EXHIBIT 3 - REVENUES

2019 Cost of Service

Chapleau PUC.
EB-2018-0087

3.1 TABLE OF CONTENT

TABLE OF FIGURES

3.1 LOAD AND REVENUE FORECAST

3.1.1 INTRODUCTION

The evidence presented in this exhibit provides information supporting the revenues derived from activities regulated by the Ontario Energy Board. Actual operating revenues from regulated operations are derived mainly from fixed and variable tariff charges as well as pass through charges and specific service charges. Revenues are collected from six (6) customer classes: Residential, General Service less than 50 kW, General Service greater than 50 kW, Unmetered Scattered Load (USL), Sentinel and Street Lighting. CPUC does not anticipate any significant changes in its customer classes.

This exhibit also describes CPUC's load and customer forecasts. The load forecast methodology and assumptions are described in detail at 3.1.4 Load Forecast Methodology.

The evidence herein is organized per the following topics:

1) Revenue and Load Forecast
2) Impact and Persistence from Historical CDM Programs
3) Accuracy of Load Forecast and Variance Analysis, and
4) Other Revenues

3.1.2 OVERVIEW OF CURRENT REVENUES

Table 1 - Revenues at Current Rates below shows revenues from current distribution charges for 2018. Distribution Revenues are derived from a combination of fixed monthly charges and volumetric charges applied to the utility's proposed Load Forecast. Fixed rate revenues are determined by applying the current fixed monthly charge to the number of customers or connections in each of the customer classes in each month. Variable rate revenue is based on a volumetric rate applied to meter readings for consumption or demand volume.

CPUC's 2019 forecasted revenues recovered through its currently approved distribution rates are projected at $783,560.85 (exclusive of all rate riders). The revenues at proposed distribution rates are presented in Exhibit 6 and Exhibit 8.

Table 1 - Revenues at Current Rates

Projected Revenues at Current Rates

2017 Rates at 2018 Load								
	Test Year Projected Revenue from Existing Variable Charges							
Customer Class Name	**Variable Distribution Rate**	**per**	**Test Year Volume**	**Gross Variable Revenue**	**Transform. Allowance Rate**	**Transform. Allowance kW's**	**Transform. Allowance $'s**	**Net Variable Revenue**
Residential	$0.0140	kWh	13,831,681	$193,643.53			$0.00	$193,643.53
General Service < 50 kW	$0.0179	kWh	4,880,502	$87,360.98			$0.00	$87,360.98
General Service > 50 to 4999 kW	$3.6185	kW	18,883	$68,329.27	0.60		$0.00	$68,329.27
Unmetered Scattered Load	$0.0336	kWh	5,232	$175.79			$0.00	$175.79
Sentinel	$15.0437	kW	65	$977.84			$0.00	$977.84
Street Lighting	$20.6218	kW	774	$15,955.09			$0.00	$15,955.09
Total Variable Revenue			**18,737,137**	**$366,442.50**	**0.6**	0	0	$366,442.50
2017 Rates at 2018 Load								
	Test Year Projected Revenue from Proposed Fixed Charges							
Customer Class Name	**Fixed Rate**	**Customers (Connections)**	**Fixed Charge Revenue**	**Variable Revenue**	**TOTAL**	**% Fixed Revenue**	**% Variable Revenue**	**% Total Revenue**
Residential	$24.04	1,033	$298,023.37	$193,643.53	$491,666.90	60.61%	39.39%	62.75%
General Service < 50 kW	$35.18	148	$62,674.21	$87,360.98	$150,035.19	41.77%	58.23%	19.15%
General Service > 50 to 4999 kW	$193.66	15	$35,397.36	$68,329.27	$103,726.63	34.13%	65.87%	13.24%
Unmetered Scattered Load	$24.99	4	$1,199.52	$175.79	$1,375.31	87.22%	12.78%	0.18%
Sentinel	$8.65	23	$2,387.40	$977.84	$3,365.24	70.94%	29.06%	0.43%
Street Lighting	$4.43	328	$17,436.48	$15,955.09	$33,391.57	52.22%	47.78%	4.26%
Total Fixed Revenue		**1,552**	**$417,118.35**	**$366,442.50**	**$783,560.85**			

A completed Appendix 2-IB Load Forecast Analysis is presented at Appendix A of this Exhibit and in Tab 10 of the RRWF.[1]

CPUC does not foresee or plan for any changes in the composition of its customer classes.

3.1.3 PROPOSED LOAD FORECAST

The following section of the application covers the approach taken to determine the Load Forecast. This section also covers economic assumptions and data sources for customer and load forecasts. It explains wholesale purchases and subsequent adjustments to the wholesale

[1] MFR - Completed Appendix 2-IB; the customer and load forecast for the test year must be entered on RRWF, Tab 10

purchases. It also provides the rationale behind each variable used in the regression analysis. Lastly, it presents the regression results and explains how they were used to determine the forecast for the bridge and test year.

Table 2 - Customer and Volume Trend Table below presents the actual and forecast trends for customer/connection counts, kWh consumption and billed kW demand. The forecast trend is what CPUC has based its proposed rates on.

Table 2 - Customer and Volume Trend Table

	Year	2012	2013	2014	2015	2016	2017	2018	2019	2019 CDM Adjusted
Residential	Cust/Conn	1,108	1,062	1,063	1,059	1,059	1,054	1,043	1,033	1,033
	kWh	13,667,868	15,071,570	15,225,943	13,727,288	12,612,066	12,775,802	14,078,629	13,990,554	13,831,681
	kW									
General Service < 50 kW	Cust/Conn	162	153	152	152	157	152	150	148	148
	kWh	5,015,356	5,337,892	5,251,375	4,907,587	4,617,295	4,702,580	5,010,785	4,979,438	4,880,502
	kW									
General Service > 50 to 4999 kW	Cust/Conn	11	11	10	11	12	15	15	15	15
	kWh	7,148,661	7,164,613	7,157,299	6,867,603	7,048,334	6,797,046	7,234,473	7,189,214	7,147,174
	kW	18,736	18,431	20,149	18,062	18,740	17,522	19,002	18,883	18,883
Unmetered Scattered Load	Cust/Conn	4	4	4	4	4	4	4	4	4
	kWh	2,892	2,892	2,892	2,892	2,892	2,892	5,232	5,232	5,232
	kW	-	-	-	-	-	-	-	-	-
Sentinel	Cust/Conn	23	23	23	23	23	23	23	23	23
	kWh	25,594	26,244	26,857	23,735	19,993	20,629	24,760	24,760	24,760
	kW	60	65	75	63	60	62	65	65	65
Street Lighting	Cust/Conn	328	328	328	328	328	328	328	328	328
	kWh	287,471	274,269	274,528	274,259	274,259	274,259	283,967	283,967	283,967
	kW	777	768	768	768	768	768	774	774	774
Total	**Cust/Conn**	**1,636**	**1,581**	**1,579**	**1,577**	**1,582**	**1,576**	**1,564**	**1,552**	**1,552**
	kWh	**26,147,842**	**27,877,480**	**27,938,894**	**25,803,364**	**24,574,839**	**24,573,208**	**26,637,846**	**26,473,166**	**26,173,316**
	kW	**19,573**	**19,264**	**20,992**	**18,893**	**19,568**	**18,352**	**19,841**	**19,722**	**19,722**

3.1.4 LOAD FORECAST METHODOLOGY AND DETAIL[2]

CPUC's load forecast is prepared in two phases. The first phase, a billed energy forecast by customer class for 2019, is developed using a total purchase (**Wholesale**) basis regression analysis. Then, in the second phase, usage associated with the known change in customers for 2019 is determined and added (if applicable) (**Adjusted Wholesale**). The methodology proposed in this application predicts wholesale consumption (**Predicted**) using a multiple regression analysis that relates historical monthly wholesale kWh usage to carefully selected variables. The one-way analysis of variance (**ANOVA**) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups. The ANOVA compares the means between the groups you are interested in and determines whether any of those means are statistically significantly different from each other. The utility did not test the NAC method because NAC is generally seen as an alternative when sound historical data is not available. [3]

The most significant variables used in weather related regressions are monthly historical heating degree days and cooling degree days. Heating degree-days provide a measure of how much (in degrees), and for how long (in days), the outside temperature was below that base temperature. The most readily available heating degree days come with a base temperature of 18°C. Cooling degree-day figures also come with a base temperature, and provide a measure of how much, and for how long, the outside temperature was above that base temperature.

For degree days, daily observations as reported in Ottawa are used. The regression model also uses other variables which are tested to see their relationship and contribution to the fluctuating wholesale purchases. Each variable is discussed in detail later in this section.

[2] MFR - Explanation of weather normalization methodology
[3] MFR - NAC Model - rationale for choice, data supporting NAC variables, description of accounting for CDM including license conditions, discussion of weather normalization considerations

Explanation of Multiple Regression Analysis

Multiple regression can be utilized for forecasting purposes by analyzing how several variables have affected a depended variable historically. From this, the relationship between these variables and the depended variable can be expressed as:

$$Y=A+B1X1+B2X2...+bNxN + E$$

Where:

Y = Predicted depended variable value

A = the value of Y when all Xs are zero

X = the independent variable

B = the coefficients corresponding to the independent variables

n = the number of independent variables

E = an error term

By forecasting the independent variables, the dependent variable can be predicted. However, to ascertain that the relationship is not coincidental, the utility must first assess the correlation between the dependent and individual independent variables. This can be accomplished by the Person Correlation Coefficient (otherwise known as "R") to each independent variable. This depicts how much of the change in depended variable can be explained by the change in independent variables. Those variables with a high R-squared should then be used for multiple regression. The same correlation coefficient can be applied to multiple independent variables to ascertain how much of the change in a dependent variable can be explained by changes in all independent variables.

$$R\ Squared=(B'X'Y - nAVG(Y)^2)/Y'Y-nAVG(Y)^2$$

Where:

B',X',Y' = Matrixes of all combinations of B,X&Y respectively

^2 = Squared

The adjusted R-squared is calculated by "correcting" for the number of independent variables in a multiple regression analysis. The formula: Adj RSq=(1-(1-RSq)*((n-1)/(n-k)). It is often used to compare models involving a different number of coefficients. The statistical significance of the multiple regression can be tested with the F-test which is derived from a normal probability distribution. A critical point along the distribution can be found given a degree of confidence required, the number of variables and the number of observations. If the F-statistic is at this point, then the analysis can be deemed statistically significant at the level of confidence.

F-statistic = (R Squared/k-1)/(1-R Squared)/(n-k)

Where:

K = number of independent variable

n = number of observations

Independent variables that are highly correlated themselves can lead to high variances in slope estimation (B). This is known as "Multicollinearity." For this reason, independent variables with a high level of multicollinearity to the other independent variables should consider being omitted from the analysis.

The formula behind the monthly weather normalized values is as follows; (coefficient for the intercept) + (monthly HDD*coefficient for HDD) + (monthly CDD*coefficient for CDD) + (monthly Number of Days*coefficient for monthly Number of Days) + (monthly Employment Stats*coefficient for monthly Employment Stats) + (monthly Daylight Hours*coefficient for monthly Daylight Hours). When the regression line is linear (y = ax + b), the regression coefficient is the constant (a) that represents the rate of change of one variable (y) as a function of changes in the other (x); it is the slope of the regression line. The intercept is the predicted value of the dependent variable when all predictor variables are set to 0.

3.1.5 ECONOMIC OVERVIEW

CPUC's economic overview is also presented in section 2.1 of the Business Plan and duplicated below for ease of reference. A comprehensive community Profile published by the Town of Chapleau in March of 2016 is presented at Appendix I of Exhibit 1.

Introduction

The Township of Chapleau is situated within the Boreal Forest and Arctic Watershed Region of Northern Ontario. Chapleau is best known for being the home of the world's largest Crown Game Preserve, as well as being the 2011 winners of WFN's Ultimate Fishing Town Canada contest. The Game Preserve, established in 1925, is 700,000 hectares in size, making it an exciting eco-tourism destination for world nature and wildlife travelers. Chapleau is also home to many different cultural communities, such as Chapleau Cree First Nation, Chapleau Ojibwe First Nation, Brunswick House First Nation, Chapleau's francophone community and Chapleau's Metis community. All of the various cultures have had a large impact on the history and upcoming of Chapleau. Deeply rooted in the fur trade and the railway, Chapleau's history began in 1885 when the Canadian Pacific Railway line provided access for the Hudson's Bay Company Trading Post. A fire in 1948 encouraged the government to develop a road so that logging contractors could remove the timber before it rotted. Consequently, Highway 129 was completed during the depression. In future years, Highways 101 and 17 were constructed to link Chapleau with Timmins to the East, and Wawa to the West (Wawa - 140 kilometres to the West and Timmins 200 kilometres to the East).

Location

Chapleau is linked to larger communities, such as Timmins and Sault Ste. Marie, via highway 101, and to Sudbury via highways 129 and 17. The Budd Car, operated by Via rail, offers train service travelling alternately east to Sudbury or west to White River with 2 stops per week in Chapleau. Travellers and residents

can reach southern Ontario by Via Rail on the Canadian National Railway which stops regularly in Foleyet, which is one hour from Chapleau. International travel can be accommodated at Toronto Pearson international airport, with connecting regional air service to Timmins, Sault Ste. Marie, and Sudbury. Chapleau operates a municipal airport that is used for emergency services, and is host to the Ministry of Natural Resources base, which is used for fire suppression water bombers.

Climate

The average temperature fluctuates from a low of -16 degree Celsius in January to a high of 15.7 degree Celsius in August. From the fall of 2017 to the fall of 2018, Winter temperatures are expected to be above normal, with the coldest periods in mid-November, early and late December, early January, and early and mid-February. Precipitation and snowfall are expected to be above normal in the east and below normal in the west, with the snowiest periods in late November, mid- and late December, and early to mid-March. April and May are expected to be a bit cooler than normal, with near-normal precipitation. Summer will be hotter than normal, with rainfall below normal in Southwest Ontario and above normal elsewhere. The hottest periods will be in early and late June, early July, and mid- to late August. September and October will be warmer and slightly drier than normal.

Labour Force

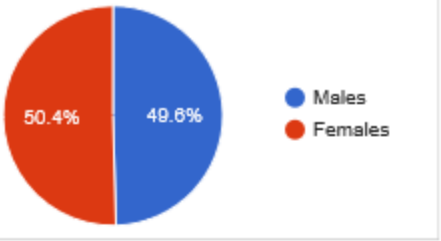
Chapleau is home to a labour force that is 1,735 persons strong. Chapleau's labour participation rate and employment rate are higher than the Ontario average.

Participation rate % 75.24 in Chapleau vs. 66.3% in Ontario. Employment rate % 63.26 in Chapleau vs. %61.3 in Ontario and Unemployment rate %15.93 in Chapleau vs. %7.4 in Ontario.

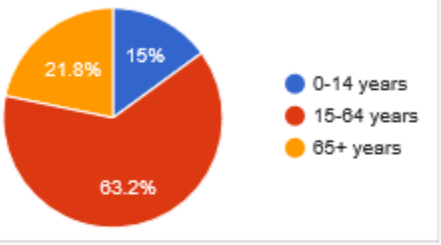
The largest percentage of labour force (by industry) in Chapleau is employed in the Transportation and Warehousing industry, which accounts for 23.5% of the labour force compared to 4.5% for Ontario. The percentage of labour force in the Health Care and Social Assistance industry (13.3%) and in the Manufacturing industry (12%) locally are also high. The largest private sector employers are Canadian Pacific Rail with 165 employees; Tembec with 150 Employees; True North Timber with 85 employees and Chapleau Valu-mart with 42 employees. The largest public sector employers are Chapleau High School, Chapleau Health Services; Chapleau Child Care Centre; Ministry of Natural Resources and the Township of Chapleau. [4]

[4] MFR - Explanation of causes, assumptions and adjustments for volume forecast. Economic assumptions and data sources for customer and load forecasts

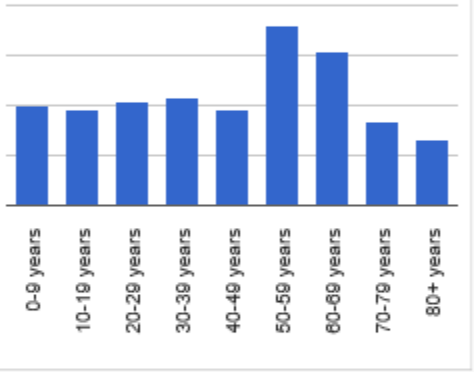
Table 3 – Population Figures



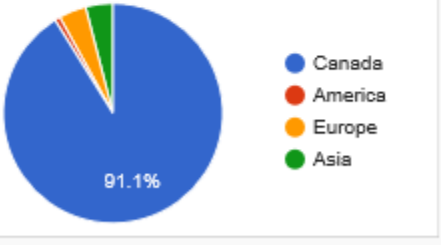
Gender (C 2016)	
Males	580
Females	590



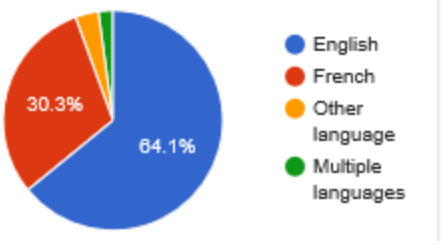
Age Groups (C 2016)	
0-14 years	175
15-64 years	740
65+ years	255



Age Distribution (C 2016)	
0-9 years	120
10-19 years	115
20-29 years	125
30-39 years	130
40-49 years	115
50-59 years	215
60-69 years	185
70-79 years	100
80+ years	80



Country of Birth (C 2016)	
Canada	1,130
America	10
Europe	50
Asia	50



Mother Tongue (C 2016)	
English	750
French	355
Other language	40
Multiple languages	25

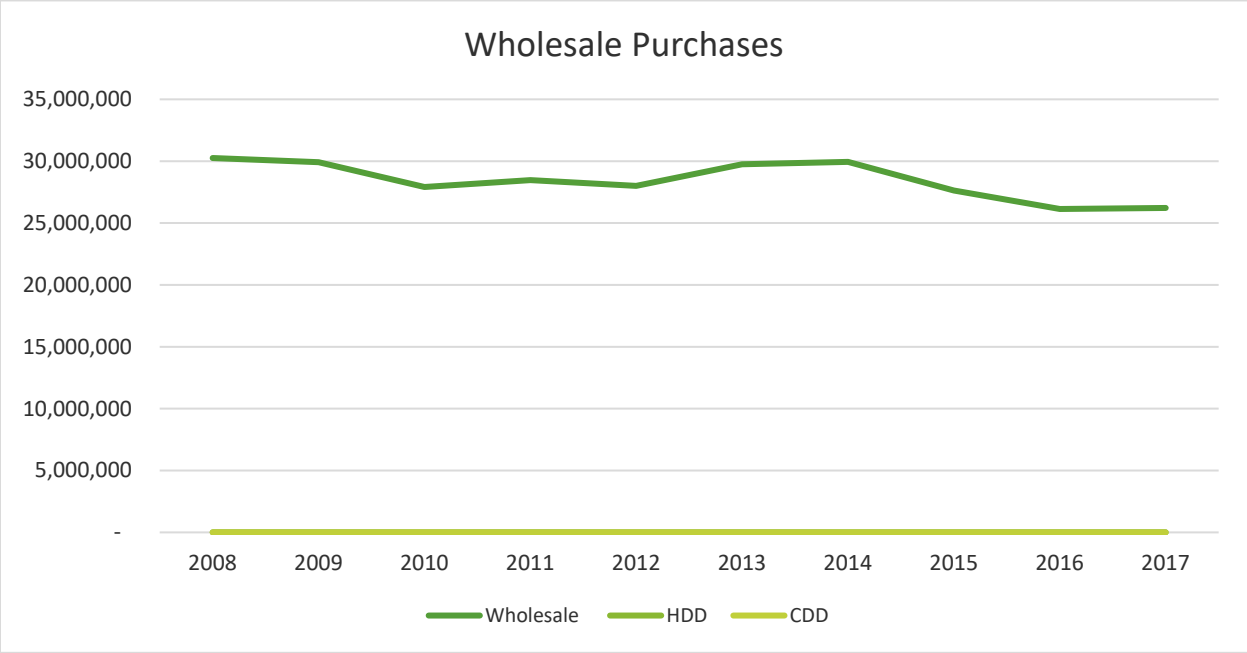
3.1.6 OVERVIEW OF WHOLESALE PURCHASES

CPUC purchases electricity from Hydro One and embedded generation and IESO as a market participant

The following table outlines the unadjusted monthly wholesale purchases:

Table 4 - Wholesale Purchases 2008-2017

Wholesale	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
January	3,553,594	3,964,573	3,555,786	3,725,999	3,471,510	3,659,052	4,029,497	3,781,638	3,315,649	3,025,806	3,608,310
February	3,401,145	3,275,816	3,226,531	3,199,166	3,012,655	3,328,199	3,376,138	3,675,375	3,144,488	2,756,037	3,239,555
March	3,267,165	3,123,876	2,735,628	3,149,377	2,718,808	3,073,554	3,438,820	3,134,690	2,792,541	2,975,094	3,040,955
April	2,484,611	2,438,204	2,118,971	2,404,961	2,322,466	2,583,934	2,469,717	2,311,643	2,322,585	2,149,527	2,360,662
May	2,129,303	2,029,149	1,659,537	1,882,453	1,754,285	1,973,412	1,990,047	1,732,762	1,691,933	1,824,577	1,866,746
June	1,666,374	1,709,611	1,575,298	1,558,657	1,554,684	1,572,830	1,509,025	1,447,661	1,427,262	1,407,488	1,542,889
July	1,597,391	1,550,034	1,557,646	1,547,575	1,559,096	1,514,119	1,454,350	1,418,797	1,390,592	1,368,068	1,495,767
August	1,562,276	1,671,756	1,560,143	1,492,483	1,550,120	1,513,901	1,494,071	1,409,127	1,366,144	1,385,233	1,500,525
September	1,722,442	1,741,452	1,726,490	1,636,442	1,754,352	1,691,798	1,716,705	1,508,728	1,452,990	1,478,250	1,642,965
October	2,301,820	2,454,652	2,190,525	2,072,185	2,256,510	2,148,338	2,253,763	2,068,654	1,930,303	1,864,561	2,154,131
November	2,813,449	2,533,459	2,647,526	2,540,284	2,737,614	2,867,916	2,912,404	2,321,299	2,264,449	2,606,062	2,624,446
December	3,757,837	3,424,605	3,355,620	3,265,045	3,319,053	3,822,871	3,295,639	2,815,132	3,038,788	3,375,806	3,347,040
Total	**30,257,407**	**29,917,187**	**27,909,701**	**28,474,627**	**28,011,153**	**29,749,924**	**29,940,176**	**27,625,506**	**26,137,724**	**26,216,509**	**28,423,991**
*RRR incl. losses**	*28,582,032*	*28,674,687*	*26,167,966*	*26,893,563*	*26,031,597*	*27,174,709*	*27,940,070*	*24,687,903*	*23,488,152*	*23,552,025*	
*Total Distribution Losses (kWh)**	*1,675,375*	*1,242,500*	*1,741,735*	*1,581,064*	*1,979,556*	*2,575,215*	*2,000,106*	*1,822,142*	*1,086,687*	*1,643,301*	
Load Transfer								*1,115,461*	*1,562,885*	*1,021,183*	
Total kWh Delivered (excluding losses)	*30,257,407*	*29,917,187*	*27,909,701*	*28,474,627*	*28,011,153*	*29,749,924*	*29,940,176*	*27,625,506*	*26,137,724*	*26,216,509*	
Variance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	



CPUC's load has seen a slight decline over the past ten years with the largest total wholesale being in 2014. Wholesale purchases, on the whole, have decreased by 13.36% since 2008. Since the number of customers has only moderately decreased over the past five years, the assumption is that the effects of energy efficiency changes have contributed to the modest decline.


Wholesale Purchases
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
January
February
March
April
May
June
July
August
September
October
November
December
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017

3.1.7 OVERVIEW OF VARIABLES USED[5]

In CPUC's case, variation in monthly electricity consumption is influenced by 3 main factors – weather (e.g. heating and cooling), which is by far the most dominant effect on most systems and the spring and fall flag; customer number; and lastly the number of days per month. Specifics relating to each variable used in the regression analysis are presented in the next section.

Heating and Cooling:

To determine the relationship between observed weather and energy consumption, monthly weather observations describing the extent of heating or cooling required within the month are necessary. Environment Canada publishes monthly observations on heating degree days (HDD) and cooling degree days (CDD) for selected weather stations across Canada. Heating degree-days for a given day are the number of Celsius degrees that the mean temperature is below 18°C. Cooling degree-days for a given day are the number of Celsius degrees that the mean temperature is above 18°C. For CPUC, the monthly HDD and CDD as reported in Chapleau were used.

CPUC has adopted the 10-year average from 2008 to 2017 as the definition of weather normal. Our view is that a ten-year average based on the most recent ten calendar years available is a reasonable compromise that likely reflects the "average" weather experienced in recent years. Many other LDCs have also adopted this definition for the purposes of cost-of-service rebasing. The following table outlines the monthly weather data used in the regression analysis.

[5] MFR - Multivariate Regression Model - rationale for choice, regression statistics, explanation of weather normalization methodology, sources of data for endogenous and exogenous variables, any binary variables used to either account for individual data points or to account for seasonal or cyclical trends or for discontinuities in the historical data, explanation of any specific adjustments made; data used in load forecast must be provided in Excel format, including derivation of constructed variables

Table 5 - HDD and CDD as reported at Utility Location

HDD	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
January	942.20	1123.10	947.60	1086.80	919.10	1003.00	1128.60	1126.90	924.10	850.40
February	966.20	877.30	835.10	880.80	778.90	911.10	949.50	1148.60	975.50	833.90
March	889.60	754.90	552.00	828.30	546.20	780.00	972.30	882.70	750.40	863.70
April	473.60	491.00	371.50	504.40	475.00	587.30	553.00	506.30	612.00	476.40
May	334.40	317.50	186.60	236.90	191.40	277.40	269.40	245.50	257.20	179.10
June	86.60	121.10	109.00	96.20	60.20	101.40	71.00	111.00	128.20	101.20
July	49.00	82.40	17.20	14.50	25.20	49.80	82.90	48.60	41.00	69.60
August	67.90	115.40	52.20	47.70	58.30	66.80	89.10	53.30	37.20	136.10
September	214.30	140.30	243.70	178.50	227.00	197.10	212.70	128.70	146.40	151.00
October	414.20	479.70	407.80	328.80	410.00	388.90	438.40	442.70	365.90	323.00
November	611.00	492.40	583.80	569.70	625.60	663.30	751.50	542.00	504.70	688.20
December	1005.20	920.30	863.70	854.20	854.70	1080.70	867.50	675.30	878.20	1065.30
Total	6054.20	5915.40	5170.20	5626.80	5171.60	6106.80	6385.90	5911.60	5620.80	5737.90

CDD	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
April	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.60	26.10	3.90	12.70	1.10	1.90	0.90	3.40	0.00
June	10.00	19.70	3.30	2.10	33.80	9.80	20.90	5.50	16.00	8.30
July	10.60	1.80	43.40	62.00	55.50	44.10	10.30	46.90	34.20	20.20
August	9.20	20.30	58.00	25.70	22.40	30.80	9.60	22.40	36.70	8.70
September	5.60	1.60	0.00	7.70	6.00	0.00	2.00	26.00	3.00	16.80
October	0.20	0.00	0.00	5.30	0.00	0.00	0.00	0.00	0.00	0.10
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	35.60	44.00	130.80	106.70	130.40	85.80	44.70	101.70	93.30	54.10

Customer Number:

CPUC has seen a slight decline in its customer numbers therefore it made sense to test the number of customers as a variable. Although the variables did not yield particularly strong results, it did slightly improve the R-Square, and therefore CPUC opted to keep it as a variable.

Table 6 – Customer Number

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
January	1336	1327	1317	1307	1306	1228	1224	1220	1218	1227
February	1334	1326	1316	1308	1306	1241	1223	1226	1219	1226
March	1333	1327	1312	1307	1306	1237	1223	1219	1222	1234
April	1335	1324	1315	1306	1306	1234	1226	1217	1225	1239
May	1336	1326	1309	1308	1306	1232	1228	1214	1232	1235
June	1333	1323	1310	1307	1306	1235	1219	1224	1236	1231
July	1337	1324	1308	1305	1306	1229	1222	1222	1231	1247
August	1334	1325	1306	1307	1306	1230	1223	1215	1242	1225
September	1332	1322	1307	1306	1306	1225	1220	1221	1243	1293
October	1333	1324	1305	1308	1306	1239	1222	1217	1231	1240
November	1332	1322	1307	1307	1306	1231	1213	1215	1239	1233
December	1330	1320	1306	1307	1306	1229	1223	1220	1236	1215

Spring Fall Flag:

CPUC also tested a "Spring/Fall Flag" variable. Although the variables did not yield particularly strong results, it did slightly improve the R-Square, and therefore CPUC opted to keep it as a variable. The variable accounts for the seasonal increase in consumption in the summer and winter months.

Days per month:

Lastly, CPUC also tested a "Days per month" variable. Although the variables did not yield particularly significant results, it did slightly improve the R-Square, and therefore CPUC opted to keep it as a variable. All relevant scenarios tested by the utility can be found in the regression model at tab 6.1 entitled Regression Scenarios.

Using a combination of wholesale purchases and variables listed above, a multiple regression analysis was used to develop an equation describing the relationship between monthly actual wholesale kWh and the explanatory variables. CPUC also used a correlation function to examine the relationship between the variables included in the analysis. The results of the correlation analysis for each scenario can also be found at tab 6.1 entitled Regression Scenarios.

To project the adjusted wholesale purchases for the bridge and test year, the model uses, for the most part, a simple average of the last ten years of historical data. CPUC has applied this method of prediction to all variables.

Origin of variables

- HDD: Stats Canada
- CDD: Stats Canada
- Customer Number Computed by the utility
- Days per month Computed by the utility
- Spring/Fall Computed by the utility

Rational for including and excluding variables

During the process of testing the regression analysis, many different variables and times periods are tested to arrive at the best R-Squared. The utility's rational behind selecting or dropping certain variables involves a "no-worst" rational. In other words, if a variable is justified and does not worsen the results, it is generally kept as one of the regression variables. In this case, the Days per Month only slightly improved the R-Square. However, the utility still opted to keep them as part of the regression analysis.

3.1.8 REGRESSION RESULTS

Table 7 - Correlation/Regression Results below presents the regression results used to determine the load forecast

Table 7 - Correlation/Regression Results

Equation Parameters										
R Squared	0.9849					95% Confidence/Autocorrelation				
Adjusted R Squared	0.9842					0.850	Durbin-Watson Statistic			
Standard Error	97672.5234	to +/- on result of Regression Equation				1.63 - 1.77	Positive autocorrelation detected			
F - Statistic	1487.3339	Therefore analysis IS Significant				2.290	Critical F-Statistic - 95% Confidence			
						89.62%	Confidence to which analysis holds			
Multiple Regression Equation					Independent Analysis			Correlation	Multicollinearity	
	Coefficients	Standard Error	t Stat	p Value	R Squared	Coefficient	Intercept	Dl=1.69 Du=1.72	Adjusted R-Squared against other Indep	Variables With RSQ at > 90%
Intercept	-2,203,440.196	432,211.211	-5.098	0.00%				DW-Stat		
HDD	2,248.742	34.531	65.123	0.00%	97.16%	2183.44	1318775.13	0.33	43.60%	
CDD	1,632.366	974.142	1.676	9.65%	30.81%	-32070.68	2589713.00	1.11	51.79%	
Customer #	1,647.547	197.086	8.360	0.00%	0.13%	621.25	1578265.38	0.30	-3.07%	
Days in month	46,185.402	11,478.205	4.024	0.01%	2.02%	-137094.15	6542040.50	2.98	3.43%	
Spring/Fall	-45,061.633	20,926.957	-2.153	3.34%	1.26%	-174030.17	2455681.00	1.34	24.86%	

The resulting regression equation yields an adjusted R-squared of 0.9842. When actual annual wholesale values are compared to annual values predicted by the regression equation, the mean absolute percentage error (MAPE) is 0.213 per cent. More detailed model statistics can be found in the next section.

Once CPUC calculated its preferred Regression Results, the Load Forecast model then uses the coefficients from the regression results to adjust the wholesale purchases. Table 8 as seen below, demonstrates the results of this adjustment. The table shows a comparison of the actual and predicted wholesale purchases.

Table 8 - Wholesale vs. Adjusted using the coefficients from the regression results

Year	Wholesale	year over year	Predicted	year over year
2008	30,257,407		30,233,638	
2009	29,917,187	-1.12%	29,699,572	-1.77%
2010	27,909,701	-6.71%	27,882,120	-6.12%
2011	28,474,627	2.02%	28,811,892	3.33%
2012	28,011,153	-1.63%	27,855,014	-3.32%
2013	29,749,924	6.21%	28,385,912	1.91%
2014	29,940,176	0.64%	28,742,150	1.25%
2015	27,625,506	-7.73%	27,709,305	-3.59%
2016	26,137,724	-5.39%	27,325,091	-1.39%
2017	26,216,509	0.30%	27,595,221	0.99%

Table 9 as seen below, shows the results of the mean absolute deviation (MAD), the mean square error (MSE), the root mean square (RMSE) and the mean absolute Percentage error (MAPE).

Table 9 - MAP-MSE-MAPE

Period	Actual	Forecast	Error	Absolute Value of Error	Square of Error	Absolute Values of Errors Divided by Actual Values.
t	A_t	F_t	$A_t - F_t$	$\lvert A_t - F_t \rvert$	$(A_t - F_t)^2$	$\lvert (A_t - F_t)/A_t \rvert$
1	30,257,407	30,233,638	23,769	23,769	564,946,013	0.0008

29,917,187	29,699,572	217,615	217,615	47,356,501,511	0.0073
27,909,701	27,882,120	27,581	27,581	760,700,366	0.0010
28,474,627	28,811,892	-337,265	337,265	113,747,558,531	0.0118
28,011,153	27,855,014	156,139	156,139	24,379,433,358	0.0056
29,749,924	28,385,912	1,364,012	1,364,012	1,860,528,918,459	0.0458
29,940,176	28,742,150	1,198,026	1,198,026	1,435,266,585,888	0.0400
27,625,506	27,709,305	-83,799	83,799	7,022,245,375	0.0030
26,137,724	27,325,091	-1,187,367	1,187,367	1,409,840,363,409	0.0454
26,216,509	27,595,221	-1,378,712	1,378,712	1,900,845,581,546	0.0526
Totals		0.003	5974284.427	6800312834457.260	0.213

The mean absolute deviation (MAD) is the sum of absolute differences between the actual value and the forecast divided by the number of observations.

Mean square error (MSE) is probably the most commonly used error metric. It penalizes larger errors because squaring larger numbers has a greater impact than squaring smaller numbers. The MSE is the sum of the squared errors divided by the number of observations.

Mean Absolute Percentage Error (MAPE) is the average of absolute errors divided by actual observation values.

In accordance with the Filing Requirements, CPUC has also provided a 2019 forecast assuming twenty-year normal weather conditions. Table 10 below displays 20 years of historical Heating Degree Days and Cooling Degree Days. The impact of using both a 10-year average as well as a 20-year average to weather normalize wholesale purchases is presented in Table 11.

Table 10 - Forecast using a twenty-year weather normalization

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10 year avg	20 year avg
HDD																						
Jan	957.0	1097.9	1066.4	942.5	926.6	1114.4	1251.5	1112.5	841.8	973.0	942.2	1123.1	947.6	1086.8	919.1	1003.0	1128.6	1126.9	924.1	850.4	1012.2	1016.8
Feb	655.7	802.3	804.6	916.4	836.0	1008.4	844.1	834.6	925.6	1006.8	966.2	877.3	835.1	880.8	778.9	911.1	949.5	1148.6	975.5	833.9	910.1	889.6
Mar	772.6	765.9	632.6	785.0	912.3	831.3	749.9	827.9	706.9	735.1	889.6	754.9	552.0	828.3	546.2	780.0	972.3	882.7	750.4	863.7	770.1	777.0
Apr	408.4	433.1	499.0	445.6	526.3	579.9	533.5	418.8	415.5	500.7	473.6	491.0	371.5	504.4	475.0	587.3	553.0	506.3	612.0	476.4	508.5	490.6
May	187.1	183.2	249.4	196.2	360.9	243.5	305.5	261.7	210.8	215.4	334.4	317.5	186.6	236.9	191.4	277.4	269.4	245.5	257.2	179.1	240.1	245.5
Jun	114.8	92.8	157.6	104.4	112.6	99.6	150.2	50.0	89.8	85.5	86.6	121.1	109.0	96.2	60.2	101.4	71.0	111.0	128.2	101.2	99.9	102.2
Jul	54.3	28.7	77.1	70.6	31.5	47.3	68.5	37.6	31.7	55.4	49.0	82.4	17.2	14.5	25.2	49.8	82.9	48.6	41.0	69.6	47.9	49.1
Aug	55.3	109.2	75.1	65.1	59.8	58.1	129.1	47.2	94.2	77.3	67.9	115.4	52.2	47.7	58.3	66.8	89.1	53.3	37.2	136.1	72.9	74.7
Sep	191.1	180.3	235.3	217.2	142.5	178.2	110.2	135.2	227.7	167.1	214.3	140.3	243.7	178.5	227.0	197.1	212.7	128.7	146.4	151.0	180.6	181.2
Oct	392.5	458.8	375.7	409.9	519.3	438.2	390.8	366.9	463.0	335.6	414.2	479.7	407.8	328.8	410.0	388.9	438.4	442.7	365.9	323.0	398.4	407.5
Nov	588.6	538.8	616.6	519.4	759.5	614.8	570.7	655.8	566.7	668.8	611.0	492.4	583.8	569.7	625.6	663.3	751.5	542.0	504.7	688.2	602.4	606.6
Dec	860.6	836.7	1082.5	750.1	847.0	822.4	1005.1	928.8	764.7	910.5	1005.2	920.3	863.7	854.2	854.7	1080.7	867.5	675.3	878.2	1065.3	895.5	893.7
	1998.0	1999.0	2000.0	2001.0	2002.0	2003.0	2004.0	2005.0	2006.0	2007.0	2008.0	2009.0	2010.0	2011.0	2012.0	2013.0	2014.0	2015.0	2016.0	2017.0	10 year avg	20 year avg
CDD																						
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Apr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	6.3	4.5	3.6	0.0	0.1	0.0	0.8	0.0	11.8	11.5	0.0	0.6	26.1	3.9	12.7	1.1	1.9	0.9	3.4	0.0	5.6	4.5
Jun	22.3	34.3	3.7	35.8	20.9	13.6	3.4	47.1	11.9	36.7	10.0	19.7	3.3	2.1	33.8	9.8	20.9	5.5	16.0	8.3	13.3	18.0
Jul	30.5	49.5	21.9	41.2	61.3	16.0	22.1	59.3	52.6	30.3	10.6	1.8	43.4	62.0	55.5	44.1	10.3	46.9	34.2	20.2	35.4	35.7
Aug	22.4	9.8	6.9	54.8	17.5	27.4	4.2	32.9	14.4	22.5	9.2	20.3	58.0	25.7	22.4	30.8	9.6	22.4	36.7	8.7	26.1	22.8
Sep	2.7	13.7	5.0	3.0	18.2	5.6	17.8	14.6	0.2	6.0	5.6	1.6	0.0	7.7	6.0	0.0	2.0	26.0	3.0	16.8	7.0	7.8
Oct	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.3
																						0
																						0

Table 11 - Forecast using a ten year vs. twenty-year weather normalization

Date	Weather Normalized 10Year	Weather Normalized 20Year
2019-January	3586183.33	3598151.14
2019-February	3223914.18	3176602.91
2019-March	3003219.73	3016147.73
2019-April	2366428.32	2326861.71
2019-May	1820622.30	1828880.11
2019-June	1514478.78	1527680.36
2019-July	1480380.57	1483960.03
2019-August	1518599.33	1517702.42
2019-September	1651124.49	1653026.70
2019-October	2166909.39	2186633.41
2019-November	2574872.72	2584222.99
2019-December	3325670.94	3319057.38
	28232404.08	28218926.89

3.1.9 DETERMINATION OF CUSTOMER FORECAST

CPUC has used a simple geometric mean function to determine the forecasted number of customers of 2018 and 2019. The geometric mean is more appropriate to use when dealing with percentages and rates of change. Although the formula is somewhat simplistic, it is reasonably representative of CPUC's natural customer growth. The geometric mean results were analyzed by CPUC and then further adjusted for known particulars – in CPUC's case the MicroFit related consumption was removed from the Wholesale Purchases. Historical customer counts and projected customer counts for 2018 and 2019 are presented in Table 12 below. A variance analysis of customer counts and projections is presented at 3.3.10.

Table 12 - Customer Forecast

	Residential		General Service < 50 kW		General Service > 50 to 4999 kW		Unmetered Scattered Load		Sentinel		Street Lighting	
Date	**Customers or Connections**	**Growth Rate**	**Customers or Connections**	**Growth Rate**	**Customers or Connections**	**Growth Rate**	**Customers or Connections**	**Growth Rate**	**Customers or Connections**	**Growth Rate**	**Customers or Connections**	**Growth Rate**
2008	1154		169		14		4		23		328	
2009	1146	0.9935	168	0.9911	14	1.0000	4	1.0000	23	1.0000	328	1.0000
2010	1138	0.9930	161	0.9612	14	1.0000	4	1.0000	23	1.0000	328	1.0000
2011	1125	0.9881	161	1.0000	14	1.0000	4	1.0000	23	1.0000	328	1.0000
2012	1108	0.9853	162	1.0062	14	1.0000	4	1.0000	23	1.0000	328	1.0000
2013	1062	0.9580	153	0.9444	14	1.0000	4	1.0000	23	1.0000	328	1.0000
2014	1063	1.0009	152	0.9902	10	0.6786	4	1.0000	23	1.0000	328	1.0000
2015	1059	0.9962	152	1.0033	11	1.1579	4	1.0000	23	1.0000	328	1.0000
2016	1059	1.0000	157	1.0296	12	1.0909	4	1.0000	23	1.0000	328	1.0000
2017	1054	0.9957	152	0.9712	15	1.2500	4	1.0000	23	1.0000	328	
Geomean		*0.9900*		*0.9883*		*1.0077*		*1.0000*		*1.0000*		*1.0000*
2018	1043		150		15		4		23		328	
2019	1033		148		15		4		23		328	

3.1.10 DETERMINATION OF WEATHER NORMALIZED FORECAST

Allocation to specific weather sensitive rate classes (Residential, GS<50, GS>50) is based on the share (%) of each classes' actual retail kWh (exclusive of distribution losses) and a share of actual wholesale kWh. Weather normalized wholesale kWh, for historical years, are allocated to these classes based on these historical shares. Forecast values for 2018 and 2019 are allocated based on the most recent year's (2017) actual share. For those rate classes that use kW consumption as a billing determinant, sales for these customer classes are then converted to kW based on the historical volumetric relationship between kWh and kW. The utility then forecasts a consumption per customer and adds new customer's load to the total consumption for the class.

Allocation to specific non-weather sensitive rate classes (GS>50, USL, Sentinel and Streetlights) is based on an average of demand/customer. The utility then uses an appropriate historical average to determine an average demand per customer. This average is then applied to the customer count for the bridge and test year. [6]

Explanations for material changes in the definition of or major changes over time, explanations of the bridge and test year forecasts by rate class, variance analysis between the last OEB-approved and the actual and weather-normalized actual results are presented at Section 3.3.1 Variance Analysis of Load Forecast

[6] MFR - For consumption and demand - explanation to support how kWh are converted to kW for applicable demand-billed classes, year-over-year variances in kWh and kW by rate class and for system consumption overall (kWh) with explanations for material changes in the definition of or major changes over time (should be done for both historical actuals against each other and historical weather-normalized actuals over time), explanations of the bridge and test year forecasts by rate class, variance analysis between the last OEB-approved and the actual and weather-normalized actual results

3.1.11 LOAD FORECAST BY CLASS.

The following section presents class specific adjusted historical and forecast values for those classes that have weather sensitive load. Historic class, specific kWh consumption is allocated based on each class' share in wholesale kWh, exclusive of distribution losses. Forecast class values are allocated based on the class share for 2017.

Table 13 - Residential Forecast (Weather Sensitive)

Year	Residential Actual kWh	Total Actual Wholesale	Ratio%	Predicted Wholesale	Residential Weather Normal	Per customer
2008	15,056,281	30,257,407	49.76%	30,233,638	15,044,454	13,042
2009	15,018,851	29,917,187	50.20%	29,699,572	14,909,605	13,010
2010	13,600,107	27,909,701	48.73%	27,882,120	13,586,667	11,939
2011	13,967,024	28,474,627	49.05%	28,811,892	14,132,455	12,568
2012	13,667,868	28,011,153	48.79%	27,855,014	13,591,681	12,267
2013	15,071,570	29,749,924	50.66%	28,385,912	14,380,550	13,547
2014	15,225,943	29,940,176	50.85%	28,742,150	14,616,692	13,757
2015	13,727,288	27,625,506	49.69%	27,709,305	13,768,928	13,008
2016	12,612,066	26,137,724	48.25%	27,325,091	13,184,998	12,509
2017	12,775,802	26,216,509	49.55%	27,595,221	13,674,798	13,105
2018			49.55%	28,410,136	14,078,629	13,492
2019		*Avg*	49.55%	28,232,404	13,990,554	13,543

Table 14 - General Service <50 Forecast (Weather Sensitive)

Year	GS<50 Metered kWh	Wholesale Purchases	Weather Normalized	*Ratio%* *	Weather Normal	Per customer
2008	5,269,015	30,257,407	17.41%	30,233,638	5,264,876	31,153
2009	5,110,306	29,917,187	17.08%	29,699,572	5,073,134	30,287
2010	4,852,120	27,909,701	17.39%	27,882,120	4,847,325	30,108
2011	5,050,891	28,474,627	17.74%	28,811,892	5,110,716	31,744
2012	5,015,356	28,011,153	17.90%	27,855,014	4,987,400	30,786
2013	5,337,892	29,749,924	17.94%	28,385,912	5,093,154	33,289
2014	5,251,375	29,940,176	17.54%	28,742,150	5,041,246	33,276
2015	4,907,587	27,625,506	17.76%	27,709,305	4,922,474	32,385
2016	4,617,295	26,137,724	17.67%	27,325,091	4,827,046	30,844
2017	4,702,580	26,216,509	17.94%	27,595,221	4,949,886	32,565
2018			17.64%	28,410,136	5,010,785	33,356
2019		*Avg*	17.64%	28,232,404	4,979,438	33,540

Table 15 - General Service >50 (kWh) (Weather Sensitive)

Year	GS>50 Metered kWh	Wholesale Purchases	Weather Normalized	*Ratio%* *	Weather Normal	Per customer
2008	7,928,332	30,257,407	26.20%	30,233,638	7,922,104	565,865
2009	7,747,900	29,917,187	25.90%	29,699,572	7,691,542	549,396
2010	7,321,640	27,909,701	26.23%	27,882,120	7,314,405	522,457
2011	7,132,531	28,474,627	25.05%	28,811,892	7,217,012	515,501
2012	7,148,661	28,011,153	25.52%	27,855,014	7,108,813	507,772
2013	7,164,613	29,749,924	24.08%	28,385,912	6,836,121	488,294
2014	7,157,299	29,940,176	23.91%	28,742,150	6,870,907	723,253
2015	6,867,603	27,625,506	24.86%	27,709,305	6,888,435	626,221
2016	7,048,334	26,137,724	26.97%	27,325,091	7,368,521	614,043
2017	6,797,046	26,216,509	25.93%	27,595,221	7,154,499	476,967
2018			25.46%	28,410,136	7,234,473	478,615
2019		*Avg*	25.46%	28,232,404	7,189,214	471,989

Table 16 - General Service >50 Demand (kW) (Non-Weather Sensitive)

Year	kWh	kWh	kW
2008	7,928,332	20,115	0.00254
2009	7,747,900	19,967	0.00258
2010	7,321,640	18,568	0.00254
2011	7,132,531	19,549	0.00274
2012	7,148,661	18,736	0.00262
2013	7,164,613	18,431	0.00257
2014	7,157,299	20,149	0.00282
2015	6,867,603	18,062	0.00263
2016	7,048,334	18,740	0.00266
2017	6,797,046	17,522	0.00258
2018	7,234,473	19,002	0.00263
2019	7,189,214	18,883	0.00263
Avg			*0.00263*

Table 17 - Street Lighting (Non-Weather Sensitive)

Year	kWh	kW	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2008	295,998	780	328	902	2.3780	0.00264
2009	295,721	780	328	902	2.3780	0.00264
2010	293,226	780	328	894	2.3780	0.00266
2011	295,682	780	328	901	2.3780	0.00264
2012	287,471	777	328	876	2.3689	0.00270
2013	274,269	768	328	836	2.3415	0.00280
2014	274,528	768	328	837	2.3415	0.00280
2015	274,259	768	328	836	2.3415	0.00280
2016	274,259	768	328	836	2.3415	0.00280
2017	274,259	768	328	836	2.3415	0.00280
2018	283,967	774	328	866	2.3598	0.00273
2019	283,967	774	328	866	2.3598	0.00273
Avg				*866*	*2.3588*	*0.00273*

Table 18 - Unmetered Scattered Load (Non-Weather Sensitive)

Year	kWh	Customer/ Connection	kWh per connection
2008	7,247	4	1,812
2009	7,196	4	1,799
2010	7,364	4	1,841
2011	7,652	4	1,913
2012	5,058	4	1,265
2013	5,058	4	1,265
2014	4,068	4	1,017
2015	2,892	4	723
2016	2,892	4	723
2017	2,892	4	723
2018	5,232	4	1,308
2019	5,232	4	1,308
Avg		*4*	*1,308*

Table 19 - Sentinel (Non-Weather Sensitive)

Year	kWh	kW	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2008	25,159	70	23	1,094	3.0217	0.00276
2009	27,196	66	23	1,182	2.8565	0.00242
2010	26,856	66	23	1,168	2.8739	0.00246
2011	25,340	66	23	1,102	2.8652	0.00260
2012	25,594	60	23	1,113	2.6087	0.00234
2013	26,244	65	23	1,141	2.8261	0.00248
2014	26,857	75	23	1,168	3.2609	0.00279
2015	23,735	63	23	1,032	2.7391	0.00265
2016	19,993	60	23	869	2.6087	0.00300
2017	20,629	62	23	897	2.6957	0.00301
2018	24,760	65	23	1,077	2.8261	0.00263
2019	24,760	65	23	1,077	2.8261	0.00263
Avg				*1,077*	*2.8357*	*0.00265*

3.1.12 FINAL NORMALIZED LOAD FORECAST

Table 20 below presents historical and projected weather normalized Load Forecast by customer class.

Table 20 - Final Load Forecast (not CDM adjusted)

	Year	2018	2019
Residential	Cust/Conn	1,043	1,033
	kWh	14,078,629	13,990,554
	kW		-
General Service < 50 kW	Cust/Conn	150	148
	kWh	5,010,785	4,979,438
	kW		-
General Service > 50 to 4999 kW	Cust/Conn	15	15
	kWh	7,234,473	7,189,214
	kW	19,002	18,883
Unmetered Scattered Load	Cust/Conn	4	4
	kWh	5,232	5,232
	kW	-	-
Sentinel	Cust/Conn	23	23
	kWh	24,760	24,760
	kW	65	65
Street Lighting	Cust/Conn	328	328
	kWh	283,967	283,967
	kW	774	774
Total	**Cust/Conn**	**1,236**	**1,224**
	kWh	**26,637,846**	**26,473,166**
	kW	**19,841**	**19,722**

3.2 IMPACT AND PERSISTENCE FROM HISTORICAL CDM PROGRAMS[7]

3.2.1 LOAD FORECAST CDM ADJUSTMENT WORK FORM

While the forecast as presented in the previous section assumes some level of embedded "natural conservation," it does not consider the impacts on energy purchases arising from CDM programs undertaken by CPUC's customers. The load forecast is a projection of the expected level of electricity purchases that would occur over the specified period in the absence of any CDM initiatives. Therefore, in accordance with the filing requirements, the forecasted energy purchases are further adjusted to reflect CDM reductions.

The schedule to achieve CDM targets are presented in Table 21 below:

[7] MFR - Quantification of any impacts arising from the persistence of historical CDM programs as well as the forecasted impacts arising from new programs in the bridge and test years through the current 6-year CDM framework.

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Table 21 – OEB Appendix 2-I [8]

2015-2020 CDM Program - 2015, first year of the current CDM plan									
6 Year (2015-2020) kWh Target:									
1,050,000									
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**		
%									
2015 CDM Programs	5.80%	5.78%	5.78%	5.79%	5.79%	5.78%	34.71%		
2016 CDM Programs		4.39%	4.39%	4.39%	4.39%	4.39%	21.94%		
2017 CDM Programs			5.56%	4.31%	4.31%	4.31%	18.50%		
2018 CDM Programs				4.14%	4.14%	4.14%	12.42%		
2019 CDM Programs					4.14%	4.14%	8.28%		
2020 CDM Programs						4.14%	4.14%		
Total in Year	**5.80%**	**10.17%**	**15.73%**	**18.63%**	**22.77%**	**26.90%**	**100.00%**		
kWh									
2015 CDM Programs	279,974.00	279,128.00	279,128.00	279,331.00	279,331.00	278,924.00	1,675,816.00		
2016 CDM Programs		211,864.00	211,864.00	211,864.00	211,864.00	211,864.00	1,059,320.00		
2017 CDM Programs			268,397.00	208,141.00	208,141.00	208,141.00	892,820.00		
2018 CDM Programs				199,900.00	199,900.00	199,900.00	599,700.00		
2019 CDM Programs					199,900.00	199,900.00	399,800.00		
2020 CDM Programs						199,900.00	199,900.00		
Total in Year	**279,974.00**	**490,992.00**	**759,389.00**	**899,236.00**	**1,099,136.00**	**1,298,629.00**	**4,827,356.00**		

[8] MFR - Completed Appendix 2-I

Weight Factor for Inclusion in CDM Adjustment to 2014 Load Forecast									
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	
Weight Factor for each year's CDM program impact on 2014 load forecast	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0.5**	Distributor can select "0", "0.5", or "1" from drop-down list
Default Value selection rationale.									
2011-2014 and 2015-2020 LRAMVA and 2015 CDM adjustment to Load Forecast									
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Total for 2019**
	kWh								
Amount used for CDM threshold for LRAMVA (2012)	458,221-	89,257	173,818	279,331	211,864			-	-
Amount used for CDM threshold for LRAMVA (2019)						208,141.00	199,900.00	199,900.00	399,800.00
Manual Adjustment for 2019 Load Forecast (billed basis)	-				-		199,900.00	99,950.00	**299,850.00**

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The values entered in the 2015-2017 report originate from the IESO issued 2017 Final OPA CDM Results. The most recent IESO results are filed along with this Exhibit.

The values entered in the 2015-2020 originate from CPUC's approved CDM plan which shows CPUC's targets to be 1.05 GWh. .[9]

[9] MFR - CDM Adjustment - account for CDM in 2019 load forecast. Consider impact of persistence of historical CDM and impact of new programs. Adjustments may be required for IESO reported results which are full year impacts

3.2.2 ALLOCATION OF CDM RESULTS

The overall CDM adjustment for 2017, as calculated above, is allocated on a pro-rata basis (using kWh forecast) per class. Table 22 below presents the method behind CPUC's allocation of CDM reduction in consumption.

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Table 22 - CDM adjustments to Load Forecast

Weather Adjusted Load Forecast Results					2017	2017	2018+2019	total	Share	Target	Target
	Year	2018	2019		2019 persist. (kWh)	2020 persist. (kW)	CDM Plan				
Residential	Cust/Conn	1,043	1,033								1,033
	kWh	14,078,629	13,990,554		201,604	96,831	109,157	407,592	52.98%	158,874	13,831,681
	kW		-			9		9	60.00%		
General Service < 50 kW	Cust/Conn	150	148								148
	kWh	5,010,785	4,979,438		3,269	64,554	185,998	253,821	33.00%	98,936	4,880,502
	kW		-			6		6	40.00%		
General Service > 50 to 4999 kW	Cust/Conn	15	15								15
	kWh	7,234,473	7,189,214		3,269		104,588	107,856	14.02%	42,041	7,147,174
	kW	19,002	18,883			-		-	0.00%		18,883
Unmetered Scattered Load	Cust/Conn	4	4								4
	kWh	5,232	5,232						0.00%	-	5,232
	kW	-	-						0.00%		
Sentinel	Cust/Conn	23	23								23
	kWh	24,760	24,760						0.00%	-	24,760
	kW	65	65						0.00%		65
Street Lighting	Cust/Conn	328	328								328
	kWh	283,967	283,967						0.00%	-	283,967

	kW	774	774					0.00%		774
Total	**Cust/Conn**	**1,236**	**1,224**							**1,552**
	kWh	**26,637,846**	**26,473,166**	208,141	161,400	399,743	769,269	100.00%		**26,173,316**
	kW	**19,841**	**19,722**				15	100.00%	**299,850.00**	**19,722**

	Total pgms+persist to 2019	Total	Res	GS<50
kWh	699,336	161,385	96,831.14	64,554.09
kWh	65	15	9	6

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2 The following table shows the per class allocation of the amount used for CDM threshold for LRAMVA (2019).

Table 23 - Allocation of amount used for CDM threshold for LRAMVA[10]

Weather Adjusted Load Forecast Results			2017	2018-2019	total	Share	Target
	verified (kWh)	CDM Plan					
Residential	Cust/Conn	1,033					
	kWh	13,831,681	201,604	109,157	310,761	51.12%	204,385
	kW		9			0.00%	
General Service < 50 kW	Cust/Conn	148					
	kWh	4,880,502	3,269	185,998	189,267	31.14%	124,479
	kW		6				
General Service > 50 to 4999 kW	Cust/Conn	15					
	kWh	7,147,174	3,269	104,588	107,856	17.74%	70,936
	kW	18,883	-				
USL	Cust/Conn	4					
	kWh	5,232				0.00%	
	kW						
Sentinel	Cust/Conn	23					
	kWh	24,760				0.00%	
	kW	65					
Street Lighting	Cust/Conn	328					
	kWh	283,967				0.00%	
	kW	774					
Total	**Cust/Conn**						
	kWh	**1,552**					
	kW	**26,173,316**	208,156	399,743	607,884	100.00%	**399,800**

[10] MFR - CDM savings for 2017 LRAMVA balance and adjustment to 2017 load forecast; data by customer class and for both kWh and, as applicable, kW. Provide rationale for level of CDM reductions in 2017 load forecast

3.2.3 FINAL CDM ADJUSTED LOAD FORECAST

The table below provides details of the Final Customer and Volume Load Forecast for each of the years. This summary of the billing determinants by rate class will be used to develop CPUC's proposed rates.

Table 24 - Final Customer and Volume Load Forecast

Customers or Connections

	Actual							Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential	1,133	1,108	1,062	1,063	1,059	1,059	1,054	1,043	1,033
General Service < 50 kW	161	162	153	152	152	157	152	150	148
General Service > 50 to 4999 kW	14	11	11	10	11	12	15	15	15
Unmetered Scattered Load	6	4	4	4	4	4	4	4	4
Sentinel	23	23	23	23	23	23	23	23	23
Street Lighting	341	328	328	328	328	328	328	328	328
other									
other									
other									
TOTAL	**1,678**	**1,636**	**1,581**	**1,579**	**1,577**	**1,582**	**1,576**	**1,564**	**1,552**

Consumption (kWh)

	Actual							Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential	14,448,113	13,667,868	15,071,570	15,225,943	13,727,288	12,612,066	12,775,802	14,078,629	13,990,554
General Service < 50 kW	5,209,322	5,015,356	5,337,892	5,251,375	4,907,587	4,617,295	4,702,580	4,880,502	4,880,502
General Service > 50 to 4999 kW	7,592,321	7,148,661	7,164,613	7,157,299	6,867,603	7,048,334	6,797,046	7,147,174	7,147,174
Unmetered Scattered Load	7,209	5,058	5,058	4,068	2,892	2,892	2,892	5,232	5,232
Sentinel	25,718	25,594	26,244	26,857	23,735	19,993	20,629	24,760	24,760
Street Lighting	292,061	287,471	274,269	274,528	274,259	274,259	274,259	283,967	283,967
other									
other									
other									
TOTAL	**27,574,744**	**26,150,008**	**27,879,646**	**27,940,070**	**25,803,364**	**24,574,839**	**24,573,208**	**26,420,264**	**26,332,189**

CDM Adjusted Consumption (kWh)

	Projected	
Customer Class Name	**2018**	**2019**
Residential	14,078,629	13,831,681
General Service < 50 kW	4,880,502	4,880,502
General Service > 50 to 4999 kW	7,147,174	7,147,174
Unmetered Scattered Load	5,232	5,232
Sentinel	24,760	24,760
Street Lighting	283,967	283,967
other	0	
other	0	
other	0	
TOTAL	**26,420,264**	**26,173,316**

Consumption (kW)

	Actual							Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential									
General Service < 50 kW									
General Service > 50 to 4999 kW	19,360	18,736	18,431	20,149	18,062	18,740	17,522	19,002	19,002
Unmetered Scattered Load									
Sentinel	65	60	65	75	63	60	62	65	65
Street Lighting	773	777	768	768	768	768	768	774	774
other									
other									
other									
TOTAL	**20,198**	**19,573**	**19,264**	**20,992**				**19,841**	**19,841**

CDM Adjusted Consumption (kW)

	Projected	
Customer Class Name	**2018**	**2019**
Residential	0	
General Service < 50 kW	0	
General Service > 50 to 4999 kW	19,002	18,883
Unmetered Scattered Load	0	
Sentinel	65	65
Street Lighting	774	774
other	0	
other	0	
other	0	
TOTAL	**19,841**	**19,722**

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3.3 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

3.3.1 VARIANCE ANALYSIS OF LOAD FORECAST[11]

Table 25 below shows the yearly change in consumption for the Residential class.

Table 25 - Residential Variance

Year	Cust	%chg.	kWh	%chg.
2008	1,154		15,056,281	
2009	1,146	-1%	15,018,851	0%
2010	1,138	-1%	13,600,107	-9%
2011	1,125	-1%	13,967,024	3%
2012	1,108	-1%	13,667,868	-2%
2013	1,062	-4%	15,071,570	10%
2014	1,063	0%	15,225,943	1%
2015	1,059	0%	13,727,288	-10%
2016	1,059	0%	12,612,066	-8%
2017	1,054	0%	12,775,802	1%
2018	1,043	-1%	14,078,629	10%
2019	1,033	-1%	13,990,554	-1%

The number of residential customer decreased steadily since 2008. The consumption on the other hand has seen both some increases and decrease over the same period. Based on timing of the decrease, CPUC can assume that the effects of conservation measures has contributed to the reduction in overall consumption since 2015. The Load Forecast model uses a 10-year average to determine the projections and the projected consumption for 2019 factors in the reduction in CDM targets. CPUC notes that although the meter customer count is decreasing, the occupancy in the Town is increasing which is an indication that there is some stability in economic situation in the service area.

[11] MFR - For customer/connection counts - identification as to whether customer/connection count is shown in year-end or average format, year-over-year variances in changes of customer/connection counts with explanation of major changes, explanations of bridge and test year forecasts by rate class, for last rebasing variance analysis between last OEB-approved and actuals with explanations for material differences

As explained in Section 3.1.9 Determination of Customer Forecast, CPUC has used a simple 10-year (2007-2016) geometric mean function to determine the forecasted number of customers of 2018 and 2019. The methodology behind the projections for 2018 and 2019 are explained in detailed at Section 3.3.1.

Table 26 below shows the yearly change in consumption for the GS<50 kW class.

Table 26 - GS <50 kW Variance

Year	Cust	%chg.	kWh	%chg.
2008	169		5,269,015	
2009	168	-1%	5,110,306	-3%
2010	161	-4%	4,852,120	-5%
2011	161	0%	5,050,891	4%
2012	162	1%	5,015,356	-1%
2013	153	-6%	5,337,892	6%
2014	152	-1%	5,251,375	-2%
2015	152	0%	4,907,587	-7%
2016	157	3%	4,617,295	-6%
2017	152	-3%	4,702,580	2%
2018	150	-1%	5,010,785	7%
2019	148	-1%	4,979,438	-1%

The number of customers in the GS<50 kW class have remained relatively steady over the past ten years with a slight decrease per year. As the number of customer decreases, local businesses sometimes struggle to keep the door open. Being remote also makes it difficult to attract new businesses and customers. The projected consumption for 2019 factors is lower than any historical years due to the reduction attributed to CDM targets. The Load Forecast model uses a 10-year average to determine the projections.

The decrease in customer count from 2016 to 2017 is 5 and the increase from 2018 to 2019 is 2.

As explained in Section 3.1.9 Determination of Customer Forecast, CPUC has used a simple 10-year (2008-2017) geometric mean function to determine the forecasted number of customers of

2018 and 2019. The methodology behind the projections for 2018 and 2019 are explained in detailed at Section 3.3.1.

Table 27 below shows the yearly change in consumption for the GS>50kW class.

Table 27 - GS>50 Variance

Year	Cust	%chg.	kWh	%chg.	kW	%chg.
2008	14		7,928,332		20,115	
2009	14	0%	7,747,900	-2%	19,967	-1%
2010	14	0%	7,321,640	-6%	18,568	-7%
2011	14	0%	7,132,531	-3%	19,549	5%
2012	14	0%	7,148,661	0%	18,736	-4%
2013	14	0%	7,164,613	0%	18,431	-2%
2014	10	-32%	7,157,299	0%	20,149	9%
2015	11	16%	6,867,603	-4%	18,062	-10%
2016	12	9%	7,048,334	3%	18,740	4%
2017	15	25%	6,797,046	-4%	17,522	-6%
2018	15	1%	7,234,473	6%	19,002	8%
2019	15	1%	7,189,214	-1%	18,883	-1%

Similar to the GS<50kW, the number of customers in the GS>50 kW class have also remained relatively steady over the past 10 years. The region's manufacturing and retail footprint has struggled over the past decade, reflecting the challenges faced in most parts of rural Ontario and Canada with its relatively narrow economic base and concentration in slow growing or declining industries. The projected consumption for 2019 factors is lower than any historical years due to the reduction attributed to CDM targets. The Load Forecast model uses a 10-year average to determine the projections.

CPUC does not anticipate any new GS>50 customers in 2018 and 2019.

As explained in Section 3.1.9 Determination of Customer Forecast, CPUC has used a simple 10-year (2008-2017) geometric mean function to determine the forecasted number of customers of 2018 and 2019. The methodology behind the projections for 2018 and 2019 are explained in detailed at Section 3.3.1.

Table 28 -Streetlights Variance below shows the yearly change in consumption for the Streetlight class.

Table 28 -Streetlights Variance

Year	Cust	%chg.	kWh	%chg.	kW	%chg.
2008	328		295,998		780	
2009	328	0%	295,721	0%	780	0%
2010	328	0%	293,226	-1%	780	0%
2011	328	0%	295,682	1%	780	0%
2012	328	0%	287,471	-3%	777	0%
2013	328	0%	274,269	-5%	768	-1%
2014	328	0%	274,528	0%	768	0%
2015	328	0%	274,259	0%	768	0%
2016	328	0%	274,259	0%	768	0%
2017	328	0%	274,259	0%	768	0%
2018	328	0%	283,967	4%	774	1%
2019	328	0%	283,967	0%	774	0%

Connection count and consumption for the Streetlight class has been consistent since 2008. The Load Forecast model uses a 10-year (2008-2017) average to determine the projections.

As explained in Section 3.1.9 Determination of Customer Forecast, CPUC has used a simple 10-year (2008-2017) geometric mean function to determine the forecasted number of customers of 2018 and 2019. The methodology behind the projections for 2018 and 2019 are explained in detailed at Section 3.3.1.

Table 29 - Sentinel Lights Variance below shows the yearly change in consumption for the Sentinel Lighting class.

Table 29 - Sentinel Lights Variance

Year	Cust	%chg.	kWh	%chg.	kW	%chg.
2008	23		25,159		70	
2009	23	0%	27,196	8%	66	-5%
2010	23	0%	26,856	-1%	66	1%
2011	23	0%	25,340	-6%	66	0%
2012	23	0%	25,594	1%	60	-9%
2013	23	0%	26,244	3%	65	8%
2014	23	0%	26,857	2%	75	15%
2015	23	0%	23,735	-12%	63	-16%
2016	23	0%	19,993	-16%	60	-5%
2017	23	0%	20,629	3%	62	3%
2018	23	0%	24,760	20%	65	5%
2019	23	0%	24,760	0%	65	0%

Connection count and consumption for the Sentinel class has been consistent since 2008. The Load Forecast model uses a 10-year (2008-2017) average to determine the projections.

As explained in Section 3.1.9 Determination of Customer Forecast, CPUC has used a simple 10-year (2008-2017) geometric mean function to determine the forecasted number of customers of 2018 and 2019. The methodology behind the projections for 2018 and 2019 are explained in detailed at Section 3.3.1.

Table 30 - USL Variance below shows the yearly change in consumption for the USL class.

Table 30 - USL Variance

Year	Cust	%chg.	kWh	%chg.
2008	4		7,247	
2009	4	0%	7,196	-1%
2010	4	0%	7,364	2%
2011	4	0%	7,652	4%
2012	4	0%	5,058	-34%
2013	4	0%	5,058	0%
2014	4	0%	4,068	-20%
2015	4	0%	2,892	-29%
2016	4	0%	2,892	0%
2017	4	0%	2,892	0%
2018	4	0%	5,232	81%
2019	4	0%	5,232	0%

CPUC does not anticipates any changes in USL connection for 2018 and the 2019 Test year. The Load Forecast model uses a 10-year average to determine the projections. The methodology behind the projections for 2017 and 2018 are explained in detailed at Section 3.3.1.

In summary, for customer counts CPUC expects slight decrease in weather sensitive classes. CPUC projects no material change in the GS>50, Streetlights, USL and Sentinel Lights. CPUC is expecting reduced consumption in each of the classes except a small increase in the USL class.

Table 31 – 2012 Board Approved VS 2019 Load Forecast below shows the difference between the 2012 Board Approved Load Forecast and the 2019 Load Forecast. Table 31 below shows the 2014 Board Approved Forecast vs the 2019 Test Year Forecast (CDM Adjusted). CPUC notes that has little control over its Board Approved Load Forecast as the OEB dictates the manner in which the forecast is determined (i.e. using a multivariate regression analysis based on multi-year historical values.) In other words, the Load Forecasting process is formulaic in natures and year over year variances are outside of the utility's control. That said CPUC notes that all classes have remained relatively unchanged since the utility's Board Approved 2012 Load Forecast.

The overall consumption decline can be explained by the decline in customer count and changes in weather patterns and effects of energy efficiencies.

Table 31 – 2012 Board Approved VS 2019 Load Forecast

	Customers or Connections		
	Actual	Projected	Variance
Customer Class Name	2012 Board Appr.	2019	
Residential	1,133	1,033	-100
General Service < 50 kW	161	148	-13
General Service > 50 to 4999 kW	14	15	1
Unmetered Scattered Load	6	4	-2
Sentinel Lighting	23	23	0
Street Lighting	341	328	-13
TOTAL	**1,678**	**1,552**	-126
	Consumption (kWh)		
	Actual	Projected	Variance
Customer Class Name	2012 Board Appr.	2019	
Residential	14,448,113	13,831,681	-616,432
General Service < 50 kW	5,209,322	4,880,502	-328,820
General Service > 50 to 4999 kW	7,592,321	7,147,174	-445,147
Unmetered Scattered Load	7,209	5,232	-1,977
Sentinel Lighting	25,718	24,760	-958
Street Lighting	292,061	283,967	-8,094
TOTAL	**27,574,744**	**26,173,316**	-1,401,428
	Consumption (kW)		
	Actual	Projected	Variance
Customer Class Name	2012 Board Appr.	2019	0
Residential			0
General Service < 50 kW			0
General Service > 50 to 4999 kW	19,360	18,883	-477
Unmetered Scattered Load			0
Sentinel Lighting	65	65	0
Street Lighting	773	774	1
TOTAL	**20,198**	**19,722**	-476

Table 32 below, presents variances between actuals and 2012 Board Approved. As shown in the table below, the trend in Residential customer count declined between the last Board Approved and its 2019 forecast resulting in a loss of 100 customer . Most classes saw a moderate increase

in consumption in 2018 only to be offset by CDM target reductions in 2019. The overall consumption has declined due to energy conservation and loss of residential and GS<50 customers.

With respect to consumption, as explained in section 3.1.6, the assumption is that the effects of energy efficient changes have contributed to the modest decline in consumption vs the increase in customer count. The customer/connection count for all other classes has remained relatively unchanged.

Table 32 - Yearly Variances from Last Board Approved

		Actual						Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential		-25	-47	1	-4	0	-5	-11	-10
General Service < 50 kW		1	-9	-2	1	5	-5	-2	-2
General Service > 50 to 4999 kW		-3	0	-2	2	1	3	0	0
Unmetered Scattered Load		-2	0	0	0	0	0	0	0
Sentinel		0	0	0	0	0	0	0	0
Street Lighting		-13	0	0	0	0	0	0	0
TOTAL	**0**	**-42**	**-56**	**-2**	**-2**	**6**	**-6**	**-12**	**-12**

Consumption (kWh)

		Actual						Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential		-780,245	1,403,702	154,373	-1,498,655	-1,115,222	163,736	1,302,827	-246,948
General Service < 50 kW		-193,966	322,536	-86,517	-343,788	-290,292	85,285	177,922	0
General Service > 50 to 4999 kW		-443,660	15,952	-7,314	-289,696	180,731	-251,288	350,128	0
Unmetered Scattered Load		-2,151	0	-990	-1,176	0	0	2,340	0
Sentinel		-124	650	613	-3,122	-3,742	636	4,131	0
Street Lighting		-4,590	-13,202	259	-269	0	0	9,708	0
TOTAL	**0**	**-1,424,736**	**1,729,638**	**60,424**	**-2,136,706**	**-1,228,525**	**-1,631**	**1,847,056**	**-246,948**

Consumption (kW)

		Actual						Projected	
Customer Class Name	**Last Board Appr**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential		0	0	0	0	0	0	0	0
General Service < 50 kW		0	0	0	0	0	0	0	0
General Service > 50 to 4999 kW		-624	-305	1,718	-2,087	678	-1,218	1,480	-119
Unmetered Scattered Load		0	0	0	0	0	0	0	0
Sentinel		-5	5	10	-12	-3	2	3	0
Street Lighting		4	-9	0	0	0	0	6	-0
TOTAL	**0**	**-625**	**-309**	**1,728**				**1,489**	**-119**

Table 33 – OEB Appendix 2-IA

	Calendar Year		Customers / Connections			Consumption (kWh) [3]				Demand (kW or kVA)				Revenues	
	(for 2017 Cost of Service)					Weather-actual	Weather-normalized			Weather-actual	Weather-normalized			Weather-actual	Weather-normalized
Historical															
Historical															
Historical															
Historical															
Historical															
Bridge Year (Forecast)															
Test Year (Forecast)															

Due to its length when printed, CPUC has filed the OEB Appendix 2-IB at Appendix A of this Exhibit.[12]

[12] MFR - Completed Appendix 2-IB; the customer and load forecast for the test year must be entered on RRWF, Tab 10

Table 34 below presents the actual average use per customer, by customer class, and historical and adjusted forecast average use per customer generated using the load forecast. As can be seen from the results below, the predicted use per customer follows the trend created from its historical usage per customer.[13]

Table 34 - Average per customer use

	Residential	GS<50	GS>50		USL		Sentinel		Streetlights	
Year	**kWh/Cust**	**kWh/Cust**	**kWh/Cust**	**kW/Cust**	**kWh/Cust**	**kW/Cust**	**kWh/conn**	**kW/conn**	**kWh/conn**	**kW/conn**
2008	13,042	31,153	565,865	1,437	1,812	0	1,094	3	902	2
2009	13,010	30,287	549,396	1,426	1,799	0	1,182	3	902	2
2010	11,939	30,108	522,457	1,326	1,841	0	1,168	3	894	2
2011	12,568	31,744	515,501	1,396	1,913	0	1,102	3	901	2
2012	12,267	30,786	507,772	1,338	1,265	0	1,113	3	876	2
2013	13,547	33,289	488,294	1,317	1,265	0	1,141	3	836	2
2014	13,757	33,276	723,253	2,121	1,017	0	1,168	3	837	2
2015	13,008	32,385	626,221	1,642	723	0	1,032	3	836	2
2016	12,509	30,844	614,043	1,562	723	0	869	3	836	2
2017	13,105	32,565	476,967	1,168	723	0	897	3	836	2
2018	13,492	33,356	478,615	1,257	1,308	0	1,077	3	866	2
2019	13,543	33,540	471,989	1,240	1,308	0	1,077	3	866	2

The next section details a variance analysis of the utility's past and projected revenues.

[13] MFR - With respect to average consumption, for each rate class, distributors are to provide weather-actual and weather-normalized average annual consumption or demand per customer as applicable for last OEB approved and historical, weather normalized average annual consumption or demand per customer for the bridge and test years, explanation of the net change in average consumption from last OEB-approved and actuals from historical, bridge and test years based on year-over-year variances and any apparent trends in data

3.3.2 VARIANCE ANALYSIS OF DISTRIBUTION REVENUES[14]

The tables below provide details of the Final Customer and Volume Load Forecast for each of the years. This summary of the billing determinants by rate class will be used to develop CPUC's proposed rates.

[14] MFR - For revenues - calculation of bridge year forecast of revenues at existing rates, calculation of test year forecasted revenues at existing and proposed rates, year-over-year variances in revenues comparing historical actuals and bridge and test year forecasts

Table 35 - Variance Analysis of Revenues

The table below shows year over year of CPUC's revenues. A detailed analysis follows.

	Year	2012 Board Approved	2012	Variance	2013	Variance	2014	Variance	2015	Variance
Residential	Fixed	$20.15	$20.15	$0.00	$23.48	$3.33	$23.77	$0.29	$24.04	$0.27
	Variable	$0.0135	$0.0135	$0.0000	$0.0136	$0.0001	$0.0138	$0.0002	$0.0140	$0.0002
	Cust/Conn	1,133	1,108	-25	1,062	-47	1,063	1	1,059	-4
	kWh	14,448,113	13,667,868	-780245	15,071,570	1403702	15,225,943	154373	13,727,288	-1498655
	Revenues	$469,008.93	$452,430.62	-$16,578.31	$504,061.59	$51,630.97	$513,185.51	$9,123.92	$497,538.11	-$15,647.40
General Service < 50 kW	Fixed	$31.79	$31.79	$0.00	$34.35	$2.56	$34.78	$0.43	$35.18	$0.40
	Variable	$0.0174	$0.0174	$0.0000	$0.0175	$0.0001	$0.0177	$0.0002	$0.0179	$0.0002
	Cust/Conn	161	161	0	153	-8	152	-2	152	1
	kWh	5,209,322	5,015,356	-193966	5,337,892	322536	5,251,375	-86517	4,907,587	-343788
	Revenues	$152,060.48	$148,685.47	-$3,375.01	$156,479.71	$7,794.24	$156,179.38	-$300.33	$152,014.13	-$4,165.25
General Service > 50 kW - 4999 kW	Fixed	$188.72	$188.72	$0.00	$189.63	$0.91	$34.78	-$154.85	$193.66	$158.88
	Variable	$3.6405	$3.6405	$0.0000	$3.6006	-$0.0399	$3.5875	-$0.0131	$3.6185	$0.0310
	Cust/Conn	14	14	0	14	0	10	-5	11	2
	kWh	7,592,321	7,148,661	-443660	7,164,613	15952	7,157,299	-7314	6,867,603	-289696
	kW	19,360	18,736	-624	18,431	-305	20,149	1718	18,062	-2087
	Revenues	$71,091.68	$68,820.01	-$2,271.67	$66,967.56	-$1,852.45	$72,693.51	$5,725.95	$65,834.99	-$6,858.52
Unmetered Scattered Load	Fixed	$20.15	$20.15	$0.00	$23.49	$3.34	$24.71	$1.22	$24.99	$0.28
	Variable	$0.0326	$0.0326	$0.00	$0.0328	$0.0002	$0.0332	$0.0004	$0.0336	$0.0004
	Cust/Conn	6	4	-2	4	0	4	0	4	0
	kWh	7,209	5,058	-2151	5,058	0	4,068	-990	2,892	-1176
	Revenues	$1,686	$1,132	-$553.72	$1,293	$161.33	$1,321	$27.72	$1,297	-$24.45
Sentinel	Fixed	$4.41	$4.41	$0.00	$5.44	$1.03	$7.84	$2.40	$8.65	$0.81
	Variable	$8.6067	$8.6067	$0.0000	$10.1552	$1.5485	$13.6395	$3.4843	$15.0437	$1.4042
	Cust/Conn	23	23	0	23	0	23	0	23	0
	kWh	25,718	25,594	-124	26,244	650	26,857	613	23,735	-3122
	kW	65	60	-5	65	5	75	10	63	-12
	Revenues	$2,934.88	$2,891.85	-$43.03	$3,462.92	$571.07	$4,787.46	$1,324.54	$5,099.81	$312.35
Streetlighting	Fixed	$3.50	$3.50	$0.00	$3.92	$0.42	$4.38	$0.46	$4.43	$0.05
	Variable	$14.4120	$14.4120	$0.0000	$18.3108	$3.8988	$20.3873	$2.0765	$20.6218	$0.2345
	Cust/Conn	335	328	-7	328	0	328	0	328	0
	kWh	292,061	287,471	-4590	274,269	-13202	274,528	259	274,259	-269
	kW	773	777	4	768	-9	768	0	768	0
	Revenues	$69,076.72	$67,923.76	-$1,152.96	$86,134.00	$18,210.25	$95,901.86	$9,767.86	$97,004.95	$1,103.09
Total	Cust/Conn	1,672	1,638	-34	1,584	-55	1,579	-5	1,577	-2
	kWh	27,574,744	26,150,008	-1424736	27,879,646	1729638	27,940,070	60424	25,803,364	-2136706
	kW	642,953	621,821	-21132	681,099	59278	691,678	10579	669,742	-21936
	$	$765,858.51	$741,883.80	-$23,974.70	$818,399.21	$76,515.41	$844,068.86	$25,669.65	$818,788.68	-$25,280.18

1 **Variance Analysis of Revenues (Cont'd)**

2

	Year	2016	Variance	2017	Variance	2018	Variance	2019
Residential	Fixed	$24.04	$0.00	$24.04	$0.00	$24.04	$0.00	$40.29
	Variable	$0.0140	$0.0000	$0.0140	$0.0000	$0.0140	$0.0000	$0.0089
	Cust/Conn	1,059	0	1,054	-5	1,043	-11	1,033
	kWh	12,612,066	-1115222	12,775,802	163736	13,990,554	1214752	13,831,681
	Revenues	$481,925.00	-$15,613.11	$482,919.15	$994.14	$496,893.29	$13,974.14	$621,996.26
General Service < 50 kW	Fixed	$35.18	$0.00	$35.18	$0.00	$35.18	$0.00	$44.59
	Variable	$0.0179	$0.0000	$0.0179	$0.0000	$0.0179	$0.0000	$0.0227
	Cust/Conn	157	5	152	-5	150	-2	148
	kWh	4,617,295	-290292	4,702,580	85285	4,979,438	276858	4,880,502
	Revenues	$148,717.62	-$3,296.51	$148,344.50	-$373.12	$152,548.80	$4,204.30	$190,170.58
General Service > 50 kW - 4999 kW	Fixed	$193.66	$0.00	$193.66	$0.00	$193.66	$0.00	$193.66
	Variable	$3.6185	$0.0000	$3.6185	$0.0000	$3.6185	$0.0000	$5.0878
	Cust/Conn	12	1	15	3	15	0	15
	kWh	7,048,334	180731	6,797,046	-251288	7,189,214	392168	7,147,174
	kW	18,740	678	17,522	-1218	18,883	1361	18,883
	Revenues	$68,331.75	$2,496.77	$64,054.69	-$4,277.07	$68,985.61	$4,930.92	$131,471.53
Unmetered Scattered Load	Fixed	$24.99	$0.00	$24.99	$0.00	$24.99	$0.00	$20.92
	Variable	$0.0336	$0.0000	$0.0336	$0.0000	$0.0336	$0.0000	$0.0281
	Cust/Conn	4	0	4	0	4	0	4
	kWh	2,892	0	2,892	0	5,232	2340	5,232
	Revenues	$1,297	$0.00	$1,297	$0.00	$1,375	$78.62	$1,151
Sentinel	Fixed	$8.65	$0.00	$8.65	$0.00	$8.65	$0.00	$15.60
	Variable	$15.0437	$0.0000	$15.0437	$0.0000	$15.0437	$0.0000	$27.1233
	Cust/Conn	23	0	23	0	23	0	23
	kWh	19,993	-3742	20,629	636	24,760	4131	24,760
	kW	60	-3	62	2	65	3	65
	Revenues	$5,054.68	-$45.13	$5,084.77	$30.09	$5,129.90	$45.13	$6,067.41
Streetlighting	Fixed	$4.43	$0.00	$4.43	$0.00	$4.43	$0.00	$5.62
	Variable	$20.6218	$0.0000	$20.6218	$0.0000	$20.6218	$0.0000	$26.1388
	Cust/Conn	328	0	328	0	328	0	328
	kWh	274,259	0	274,259	0	283,967	9708	283,967
	kW	768	0	768	0	774	6	774
	Revenues	$97,004.95	$0.00	$97,004.95	$0.00	$97,128.68	$123.73	$42,324.86
Total	Cust/Conn	1,582	6	1,576	-6	1,564	-12	1,552
	kWh	24,574,839	-1228525	24,573,208	-1631	26,473,166	1899958	26,173,316
	kW	651,507	-18235	650,912	-595	670,540	19627	833,040
	$	$802,330.70	-$16,457.98	$798,704.75	-$3,625.95	$822,061.59	$23,356.84	$993,182.05

3

2012 Board Approved VS 2012 Actual

The total distribution revenue in 2012 of $765,858 was -$23,974 lower than the 2012 Board Approved the reason being that the regression analysis used in Cost of Service applications overestimate the Load Forecast compared to actuals. CPUC's rates came into effect November 1, 2012 therefore most of the effects of the Cost of Service were felt in 2013 rather than 2012.

2012Actual VS 2013 Actual

The total distribution revenue in 2013 of $818,399 was 76,515.41higher than the 2012 Actual therefore no explanation is required. CPUC's rates came into effect November 1, 2012 therefore most of the effects of the Cost of Service were felt in 2013 rather than 2012.

2013 Actual VS 2014 Actual

The total distribution revenue in 2014 of $844,068 was 25,699 higher than the 2013 Actual therefore no explanation is required. The increase is due to the effects of the 2013 IRM.

2014 Actual VS 2015 Actual

The total distribution revenue in 2015 of $818,788 was -25,280 less than the 2014 Actual therefore no explanation is required. The increase is due to the effects of the 2014 IRM.

2015 Actual VS 2016 Actual

The total distribution revenue in 2016 of $802,330 was $16,457 less than the 2015 Actual. The increase is due to the effects of the 2015 IRM.

2016 Actual VS 2017 Actual

The total distribution revenue in 2017 of $798,704 was a marginal $3,625 less than the 2016 Actual therefore no explanation is required.

2017 Actual VS 2018 Predicted

The total distribution revenue in 2018 of $822,061 is projected to be $23,325 greater than 2017. The main reason for the overall projected increase in distribution revenues was an increase in the consumption all classes.

2018 Predicted VS 2019

The total distribution revenue in 2019 of $993,182 is 171,120 more than the 2018 projections of 822,061. The majority of the variance is attributed to the request for new rates to eliminate the revenue deficiency.

Table 36 - Revenues at proposed rates

2019 Rates at 2019 Load

	Test Year Projected Revenue from Existing Variable Charges							
Customer Class Name	Variable Distribution Rate	per	Test Year Volume	Gross Variable Revenue	Transform. Allowance Rate	Transform. Allowance kW's	Transform. Allowance $'s	Net Variable Revenue
Residential	$0.0089	kWh	13,831,681	$122,521.98			$0.00	$122,521.98
General Service < 50 kW	$0.0227	kWh	4,880,502	$110,730.61			$0.00	$110,730.61
General Service > 50 to 4999 kW	$5.0878	kW	18,883	$96,074.17	0.60		$0.00	$96,074.17
Unmetered Scattered Load	$0.0281	kWh	5,232	$147.17			$0.00	$147.17
Sentinel	$27.1233	kW	65	$1,763.01			$0.00	$1,763.01
Street Lighting	$26.1388	kW	774	$20,223.57			$0.00	$20,223.57
Total Variable Revenue			18,737,137	$351,460.51	0.6	0	$0.00	$351,460.51

2019 Rates at 2019 Load

	Test Year Projected Revenue from Proposed Fixed Charges							
Customer Class Name	Fixed Rate	Customers (Connections)	Fixed Charge Revenue	Variable Revenue	TOTAL	% Fixed Revenue	% Variable Revenue	% Total Revenue
Residential	$40.2900	1,033	$499,474.28	$122,521.98	$621,996.26	80.30%	19.70%	62.63%
General Service < 50 kW	$44.5909	148	$79,439.97	$110,730.61	$190,170.58	41.77%	58.23%	19.15%
General Service > 50 to 4999 kW	$193.6600	15	$35,397.36	$96,074.17	$131,471.53	26.92%	73.08%	13.24%
Unmetered Scattered Load	$20.9219	4	$1,004.25	$147.17	$1,151.42	87.22%	12.78%	0.12%
Sentinel	$15.5957	23	$4,304.40	$1,763.01	$6,067.41	70.94%	29.06%	0.61%
Street Lighting	$5.6152	328	$22,101.28	$20,223.57	$42,324.86	52.22%	47.78%	4.26%
Total Fixed Revenue		1,552	$641,721.54	$351,460.51	$993,182.05			

3.4 OTHER REVENUES

3.4.1 OVERVIEW OF OTHER REVENUE

Other Distribution Revenues are revenues that are distribution related but are sourced from means other than distribution rates. For this reason, other revenues are deducted from CPUC's proposed revenue requirement. Further details on the derivation of the Revenue Requirement is presented in Exhibit 6.

Other Distribution Revenues includes items such as:

- Specific Service Charges
- Late Payment Charges
- Other Distribution Revenues
- Other Income and Expenses

CPUC is proposing one change to the MicroFit Service Charges as explained in 3.4.3

OEB APPENDIX 2-H OTHER OPERATING REVENUES

A detailed breakdown by USoA account is shown in Table 37 - OEB Appendix 2-H presented on the next page. Year over year variance analysis follow at Section 3.4.2 - Other Revenue Variance Analysis.

Table 37 – OEB Appendix 2-H[15]

	Reporting Basis	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CGAAP	CBAAP	CGAAP	CGAAP
		2012	2012	2012	2013	2013	2014	2015	2016	2017	2018	2019
	USoA Description	**Board Approved**										
4235	**4235-Miscellaneous Service Revenues**	$0	-$8,156	-$8,156	-$6,985	-$6,985	-$9,142	-$7,995	-$5,580	-$9,731	-$6,085	-$6,207
4225	**4225-Late Payment Charges**	$0	-$5,624	-$5,624	-$7,192	-$7,192	-$7,546	-$6,480	-$5,782	-$5,682	-$5,250	-$5,355
4082	4082-Retail Services Revenues	$0	-$3,061	-$3,061	-$3,009	-$3,009	-$2,763	-$2,706	-$3,090	-$2,749	-$2,580	-$2,632
4084	4084-Service Transaction Requests (STR) Revenues	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4086	4086-SSS Administration Revenue	$0	-$4,713	-$4,713	-$4,695	-$4,695	-$4,935	$0	$0	$0	$0	$0
4205	4205-Interdepartmental Rents	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4210	4210-Rent from Electric Property	$0	-$9,150	-$9,150	-$12,234	-$12,234	-$13,519	-$13,519	-$13,519	-$13,609	-$13,450	-$13,719
4215	4215-Other Utility Operating Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4220	4220-Other Electric Revenues	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4240	4240-Provision for Rate Refunds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4245	4245-Government Assistance Directly Credited to Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4305	4305-Regulatory Debits	$0	$0	$0	$24,413	$24,413	$20,042	$45,468	$0	$0	$0	$0
4310	4310-Regulatory Credits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4315	4315-Revenues from Electric Plant Leased to Others	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4320	4320-Expenses of Electric Plant Leased to Others	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4324	4324-Special Purpose Charge Recovery	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4325	4325-Revenues from Merchandise Jobbing, Etc.	$0	$652	$652	$2,379	$2,379	-$6,121	-$825	-$18,559	-$15	$0	$0
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	$0	$0	$0	-$1,487	-$1,487	$0	-$1,320	-$1,496	$0	$0	$0
4335	4335-Profits and Losses from Financial Instrument Hedges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4340	4340-Profits and Losses from Financial Instrument Investments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4345	4345-Gains from Disposition of Future Use Utility Plant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4350	4350-Losses from Disposition of Future Use Utility Plant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

[15] MFR - Completed Appendix 2-H

4355	4355-Gain on Disposition of Utility and Other Property	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$50,000	$0
4360	4360-Loss on Disposition of Utility and Other Property	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4365	4365-Gains from Disposition of Allowances for Emission	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4370	4370-Losses from Disposition of Allowances for Emission	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4375	4375-Revenues from Non-Utility Operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4375	4375-Sub-account Generation Facility Revenues	$0	$0	$0	$0	$0	$0	$0	$0	-$16,952	-$38,700	-$39,474
4380	4380-Expenses of Non-Utility Operations	$0	$0	$0	$0	$0	$0	$0	$0	$18,360	$25,155	$25,658
4380	4380-Sub-account Generation Facility Expenses	$0	$0	$0	$0	$0	$0	$0	$1,152	$0	$0	$0
4385	4385-Non-Utility Rental Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4390	4390-Miscellaneous Non-Operating Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4395	4395-Rate-Payer Benefit Including Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4398	4398-Foreign Exchange Gains and Losses, Including Amortization	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4405	4405-Interest and Dividend Income	$0	-$14,509	-$14,509	-$8,952	-$8,952	-$14,074	-$13,641	-$3,650	-$9,313	-$3,000	-$9,000
4415	4415-Equity in Earnings of Subsidiary Companies	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
othe	other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
othe	other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total	-$6,000	-$44,560	-$44,560	-$17,762	-$17,762	-$38,058	-$38,058	-$38,058	-$1,018	-$50,523	-$50,729
	Specific Service Charges	$0	-$8,156	-$8,156	-$6,985	-$6,985	-$9,142	-$7,995	-$5,580	-$9,731	-$6,085	-$6,207
	Late Payment Charges	$0	-$5,624	-$5,624	-$7,192	-$7,192	-$7,546	-$6,480	-$5,782	-$5,682	-$5,250	-$5,355
	Other Distribution/Operating Revenues	$0	-$16,923	-$16,923	-$19,938	-$19,938	-$21,216	-$16,225	-$16,609	-$16,357	-$16,030	-$16,351
	Other Income or Deductions	$0	-$13,857	-$13,857	$16,353	$16,353	-$154	$29,681	-$22,552	-$7,920	-$66,545	-$22,816
	Total	$0	-$44,560	-$44,560	-$17,762	-$17,762	-$38,058	-$1,018	-$50,523	-$39,691	-$93,910	-$50,729

1

2

Account 4405 - Interest and Dividend Income

	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual[2]	2017 Actual	2018 Bridge Year[2]	2019 Test Year
Reporting Basis	Accrual	Accrual	Accrual	Accrual	Accrual	Accrual	Accrual	Accrual
Interest and Dividend Income	-5,494.15	-4,839.91	-10,262.04	-10,.839.07	-2,180.32	-5,884.81	-1,830	-5,490
Interest and Dividend Income - Carrying Charges	-9,014.74	-4,112.32	-3,812.44	-2,802.20	-1,469.24	-3,428.49	-1,170	-3,510
Total	-14,509.89	-8,952.23	-14,074.48	-13,641.27	-3,649.56	-9,313.30	$- 3,000	$- 9,000

3.4.2 OTHER REVENUE VARIANCE ANALYSIS[16]

Table 38 to 45 below presents year over year variances of other operating revenues:

Table 38 - Variance Analysis of Other Operating Revenues

2012 – 2013

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2012	**2013**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$8,156	-$6,985	$1,171	-14.36%
4225	**4225-Late Payment Charges**	-$5,624	-$7,192	-$1,568	27.88%
4082	4082-Retail Services Revenues	-$3,061	-$3,009	$52	-1.70%
4086	4086-SSS Administration Revenue	-$4,713	-$4,695	$18	-0.38%
4210	4210-Rent from Electric Property	-$9,150	-$12,234	-$3,084	33.70%
4305	4305-Regulatory Debits	$0	$24,413	$24,413	100.00%
4325	4325-Revenues from Merchandise Jobbing, Etc.	$652	$2,379	$1,727	264.88%
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	$0	-$1,487	-$1,487	100.00%
4405	4405-Interest and Dividend Income	-$14,509	-$8,952	$5,557	-38.30%
	Total	-$44,560	-$17,762	$26,799	-60.14%
	Specific Service Charges	-$8,156	-$6,985	$1,171	-14.36%
	Late Payment Charges	-$5,624	-$7,192	-$1,568	27.88%
	Other Distribution/Operating Revenues	-$16,923	-$19,938	-$3,015	17.82%
	Other Income or Deductions	-$13,857	$16,353	$30,210	-218.01%
	Total	-$44,560	-$17,762	$26,798	-60.14%

2012 Actual over 2013 Actual - The Other Revenues variance reflects a decrease of $26,798. This The decrease in for the most part due to a one time debit to account 4305-Regulatory Debits. . The purpose of the debit is to record regulatory liabilities imposed on the utility by the ratemaking actions of the Board. The reason for the variance is that KPMG did a yearly adjustment to the regulatory accounts for the IFRS depreciation (as per FAQ document from the OEB in 2012).

[16] MFR - Variance analysis - year over year, historical, bridge and test

Table 39 - Variance Analysis of Other Operating Revenues

2013-2014

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2013	**2014**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$6,985	-$9,142	-$2,157	30.88%
4225	**4225-Late Payment Charges**	-$7,192	-$7,546	-$353	4.91%
4082	4082-Retail Services Revenues	-$3,009	-$2,763	$246	8.19%
4086	4086-SSS Administration Revenue	-$4,695	-$4,935	-$240	5.11%
4205	4205-Interdepartmental Rents	$0	$0	$0	
4210	4210-Rent from Electric Property	-$12,234	-$13,519	-$1,285	10.50%
4305	4305-Regulatory Debits	$24,413	$20,042	-$4,371	17.91%
4325	4325-Revenues from Merchandise Jobbing, Etc.	$2,379	-$6,121	-$8,500	357.32%
4405	4405-Interest and Dividend Income	-$8,952	-$14,074	-$5,122	57.22%
	Total	-$17,762	-$38,058	-$20,296	114%
	Specific Service Charges	-$6,985	-$9,142	-$2,157	30.88%
	Late Payment Charges	-$7,192	-$7,546	-$353	4.91%
	Other Distribution/Operating Revenues	-$19,938	-$21,216	-$1,279	6.41%
	Other Income or Deductions	$16,353	-$154	-$16,507	100.94%
	Total	-$17,762	-$38,058	-$20,296	114.27%

2014 Actual over 2013 Actual - The Other Revenues variance reflects an increase of $20,296. The increase is due to an increase of $8,500 over 2013 Actual as a result of an increase in Revenues from Merchandise and Jobbing (4325) as well as an increase in Interest and Dividend Income (4405)

Table 40 - Variance Analysis of Other Operating Revenues

2014 – 2015

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2014	**2015**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$9,142	-$7,995	$1,147	12.55%
4225	**4225-Late Payment Charges**	-$7,546	-$6,480	$1,066	14.12%
4082	4082-Retail Services Revenues	-$2,763	-$2,706	$57	2.07%
4086	4086-SSS Administration Revenue	-$4,935	$0	$4,935	100.00%
4210	4210-Rent from Electric Property	-$13,519	-$13,519	$0	0.00%
4305	4305-Regulatory Debits	$20,042	$45,468	$25,426	126.86%
4325	4325-Revenues from Merchandise Jobbing, Etc.	-$6,121	-$825	$5,296	86.52%
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	$0	-$1,320	-$1,320	
4405	4405-Interest and Dividend Income	-$14,074	-$13,641	$433	3.08%

Total	-$38,058	-$38,058	$0	0%
Specific Service Charges	-$9,142	-$7,995	$1,147	12.55%
Late Payment Charges	-$7,546	-$6,480	$1,066	14.12%
Other Distribution/Operating Revenues	-$21,216	-$16,225	$4,992	23.53%
Other Income or Deductions	-$154	$29,681	$29,835	19378.56%
Total	-$38,058	-$1,018	$37,040	97.32%

2014 Actual over 2015 Actual - The Other Revenues variance reflects a decrease of $37,040. This The decrease in for the most part due to a one time debit of $25,426 to account 4305-Regulatory Debits and an decrease in SSS Admin Charges (4086) With respect to 4086, there was an error in accounting where the previous manager booked the SSS admin charges to 4080 instead of 4086.

Table 41 - Variance Analysis of Other Operating Revenues

2015 – 2016

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2015	**2016**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$7,995	-$5,580	$2,415	30.21%
4225	**4225-Late Payment Charges**	-$6,480	-$5,782	$698	10.77%
4082	4082-Retail Services Revenues	-$2,706	-$3,090	-$384	14.19%
4210	4210-Rent from Electric Property	-$13,519	-$13,519	$0	0.00%
4305	4305-Regulatory Debits	$45,468	$0	-$45,468	100.00%
4325	4325-Revenues from Merchandise Jobbing, Etc.	-$825	-$18,559	-$17,733	2148.49%
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	-$1,320	-$1,496	-$176	13.35%
4380	4380-Expenses of Non-Utility Operations	$0	$1,152	$1,152	
4405	4405-Interest and Dividend Income	-$13,641	-$3,650	$9,992	73.25%
	Total	-$1,018	-$38,058	-$37,040	3638%
	Specific Service Charges	-$7,995	-$5,580	$2,415	30.21%
	Late Payment Charges	-$6,480	-$5,782	$698	10.77%
	Other Distribution/Operating Revenues	-$16,225	-$16,609	-$384	2.37%
	Other Income or Deductions	$29,681	-$22,552	-$52,233	175.98%
	Total	-$1,018	-$50,523	-$49,505	4862.08%

2015 Actual over 2016 Actual - The Other Revenues variance reflects an increase of $49,505. The increase is due to an increase of $17,733 in Revenues from Merchandise and Jobbing (4325) as well as a decrease in Interest and Dividend Income (4405) of $45,468. The decrease in 4305 Regulatory Debits is a normalizing of revenues following the previous years increase.

Table 42 - Variance Analysis of Other Operating Revenues

2016 – 2017

	Reporting Basis	CGAAP	CBAAP	Var Analysis	Var Analysis
		2016	**2017**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$5,580	-$9,731	-$4,151	74.39%
4225	**4225-Late Payment Charges**	-$5,782	-$5,682	$100	1.72%
4082	4082-Retail Services Revenues	-$3,090	-$2,749	$341	11.02%
4210	4210-Rent from Electric Property	-$13,519	-$13,609	-$89	0.66%
4325	4325-Revenues from Merchandise Jobbing, Etc.	-$18,559	-$15	$18,544	99.92%
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	-$1,496	$0	$1,496	100.00%
4375	4375-Revenues from Non-Utility Operations	$0	-$16,952	-$16,952	
4380	4380-Expenses of Non-Utility Operations	$1,152	$18,360	-$17,208	
4405	4405-Interest and Dividend Income	-$3,650	-$9,313	-$5,664	155.19%
	Total	-$50,523	-$1,018	$49,505	98%
	Specific Service Charges	-$5,580	-$9,731	-$4,151	74.39%
	Late Payment Charges	-$5,782	-$5,682	$100	1.72%
	Other Distribution/Operating Revenues	-$16,609	-$16,357	$251	1.51%
	Other Income or Deductions	-$22,552	-$7,920	$14,632	64.88%
	Total	-$50,523	-$39,691	$10,832	21.44%

The Other Revenues variance for 2016 over 2017 reflects a marginal decrease of $10,832 therefore no explanation is required. CPUC notes that the net effect of Revenues and Expenses for non-utility Operations is a loss of 1,408.

Table 43 - Variance Analysis of Other Operating Revenues

2017 – 2018

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2017	**2018**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$9,731	-$6,085	$3,646	37.47%
4225	**4225-Late Payment Charges**	-$5,682	-$5,250	$432	7.61%
4082	4082-Retail Services Revenues	-$2,749	-$2,580	$169	6.15%
4210	4210-Rent from Electric Property	-$13,609	-$13,450	$159	1.16%
4325	4325-Revenues from Merchandise Jobbing, Etc.	-$15	$0	$15	100.00%
4355	4355-Gain on Disposition of Utility and Other Property	$0	-$50,000	-$50,000	
4375	4375-Sub-account Generation Facility Revenues	-$16,952	-$38,700	-$21,748	128.29%
4380	4380-Expenses of Non-Utility Operations	$18,360	$25,155	$6,795	37.01%
4405	4405-Interest and Dividend Income	-$9,313	-$3,000	$6,313	67.79%
	Total	-$39,691	-$50,523	-$10,832	27%
	Specific Service Charges	-$9,731	-$6,085	$3,646	37.47%

Late Payment Charges	-$5,682	-$5,250	$432	7.61%
Other Distribution/Operating Revenues	-$16,357	-$16,030	$327	2.00%
Other Income or Deductions	-$7,920	-$66,545	-$58,625	740.21%
Total	-$39,691	-$93,910	-$54,219	136.60%

The Other Revenues variance for 2018 over 2017 reflects an increase of 54,219. The increase is for the most part due to a one-time revenues from the sales of a used boom truck which as replaced in 2018.

Table 44 - Variance Analysis of Other Operating Revenues

2018 – 2019

	Reporting Basis	CGAAP	CGAAP	Var Analysis	Var Analysis
		2018	**2019**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$6,085	-$6,207	-$122	2.00%
4225	**4225-Late Payment Charges**	-$5,250	-$5,355	-$105	2.00%
4082	4082-Retail Services Revenues	-$2,580	-$2,632	-$52	2.02%
4210	4210-Rent from Electric Property	-$13,450	-$13,719	-$269	2.00%
4355	4355-Gain on Disposition of Utility and Other Property	-$50,000	$0	$50,000	100.00%
4375	4375-Sub-account Generation Facility Revenues	-$38,700	-$39,474	-$774	2.00%
4380	4380-Expenses of Non-Utility Operations	$25,155	$25,658	$503	2.00%
4405	4405-Interest and Dividend Income	-$3,000	-$9,000	-$6,000	200.00%
	Total	-$93,910	-$50,729	$43,181	46%
	Specific Service Charges	-$6,085	-$6,207	-$122	2.00%
	Late Payment Charges	-$5,250	-$5,355	-$105	2.00%
	Other Distribution/Operating Revenues	-$16,030	-$16,351	-$321	2.00%
	Other Income or Deductions	-$66,545	-$22,816	$43,729	65.71%
	Total	-$93,910	-$50,729	$43,181	45.98%

The Other Revenues variance for 2019 over 2018 reflects an decrease of $43,181. The decrease is as a result of the one-time sale of the boom truck in 2018. Other variances are deemed marginal.

3.4.3 PROPOSED SPECIFIC SERVICE CHARGES[17]

CPUC is not proposing any changes to the current specific services charges including MicroFit service charge.

No classes or discrete customer groups that may be materially impacted by changes to other rates and charges.[18]

3.4.4 REVENUE FROM AFFILIATE TRANSACTIONS, SHARED SERVICES, CORPORATE COST ALLOCATION.

CPUC no longer has any affiliates and as such does not have any affiliate transactions, shared services and corporate cost allocation that will be affecting its 2019 rates.[19] Historical transactions are discussed in Exhibit 4 of this application.

[17] MFR – Any new proposed specific service charges
[18] MFR - Distributors must identify any discrete customer groups that may be materially impacted by changes to other rates and charges
[19] MFR - Revenue from affiliate transactions, shared services, corporate cost allocation

APPENDICES

Appendix 2-IB

File Number:	EB-2018-0087
Exhibit:	
Tab:	
Schedule:	
Page:	
Date:	

Appendix 2-IB
Customer, Connections, Load Forecast and Revenues Data and Analysis

This sheet is to be filled in accordance with the instructions documented in section 2.3.2 of Chapter 2 of the Filing Requirements for Distribution Rate Applications, in terms of one set of tables per customer class.

Color coding for Cells: Data input | Drop-down List | No data entry required | Blank or calculated value

Distribution System (Total)

	Calendar Year (for 2019 Cost of Service		Consumption (kWh) [3]				
				Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2013*		Actual	29749924	28385911.93		
Historical	*2014*		Actual	29940176	28742149.88		
Historical	*2015*		Actual	27625506	27709304.84		
Historical	*2016*		Actual	26137724	27325090.99		
Historical	*2017*		Actual	26216509	27595220.57		
Bridge Year	*2018*		Forecast		28410135.78		
Test Year	*2019*		Forecast		28232404.06		

Variance Analysis	Year	Year-over-year		Versus Board-approved
	2013			
	2014	0.6%	1.3%	
	2015	-7.7%	-3.6%	
	2016	-5.4%	-1.4%	
	2017	0.3%	1.0%	
	2018		3.0%	
	2019		-0.6%	
	Geometric Mean	-4.1%	-0.1%	

Customer Class Analysis (one for each Customer Class, excluding MicroFIT and Standby)

1 **Customer Class:** Residential Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kWh

	Calendar Year (for 2019 Cost of Service	Customers			Consumption (kWh) [3]				Consumption (kWh) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2013*	Actual	1,062		Actual	15071570	14380549.63		Actual	14198.3702	13547.3854	
Historical	*2014*	Actual	1,063		Actual	15225943	14616692.16		Actual	14330.2993	13756.8867	
Historical	*2015*	Actual	1,059		Actual	13727288	13768928.17		Actual	12968.6235	13007.9624	
Historical	*2016*	Actual	1,059		Actual	12612066	13184998.47		Actual	11915.0364	12456.3046	
Historical	*2017*	Actual	1,054		Actual	12775802	13674798.42		Actual	12121.2543	12974.192	
Bridge Year	*2018*	Forecast	1,043		Forecast		14078629.26		Forecast	0	13491.889	
Test Year	*2019*	Forecast	1,033		Forecast		13990554.39		Forecast	0	13542.5457	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	0.1%		*2014*	1.0%	1.6%		*2014*	0.9%	1.5%	
	2015	-0.4%		*2015*	-9.8%	-5.8%		*2015*	-9.5%	-5.4%	
	2016	0.0%		*2016*	-8.1%	-4.2%		*2016*	-8.1%	-4.2%	
	2017	-0.4%		*2017*	1.3%	3.7%		*2017*	1.7%	4.2%	
	2018	-1.0%		*2018*		3.0%		*2018*		4.0%	
	2019	-1.0%		*2019*		-0.6%		*2019*		0.4%	
	Geometric Mean	-0.5%		Geometric Mean	-5.4%	-0.5%		Geometric Mean	-5.1%	0.0%	

	Calendar Year (for 2019 Cost of Service	Revenues		
Historical	*2013*	Actual	$ 504,061	
Historical	*2014*	Actual	$ 513,185	
Historical	*2015*	Actual	$ 497,538	
Historical	*2016*	Actual	$ 481,925	
Historical	*2017*	Actual	$ 482,919	
Bridge Year (Foreca	*2018*	Forecast	$ 496,893	
Test Year (Forecast)	*2019*	Forecast	$ 630,628	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014	1.8%	
	2015	-3.0%	
	2016	-3.1%	
	2017	0.2%	
	2018	2.9%	
	2019	26.9%	
	Geometric Mean	4.6%	

2 Customer Class: GS < 50 kW Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kWh

	Calendar Year (for 2019 Cost of Service	Customers			Consumption (kWh) [3]				Consumption (kWh) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2013*	Actual	153		Actual	5337892	5093153.59		Actual	34888.183	33288.5856	
Historical	*2014*	Actual	152		Actual	5251375	5041246.495		Actual	34662.5413	33275.5544	
Historical	*2015*	Actual	152		Actual	4907587	4922473.608		Actual	32286.7566	32384.6948	
Historical	*2016*	Actual	157		Actual	4617295	4827046.379		Actual	29503.4824	30843.7468	
Historical	*2017*	Actual	152		Actual	4702580	4949886.056		Actual	30938.0263	32565.0398	
Bridge Year	*2018*	Forecast	150		Forecast		5010784.666		Forecast	0	33356.314	
Test Year	*2019*	Forecast	148		Forecast		4979437.565		Forecast	0	33540.4208	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	-1.0%		*2014*	-1.6%	-1.0%		*2014*	-0.6%	0.0%	
	2015	0.3%		*2015*	-6.5%	-2.4%		*2015*	-6.9%	-2.7%	
	2016	3.0%		*2016*	-5.9%	-1.9%		*2016*	-8.6%	-4.8%	
	2017	-2.9%		*2017*	1.8%	2.5%		*2017*	4.9%	5.6%	
	2018	-1.2%		*2018*		1.2%		*2018*		2.4%	
	2019	-1.2%		*2019*		-0.6%		*2019*		0.6%	
	Geometric Mean	-0.6%		Geometric Mean	-4.1%	-0.5%		Geometric Mean	-3.9%	0.2%	

	Calendar Year (for 2019 Cost of Service	Revenues		
Historical	*2013*	Actual	$ 156,479	
Historical	*2014*	Actual	$ 156,179	
Historical	*2015*	Actual	$ 152,014	
Historical	*2016*	Actual	$ 148,717	
Historical	*2017*	Actual	$ 148,344	
Bridge Year (Foreca	*2018*	Forecast	$ 152,548	
Test Year (Forecast)	*2019*	Forecast	$ 192,398	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014	-0.2%	
	2015	-2.7%	
	2016	-2.2%	
	2017	-0.3%	
	2018	2.8%	
	2019	26.1%	
	Geometric Mean	4.2%	

3 **Customer Class:** GS > 50 kW Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kW

	Calendar Year (for 2019 Cost of Service	Customers		Consumption (kWh) [3]			Consumption (kWh) per Customer		
					Actual (Weather actual)	Weather-normalized		Actual (Weather actual)	Weather-normalized
Historical	*2013*	Actual	14	Actual	7164613	6836120.78	Actual	511758.071	488294.341
Historical	*2014*	Actual	10	Actual	7157299	6870906.857	Actual	753399.895	723253.353
Historical	*2015*	Actual	11	Actual	6867603	6888435.095	Actual	624327.545	626221.372
Historical	*2016*	Actual	12	Actual	7048334	7368520.988	Actual	587361.167	614043.416
Historical	*2017*	Actual	15	Actual	6797046	7154498.853	Actual	453136.4	476966.59
Bridge Year	*2018*	Forecast	15	Forecast		7234472.665	Forecast	0	482298.178
Test Year	*2019*	Forecast	15	Forecast		7189214.336	Forecast	0	479280.956

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	-32.1%		*2014*	-0.1%	0.5%		*2014*	47.2%	48.1%	
	2015	15.8%		*2015*	-4.0%	0.3%		*2015*	-17.1%	-13.4%	
	2016	9.1%		*2016*	2.6%	7.0%		*2016*	-5.9%	-1.9%	
	2017	25.0%		*2017*	-3.6%	-2.9%		*2017*	-22.9%	-22.3%	
	2018	0.0%		*2018*		1.1%		*2018*		1.1%	
	2019	0.0%		*2019*		-0.6%		*2019*		-0.6%	
	Geometric Mean	1.4%		Geometric Mean	-1.7%	1.0%		Geometric Mean	-4.0%	-0.4%	

	Calendar Year (for 2019 Cost of Service	Revenues		Demand (kW)			Demand (kW) per Customer		
					Actual (Weather actual)	Weather-normalized		Actual (Weather actual)	Weather-normalized
Historical	*2013*	Actual	$ 66,967	Actual	18431	18431	Actual	0.27522511	0.27522511
Historical	*2014*	Actual	$ 72,693	Actual	20149	20149	Actual	0.27717937	0.27717937
Historical	*2015*	Actual	$ 65,834	Actual	18062	18062	Actual	0.27435672	0.27435672
Historical	*2016*	Actual	$ 68,331	Actual	18740	18740	Actual	0.27425327	0.27425327
Historical	*2017*	Actual	$ 64,054	Actual	17522	17522	Actual	0.27355044	0.27355044
Bridge Year (Foreca	*2018*	Forecast	$ 68,985	Forecast		19002	Forecast	0	0.27545393
Test Year (Forecast)	*2019*	Forecast	$ 133,012	Forecast		18883	Forecast	0	0.14196699

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	8.6%		*2014*	9.3%	9.3%		*2014*	0.7%	0.7%	
	2015	-9.4%		*2015*	-10.4%	-10.4%		*2015*	-1.0%	-1.0%	
	2016	3.8%		*2016*	3.8%	3.8%		*2016*	0.0%	0.0%	
	2017	-6.3%		*2017*	-6.5%	-6.5%		*2017*	-0.3%	-0.3%	
	2018	7.7%		*2018*		8.4%		*2018*		0.7%	
	2019	92.8%		*2019*		-0.6%		*2019*		-48.5%	
	Geometric Mean	14.7%		Geometric Mean	-1.7%	0.5%		Geometric Mean	-0.2%	-12.4%	

4 **Customer Class:** Streetlighting Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kW

	Calendar Year (for 2019 Cost of Service	Customers		Consumption (kWh) [3] Actual (Weather actual)	Consumption (kWh) Weather-normalized	Consumption (kWh) Weather-normalized	Consumption (kWh) per Customer Actual (Weather actual)	Consumption (kWh) per Customer Weather-normalized	Consumption (kWh) per Customer Weather-normalized
Historical	*2013*	Actual	328	Actual 274269	274269		Actual 836.185976	836.185976	
Historical	*2014*	Actual	328	Actual 274528	274528		Actual 836.97561	836.97561	
Historical	*2015*	Actual	328	Actual 274259	274259		Actual 836.155488	836.155488	
Historical	*2016*	Actual	328	Actual 274259	274259		Actual 836.155488	836.155488	
Historical	*2017*	Actual	328	Actual 274259	274259		Actual 836.155488	836.155488	
Bridge Year	*2018*	Forecast	328	Forecast	283967.2		Forecast 0	865.753659	
Test Year	*2019*	Forecast	328	Forecast	283967.2		Forecast 0	865.753659	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	0.0%		*2014*	0.1%	0.1%		*2014*	0.1%	0.1%	
	2015	0.0%		*2015*	-0.1%	-0.1%		*2015*	-0.1%	-0.1%	
	2016	0.0%		*2016*	0.0%	0.0%		*2016*	0.0%	0.0%	
	2017	0.0%		*2017*	0.0%	0.0%		*2017*	0.0%	0.0%	
	2018	0.0%		*2018*		3.5%		*2018*		3.5%	
	2019	0.0%		*2019*		0.0%		*2019*		0.0%	
	Geometric Mean	0.0%		Geometric Mean	0.0%	0.7%		Geometric Mean	0.0%	0.7%	

	Calendar Year (for 2019 Cost of Service	Revenues		Demand (kW) Actual (Weather actual)	Demand (kW) Weather-normalized	Demand (kW) Weather-normalized	Demand (kW) per Customer Actual (Weather actual)	Demand (kW) per Customer Weather-normalized	Demand (kW) per Customer Weather-normalized
Historical	*2013*	Actual	$ 86,134	Actual 768	768		Actual 0.00891634	0.00891634	
Historical	*2014*	Actual	$ 95,901	Actual 768	768		Actual 0.00800826	0.00800826	
Historical	*2015*	Actual	$ 97,004	Actual 768	768		Actual 0.0079172	0.0079172	
Historical	*2016*	Actual	$ 97,004	Actual 768	768		Actual 0.0079172	0.0079172	
Historical	*2017*	Actual	$ 97,004	Actual 768	768		Actual 0.0079172	0.0079172	
Bridge Year (Foreca	*2018*	Forecast	$ 97,128	Forecast	774		Forecast 0	0.00796887	
Test Year (Forecast)	*2019*	Forecast	$ 42,820	Forecast	774		Forecast 0	0.01807567	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	11.3%		*2014*	0.0%	0.0%		*2014*	-10.2%	-10.2%	
	2015	1.2%		*2015*	0.0%	0.0%		*2015*	-1.1%	-1.1%	
	2016	0.0%		*2016*	0.0%	0.0%		*2016*	0.0%	0.0%	
	2017	0.0%		*2017*	0.0%	0.0%		*2017*	0.0%	0.0%	
	2018	0.1%		*2018*		0.8%		*2018*		0.7%	
	2019	-55.9%		*2019*		0.0%		*2019*		126.8%	
	Geometric Mean	-13.0%		Geometric Mean	0.0%	0.2%		Geometric Mean	-3.9%	15.2%	

5 **Customer Class:** Unmetered Scattered Load Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kWh

	Calendar Year (for 2019 Cost of Service	Customers			Consumption (kWh) [3]				Consumption (kWh) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2013*	Actual	4		Actual	5058	5058		Actual	1264.5	1264.5	
Historical	*2014*	Actual	4		Actual	4068	4068		Actual	1017	1017	
Historical	*2015*	Actual	4		Actual	2892	2892		Actual	723	723	
Historical	*2016*	Actual	4		Actual	2892	2892		Actual	723	723	
Historical	*2017*	Actual	4		Actual	2892	2892		Actual	723	723	
Bridge Year	*2018*	Forecast	4		Forecast		5232		Forecast	0	1307.975	
Test Year	*2019*	Forecast	4		Forecast		5232		Forecast	0	1307.975	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	0.0%		*2014*	-19.6%	-19.6%		*2014*	-19.6%	-19.6%	
	2015	0.0%		*2015*	-28.9%	-28.9%		*2015*	-28.9%	-28.9%	
	2016	0.0%		*2016*	0.0%	0.0%		*2016*	0.0%	0.0%	
	2017	0.0%		*2017*	0.0%	0.0%		*2017*	0.0%	0.0%	
	2018	0.0%		*2018*		80.9%		*2018*		80.9%	
	2019	0.0%		*2019*		0.0%		*2019*		0.0%	
	Geometric Mean	0.0%		Geometric Mean	-17.0%	0.7%		Geometric Mean	-17.0%	0.7%	

	Calendar Year (for 2019 Cost of Service	Revenues		
Historical	*2013*	Actual	$	1,293
Historical	*2014*	Actual	$	1,321
Historical	*2015*	Actual	$	1,297
Historical	*2016*	Actual	$	1,297
Historical	*2017*	Actual	$	1,297
Bridge Year (Foreca	*2018*	Forecast	$	1,375
Test Year (Forecast)	*2019*	Forecast	$	1,165

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014	2.2%	
	2015	-1.8%	
	2016	0.0%	
	2017	0.0%	
	2018	6.0%	
	2019	-15.3%	
	Geometric Mean	-2.1%	

6 **Customer Class:** Sentinel Is the customer class billed on consumption (kWh) or demand (kW or kVA)? kW

	Calendar Year (for 2019 Cost of Service	Customers			Consumption (kWh) [3]				Consumption (kWh) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2013*	Actual	23		Actual	26244	26244		Actual	1141.04348	1141.04348	
Historical	*2014*	Actual	23		Actual	26857	26857		Actual	1167.69565	1167.69565	
Historical	*2015*	Actual	23		Actual	23735	23735		Actual	1031.95652	1031.95652	
Historical	*2016*	Actual	23		Actual	19993	19993		Actual	869.26087	869.26087	
Historical	*2017*	Actual	23		Actual	20629	20629		Actual	896.913043	896.913043	
Bridge Year	*2018*	Forecast	23		Forecast		24760		Forecast	0	1076.53478	
Test Year	*2019*	Forecast	23		Forecast		24760		Forecast	0	1076.53478	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			*2013*				*2013*			
	2014	0.0%		*2014*	2.3%	2.3%		*2014*	2.3%	2.3%	
	2015	0.0%		*2015*	-11.6%	-11.6%		*2015*	-11.6%	-11.6%	
	2016	0.0%		*2016*	-15.8%	-15.8%		*2016*	-15.8%	-15.8%	

	2017	0.0%		2017	3.2%	3.2%		2017	3.2%	3.2%		
	2018	0.0%		2018		20.0%		2018		20.0%		
	2019	0.0%		2019		0.0%		2019		0.0%		
	Geometric Mean	0.0%		Geometric Mean	-7.7%	-1.2%		Geometric Mean	-7.7%	-1.2%		

	Calendar Year (for 2019 Cost of Service	Revenues			Demand (kW)				Demand (kW) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	2013	Actual	$ 3,462		Actual	65	65		Actual	0.01877527	0.01877527	
Historical	2014	Actual	$ 4,787		Actual	75	75		Actual	0.01566743	0.01566743	
Historical	2015	Actual	$ 5,099		Actual	63	63		Actual	0.01235536	0.01235536	
Historical	2016	Actual	$ 5,054		Actual	60	60		Actual	0.01187178	0.01187178	
Historical	2017	Actual	$ 5,084		Actual	62	62		Actual	0.01219512	0.01219512	
Bridge Year (Foreca	2018	Forecast	$ 5,129		Forecast		65		Forecast	0	0.01267304	
Test Year (Forecast)	2019	Forecast	$ 4,794		Forecast		65		Forecast	0	0.01355861	

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved	Year	Year-over-year		Test Year Versus Board-approved
	2013			2013				2013			
	2014	[illegible]		2014	15.4%	15.4%		2014	[illegible]	[illegible]	
	2015	6.5%		2015	-16.0%	-16.0%		2015	-21.1%	-21.1%	
	2016	-0.9%		2016	-4.8%	-4.8%		2016	-3.9%	-3.9%	
	2017	0.6%		2017	3.3%	3.3%		2017	2.7%	2.7%	
	2018	0.9%		2018		4.8%		2018		3.9%	
	2019	-6.5%		2019		0.0%		2019		7.0%	
	Geometric Mean	6.7%		Geometric Mean	-1.6%	0.0%		Geometric Mean	-13.4%	-6.3%	

7 **Customer Class:** Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

	Calendar Year (for 2019 Cost of Service	Customers			Consumption (kWh) [3]				Consumption (kWh) per Customer			
						Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	2013	Actual			Actual				Actual			
Historical	2014	Actual			Actual				Actual			
Historical	2015	Actual			Actual				Actual			
Historical	2016	Actual			Actual				Actual			
Historical	2017	Actual			Actual				Actual			
Bridge Year	2018	Forecast			Forecast				Forecast			
Test Year	2019	Forecast			Forecast				Forecast			

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year	Test Year Versus Board-approved	Year	Year-over-year	Test Year Versus Board-approved
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	2019			2019			2019		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2019 Cost of Service	Revenues				Actual (Weather actual)	Weather-normalized	Weather-normalized	Demand () per Customer	Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	2013	Actual			Actual				Actual				
Historical	2014	Actual			Actual				Actual				
Historical	2015	Actual			Actual				Actual				
Historical	2016	Actual			Actual				Actual				
Historical	2017	Actual			Actual				Actual				
Bridge Year (Foreca	2018	Forecast			Forecast				Forecast				
Test Year (Forecast)	2019	Forecast			Forecast				Forecast				

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014		
	2015		
	2016		
	2017		
	2018		
	2019		
	Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

8 **Customer Class:** Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

	Calendar Year (for 2019 Cost of Service	Customers		Consumption (kWh) [3]			Consumption (kWh) per Customer			
					Actual (Weather actual)	Weather-normalized			Actual (Weather actual)	Weather-normalized	
Historical	2013	Actual		Actual			Actual				
Historical	2014	Actual		Actual			Actual				
Historical	2015	Actual		Actual			Actual				
Historical	2016	Actual		Actual			Actual				
Historical	2017	Actual		Actual			Actual				
Bridge Year	2018	Forecast		Forecast			Forecast				
Test Year	2019	Forecast		Forecast			Forecast				

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014		
	2015		
	2016		
	2017		
	2018		
	2019		
	Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

	Calendar Year (for 2019 Cost of Service	Revenues			Actual (Weather actual)	Weather-normalized	Weather-normalized	Demand () per Customer				
Historical	2013	Actual		Actual			Actual					
Historical	2014	Actual		Actual			Actual					
Historical	2015	Actual		Actual			Actual					
Historical	2016	Actual		Actual			Actual					
Historical	2017	Actual		Actual			Actual					
Bridge Year (Foreca	2018	Forecast		Forecast			Forecast					
Test Year (Forecast)	2019	Forecast		Forecast			Forecast					

Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2013		
	2014		
	2015		
	2016		
	2017		
	2018		
	2019		
	Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

Year	Year-over-year	Test Year Versus Board-approved
2013		
2014		
2015		
2016		
2017		
2018		
2019		
Geometric Mean		

9 **Customer Class:** Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

	Calendar Year (for 2019 Cost of Service	Customers		Consumption (kWh) [3]			Consumption (kWh) per Customer			
					Actual (Weather actual)	Weather-normalized			Actual (Weather actual)	Weather-normalized	
Historical	2013	Actual		Actual			Actual				
Historical	2014	Actual		Actual			Actual				
Historical	2015	Actual		Actual			Actual				

Historical	*2016*	Actual			Actual			Actual			
Historical	*2017*	Actual			Actual			Actual			
Bridge Year	*2018*	Forecast			Forecast			Forecast			
Test Year	*2019*	Forecast			Forecast			Forecast			

Variance Analysis	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**
	2013			*2013*			*2013*		
	2014			*2014*			*2014*		
	2015			*2015*			*2015*		
	2016			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year	**Revenues**					**Demand () per Customer**				
	(for 2019 Cost of Service							**Actual (Weather actual)**	**Weather-normalized**		**Weather-normalized**
Historical	*2013*	Actual			Actual		Actual				
Historical	*2014*	Actual			Actual		Actual				
Historical	*2015*	Actual			Actual		Actual				
Historical	*2016*	Actual			Actual		Actual				
Historical	*2017*	Actual			Actual		Actual				
Bridge Year (Foreca	*2018*	Forecast			Forecast		Forecast				
Test Year (Forecast)	*2019*	Forecast			Forecast		Forecast				

Variance Analysis	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**
	2013			*2013*			*2013*		
	2014			*2014*			*2014*		
	2015			*2015*			*2015*		
	2016			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	Geometric Mean			Geometric Mean			Geometric Mean		

10 **Customer Class:** Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

	Calendar Year	**Customers**			**Consumption (kWh) [3]**			**Consumption (kWh) per Customer**			
	(for 2019 Cost of Service					**Actual (Weather actual)**	**Weather-normalized**			**Weather-normalized**	
Historical	*2013*	Actual			Actual			Actual			
Historical	*2014*	Actual			Actual			Actual			
Historical	*2015*	Actual			Actual			Actual			
Historical	*2016*	Actual			Actual			Actual			
Historical	*2017*	Actual			Actual			Actual			
Bridge Year	*2018*	Forecast			Forecast			Forecast			
Test Year	*2019*	Forecast			Forecast			Forecast			

Variance Analysis	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**	**Year**	**Year-over-year**	**Test Year Versus Board-approved**
	2013			*2013*			*2013*		
	2014			*2014*			*2014*		
	2015			*2015*			*2015*		
	2016			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year	**Revenues**					**Demand () per Customer**

	(for 2019 Cost of Service				
Historical	*2013*	Actual			
Historical	*2014*	Actual			
Historical	*2015*	Actual			
Historical	*2016*	Actual			
Historical	*2017*	Actual			
Bridge Year (Foreca	*2018*	Forecast			
Test Year (Forecast)	*2019*	Forecast			

	Actual (Weather actual)	Weather-normalized		Weather-normalized
Actual				
Actual				
Actual				
Actual				
Actual				
Forecast				
Forecast				

	Actual (Weather actual)	Weather-normalized		Weather-normalized
Actual				
Actual				
Actual				
Actual				
Actual				
Forecast				
Forecast				

Variance Analysis	Year		Year-over-year		Test Year Versus Board-approved
	2013				
	2014				
	2015				
	2016				
	2017				
	2018				
	2019				
	Geometric Mean				

Year	Year-over-year		Test Year Versus Board-approved
2013			
2014			
2015			
2016			
2017			
2018			
2019			
Geometric Mean			

Year	Year-over-year		Test Year Versus Board-approved
2013			
2014			
2015			
2016			
2017			
2018			
2019			
Geometric Mean			

Note: If there are more than ten (10) customer classes, please contact OEB Staff to add tables for additional customer classes.