity for the Residential and General Service < 50 kW classes should be higher than the General Service > 50 kW class. As a result, CPUC has assumed the weather sensitivity for the Residential and General Service < 50 kW classes to be mid-way between 100% and 85.30% or 92.65%.

The difference between the non-normalized and normalized forecast of 1,352,302 kWh for 2015 and 1,060,720 kWh for 2016. has been assigned on a pro rata basis to each rate class based on the above level of weather sensitivity. The following table outlines how the weather sensitive rate classes have been adjusted to align the non-normalized forecast with the normalized forecast.

Table O - Alignment of Non-normal to Weather Normal Forecast

Year	Total	Residential	General Service < 50	General Service >50	USL	Sentinel Lights	Street Lights
Non Weather Corrected Forecast							
2015	**27,827,829**	**15,222,314**	**5,203,842**	**7,097,001**	**3,860**	**27,099**	**273,712**
2016	**27,716,542**	**15,218,687**	**5,156,739**	**7,037,211**	**3,662**	**27,343**	**272,899**
Weather Corrected Forecast							
2015	**26,476,527**	**14,458,774**	**4,942,820**	**6,769,262**	**3,860**	**27,099**	**273,712**
2016	**26,655,822**	**14,291,097**	**4,842,432**	**6,630,340**	**3,584**	**26,757**	**267,045**
% Weather Sensitive		**92.65%**	**92.65%**	**85.30%**			
2015	**(1,352,302)**	**14,103,474**	**4,821,360**	**6,053,742**	**0**	**0**	**0**
2016	**(1,060,720)**	**14,100,113**	**4,777,719**	**6,002,741**	**0**	**0**	**0**
Allocation of Weather Sensitive Amount							
2015	**(1,352,302)**	**(763,541)**	**(261,021)**	**(327,740)**	**0**	**0**	**0**
2016	**(1,060,720)**	**(601,122)**	**(203,686)**	**(255,912)**	**0**	**0**	**0**

Billed KW Load Forecast

There are three rate classes that charge volumetric distribution on per kW basis. These include General Service > 50, Sentinel Lights and Street lighting. As a result, the energy forecast for these classes needs to be converted to a kW basis for rate setting purposes. The forecast of kW for these classes is based on a review of the historical ratio of kW to kWhs and applying the average ratio to the forecasted kWh to produce the required kW.

The following table outlines the annual demand units by applicable rate class.

Table 3 P - Historical Annual kW per Applicable Rate Class

Year	General Service >50	Sentinel Lights	Street Lights	Total
2003	25,121	76	771	25,968
2004	24,094	66	789	24,948
2005	21,944	65	780	22,789
2006	21,243	64	780	22,087
2007	19,178	67	780	20,025
2008	20,115	70	780	20,965
2009	19,967	66	780	20,812
2010	18,568	66	780	19,414
2011	19,549	66	780	20,394
2012	18,736	60	777	19,573
2013	18,430	65	768	19,263
2014	18,429	65	768	19,262

The following table illustrates the historical ratio of kW/kWh as well as the average ratio for 2003 to 2014 and the 5 year average ratio that was used to forecast 2015 and 2016.

Table Q - Historical kW/kWh Ratio per Applicable Rate Class

Year	General Service >50	Sentinel Lights	Street Lights
2003	0.2598%	0.2756%	0.2615%
2004	0.2738%	0.2771%	0.2659%
2005	0.2692%	0.2780%	0.2638%
2006	0.2687%	0.2741%	0.2649%
2007	0.2478%	0.2706%	0.2647%
2008	0.2537%	0.2818%	0.2635%
2009	0.2537%	0.2643%	0.2629%
2010	0.2518%	0.2642%	0.2632%
2011	0.2701%	0.2512%	0.2629%
2012	0.2630%	0.2284%	0.2679%
2013	0.2620%	0.2383%	0.2810%
2014	0.2575%	0.2420%	0.2798%
Used Average	0.2609%	0.2621%	0.2668%
	0.2609%	0.2448%	0.2710%

CPUC feels that the average ratio is not appropriate for the Sentinel and Street Lights and used the last 5 year average (2010-2014) and applied this to the weather normalized billed energy forecast in Table O to provide the forecast of kW by rate class as shown below. The following Table R outlines the forecast of kW for the applicable rate classes.

Table R - kW Forecast by Applicable Rate Class

Year	General Service >50	Sentinel Lights	Street Lights	Total
2,015	17,660	66	742	18,468
2,016	17,297	66	724	18,086

Summary of Billing Determinants by Rate Class

Table S - Summary of Forecast

	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Weather Normal	2016 Weather Normal
Actual kWh Purchases	33,611,224	32,654,946	31,058,652	29,569,274	29,857,234	30,257,407	29,917,187	27,909,701	28,474,627	28,011,153	29,749,924	29,940,176		
Predicted kWh Purchases	34,757,774	34,426,725	33,275,403	30,392,281	31,497,154	32,657,571	31,899,157	29,586,308	30,598,529	29,458,461	31,027,380	30,895,903	28,853,029	29,049,515
% Difference	3.4%	5.4%	7.1%	2.8%	5.5%	7.9%	6.6%	6.0%	7.5%	5.2%	4.3%	3.2%		
Billed kWh By Class	32,559,118	31,044,406	29,513,664	28,429,027	28,525,074	28,582,032	28,674,687	26,167,966	26,893,563	26,031,597	27,174,709	27,940,070	26,475,527	26,061,255
Residential														
Customers	1,189	1,179	1,176	1,136	1,159	1,148	1,144	1,132	1,117	1,099	1,076	1,068	1,065	1,063
kWh	16,533,903	15,978,327	15,211,690	14,654,854	15,018,918	15,056,531	15,273,442	13,587,676	14,223,450	13,606,692	14,615,491	15,225,943	14,458,774	14,291,097
General Service < 50														
Customers	169	169	169	159	159	167	162	160	156	162	157	154	153	152
kWh	6,027,416	5,940,345	5,825,357	5,541,938	5,438,894	5,269,211	5,200,927	4,877,032	5,102,862	4,978,478	5,220,157	5,251,375	4,942,820	4,842,432
General Service >50														
Customers	16	14	14	15	14	14	14	14	14	14	14	13	13	13
kWh	9,668,139	8,798,182	8,150,335	7,907,099	7,740,511	7,928,332	7,871,532	7,374,502	7,236,568	7,124,651	7,033,427	7,157,299	6,769,262	6,630,340
kW	25,121	24,094	21,944	21,243	19,178	20,115	19,967	18,568	19,549	18,736	18,430	18,429	17,660	17,297.36
USL														
Customers	6	6	6	6	6	6	6	6	6	5	5	4	4	4
kWh	7,248	7,239	7,248	7,286	7,286	7,301	7,212	7,391	7,734	5,511	5,052	4,068	3,860	3,584
Sentinel Lights														
Connections	26	25	24	24	26	25	23	23	23	23	23	23	23	23
kWh	27,506	23,670	23,346	23,346	24,801	24,659	24,861	25,021	26,236	26,265	27,271	26,857	27,099	26,757
kW	76	66	65	64	67	70	66	66	66	60	65	65	66	65.51
Street Lights														
Connections	341	341	341	341	341	341	341	341	341	328	328	328	328	328
kWh	294,906	296,643	295,688	294,504	294,664	295,998	296,713	296,344	296,713	290,000	273,311	274,528	273,712	267,045
kW	771	789	780	780	780	780	780	780	780	777	768	768	742	723.57
Total of Above														
Customer/Connections	1,747	1,734	1,730	1,681	1,705	1,701	1,690	1,676	1,657	1,631	1,603	1,590	1,586	1,583
kWh	32,559,118	31,044,406	29,513,664	28,429,027	28,525,074	28,582,032	28,674,687	26,167,966	26,893,563	26,031,597	27,174,709	27,940,070	26,475,527	26,061,255
kW from applicable classes	25,968	24,948	22,789	22,087	20,025	20,965	20,812	19,414	20,394	19,573	19,263	19,262	18,468	18,086
Total from Model														
Customer/Connections	1,747	1,734	1,730	1,681	1,705	1,701	1,690	1,676	1,657	1,631	1,603	1,590	1,586	1,583
kWh	32,559,118	31,044,406	29,513,664	28,429,027	28,525,074	28,582,032	28,674,687	26,167,966	26,893,563	26,031,597	27,174,709	27,940,070	26,475,527	26,061,255
kW from applicable classes	25,968	24,948	22,789	22,087	20,025	20,965	20,812	19,414	20,394	19,573	19,263	19,262	18,468	18,086
Check should all be zero														
Customer/Connections	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kWh	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kW from applicable classes	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average Customer Consumptions

Customer Class	2012 Board Approved	2012 Actual	2013 Actual	2014 Actual	2015 Bridge Year	2016 Test Year
Residential	11,578	12,381	13,583	14,257	14,289	14,321
GS <50 kW	28,505	30,731	33,249	34,100	33,961	33,823
GS >50 kW	526,555	508,904	502,388	550,561	545,923	541,324
USL	1,241	1,102	1,010	1,017	1,001	986
Sentinel Lights	1,150	1,142	1,186	1,168	1,178	1,189
Street Lights	872	884	833	837	834	832

Variance Analysis

Residential class.

2012 Board Approved and 2012 Actual average customer consumptions shows higher consumptions for 2012 actual, due to an error in underestimating 2012 Board Approved residential customer losses by 34.
For 2012 to 2016 Test year, shows minor annual increases caused by the increased use of electronic equipment, air conditioning etc.

General Service <50 kW.

2012 Board Approved and 2012 Actual average customer consumptions shows higher consumptions for 2012 actual, due to an error in underestimating consumption.
For 2012 to 2016 Test year, shows minor annual changes that do not require explanation.

General Service >50 kW.

2012 Board Approved and 2012 Actual average customer consumptions shows lower consumptions for 2012 actual, due to an error in overestimating consumption and the continued downturn in the economy for Northern Ontario.
For 2012 to 2016 Test year, shows steady annual declines due the economic conditions, except for 2014 the loss of one low use consumption customer (school), increased average consumptions.

USL, Sentinel and Street Lights

For 2012 Board Approved to 2016 Test year, show minor annual changes that do not require explanation.

Other Revenue

Appendix 2-H
Other Operating Revenue

USoA #	USoA Description	2011 Actual	2012 Actual	2013 Actual[2]	2014 Actual	Actual Year[2]	Bridge Year[2]	Test Year
		2008	2011	2013	2014	2014	2015	2016
	Reporting Basis	CGAAP	CGAAP	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS
4235	Specific Service Charges	$ 8,501	$ 8,156	$ 6,985	$ 9,142	$ 9,142	$ 7,545	$ 8,055
4225	Late Payment Charges	$ 5,583	$ 5,624	$ 7,192	$ 7,546	$ 7,546	$ 6,757	$ 6,500
4082	Retail Services Revenues	$ 2,834	$ 3,061	$ 3,009	$ 2,763	$ 2,763	$ 2,444	$ 2,300
4405	Interest & Dividend Income	$ 18,370	$ 14,509	$ 8,952	$ 14,074	$ 14,074	$ 11,757	$ 13,200
4210	Rent From Electric Property	$ 7,306	$ 9,150	$ 12,234	$ 13,519	$ 13,519	$ 13,519	$ 13,450
4325/4330	Revenue & Expense of Merchandising	-$ 1,126	-$ 652	-$ 892	$ 6,121	$ 6,121	$ -	$ -
Specific Service Charges		$ 8,501	$ 8,156	$ 6,985	$ 9,142	$ 9,142	$ 7,545	$ 8,055
Late Payment Charges		$ 5,583	$ 5,624	$ 7,192	$ 7,546	$ 7,546	$ 6,757	$ 6,500
Other Operating Revenues		$ 10,140	$ 12,210	$ 15,243	$ 16,282	$ 16,282	$ 15,963	$ 15,750
Other Income or Deductions		$ 17,244	$ 13,857	$ 8,060	$ 20,196	$ 20,196	$ 11,757	$ 13,200
Total		$ 41,468	$ 39,847	$ 37,481	$ 53,165	$ 53,165	$ 42,022	$ 43,505

Account 4405 - Interest and Dividend Income

	2011 Actual	2012 Actual	2013 Actual[2]	2014 Actual	Actual Year[2]	Bridge Year[2]	Test Year
				2014	2014	2015	2016
Reporting Basis	CGAAP	CGAAP	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS
Short-term Investment Interest	$ 10,467	$ 5,494	$ 4,840	$ 10,262	$ 10,262	$ 8,400	$ 8,400
Bank Deposit Interest							
Miscellaneous Interest Revenue	$ 7,903	$ 9,015	$ 4,112	$ 3,812	$ 3,812	$ 3,358	$ 4,800
etc.[1]							
Total	$ 18,370	$ 14,509	$ 8,952	$ 14,074	$ 14,074	$ 11,758	$ 13,200

Variance Analysis

2011 and 2012

Variance is below materiality level, set by CPUC of $10,000, for all accounts.

2012 and 2013

Variance is below materiality level, set by CPUC of $10,000, for all accounts.

2013 and 2014

Other Income and Deductions, which includes a/c 4405, Interest and Dividend Income and a/c 4325/4330, Revenue and Expense of Merchandizing in 2014 is higher by $12,136 over 2013. Individually these accounts are below materiality levels.

2014 and 2015 Bridge Year

Variance is below materiality level, set by CPUC of $10,000, for all accounts.

2015 Bridge Year and 2016 Test Year

Variance is below materiality level, set by CPUC of $10,000, for all accounts.

Proposed Specific Service Charges

Chapleau PUC is not proposing for new service charges, or changes to rates or application of existing specific service charges.

Revenue from Affiliate Transactions

Chapleau PUC does not have revenue from affiliate transactions, shared services or corporate cost allocation.