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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 seven (7) customer classes: Residential, General Service less than 50 kW, General Service 50-2999 kW, General Service 3000-4,999 kW, Unmetered Scattered Load (USL), Sentinel and Street Lighting. CWH does not anticipate any significant changes in its customer classes.

This exhibit also describes CWH'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) Accuracy of Load Forecast and Variance Analysis, and
- 3) Other Revenues

3.1.2 OVERVIEW OF REVENUE FORECAST

Table 1 below shows estimated revenues from current distribution charges for 2017. Distribution Revenues are derived through 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. CWH's 2018 forecasted revenues recovered through its currently approved distribution rates are projected at \$3,241,499.71 (exclusive of all rate riders). The revenues at proposed distribution rates are presented at Exhibit 6 and Exhibit 8.

1

Table 1: 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	Transf. Allowance Rate	Transform. Allowance kW's	Transform. Allowance \$'s	Net Variable Revenue
Residential	\$0.0074	kWh	44,716,576	\$330,902.66			\$0.00	\$330,902.66
General Service < 50 kW	\$0.0192	kWh	20,596,746	\$395,457.53			\$0.00	\$395,457.53
General Service 50 to 2999 kW	\$3.7113	kW	160,292	\$594,892.98	-0.60	91184	-\$54,710.28	\$540,182.70
General Service 3000-4999 kW	\$2.9277	kW	43,538	\$127,465.84	-0.60	42794	-\$25,676.26	\$101,789.58
Unmetered Scattered Load	\$0.0109	kWh	548,560	\$5,979.30			\$0.00	\$5,979.30
Sentinel Lighting	\$12.5207	kW	106	\$1,330.36			\$0.00	\$1,330.36
Street Lighting	\$9.3109	kW	1,536	\$14,297.58			\$0.00	\$14,297.58
Total Variable Revenue			66,067,354	\$1,470,326.25		133977.57	-\$80,386.54	\$1,389,939.71

2017 Rates at 2018 Load

Test Year Projected Revenue from Proposed Fixed Charges (I think this should be Existing)								
Customer Class Name	Fixed Rate	Customers (Connections)	Fixed Charge Revenue	Variable Revenue	TOTAL	% Fixed Revenue	% Variable Revenue	% Total Revenue
Residential	\$21.0200	6,107	\$1,540,433.29	\$330,902.66	\$1,871,335.95	82.32%	17.68%	57.73%
General Service < 50 kW	\$18.4400	758	\$167,762.02	\$395,457.53	\$563,219.55	29.79%	70.21%	17.38%
General Service 50 to 2999 kW	\$170.1900	45	\$92,685.88	\$540,182.70	\$632,868.58	14.65%	85.35%	19.52%
General Service 3000-4999 kW	\$685.8600	1	\$8,230.32	\$101,789.58	\$110,019.90	7.48%	92.52%	3.39%
Unmetered Scattered Load	\$6.9200	13	\$1,079.52	\$5,979.30	\$7,058.82	15.29%	84.71%	0.22%
Sentinel Lighting	\$4.7300	29	\$1,618.82	\$1,330.36	\$2,949.18	54.89%	45.11%	0.09%
Street Lighting	\$1.9300	1,716	\$39,750.14	\$14,297.58	\$54,047.72	73.55%	26.45%	1.67%
Total Fixed Revenue		8,669	\$1,851,559.99	\$1,389,939.71	\$3,241,499.71			

2

3 A completed Appendix 2-IB Load Forecast Analysis is presented at Appendix A of this Exhibit

4 and also in Tab 10 of the RRWF.¹

5 CWH does not foresee or plan for any changes in its class composition.

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

3.1.3 PROPOSED LOAD FORECAST²

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 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 below presents the actual and forecast trends for customer/connection counts, kWh consumption and billed kW demand. The forecast trend is what CWH has based its proposed rates on.

² 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

1

Table 2: Customer and Volume Trend Table

Weather Adjusted Load Forecast Results								
	Year	2013	2014	2015	2016	2017	2018	2018 CDM Adjusted (kWh)
Residential	Cust/Conn	5,912	5,947	5,961	5,989	6,047	6,107	6,107
	kWh	45,782,444	45,855,881	45,491,150	45,102,914	45,507,125	45,602,321	44,716,576
	kW							-
								-
General Service < 50 kW	Cust/Conn	711	715	730	742	750	758	758
	kWh	20,038,055	20,436,483	21,573,934	23,368,517	20,960,879	21,004,726	20,596,746
	kW							-
								-
GS > 50 to 2999 kW	Cust/Conn	57	57	52	48	46	45	45
	kWh	59,755,907	54,630,396	52,904,630	50,766,218	60,321,817	60,448,004	59,273,907
	kW	165,373	154,260	148,977	145,124	163,126	163,467	160,292
								-
GS > 3000 to 4999 kW	Cust/Conn	1	1	1	1	1	1	1
	kWh	18,330,573	18,333,194	17,446,328	18,421,962	18,961,919	19,001,586	18,632,513
	kW	42,815	43,264	41,433	43,591	44,308	44,400	43,538
								-
USL	Cust/Conn	13	13	13	13	13	13	13
	kWh	548,400	563,396	563,839	562,067	559,426	559,426	548,560
								-
								-
Sentinel	Cust/Conn	31	31	31	29	29	29	29
	kWh	40,676	39,277	39,278	39,314	39,336	39,009	38,252
	kW	113	109	109	109	109	108	106
								-
Street Lighting	Cust/Conn	1,696	1,705	1,707	1,705	1,710	1,716	1,716
	kWh	1,151,811	1,141,797	976,129	566,049	568,009	569,977	558,906
	kW	3,174	3,151	2,727	1,555	1,561	1,566	1,536
Total	Cust/Conn	8,421	8,468	8,495	8,525	8,597	8,669	8,669
	kWh	145,647,867	141,000,425	138,995,288	138,827,041	146,918,511	147,225,049	144,365,460
	kW	211,476	200,783	193,246	190,380	209,104	209,542	205,472

2 Note: the customer numbers shown in the table above represent a yearly average.

3.1.4 LOAD FORECAST METHODOLOGY AND DETAIL³

CWH's load forecast is prepared in two phases. The first phase, a billed energy forecast by customer class for 2018 is developed using a total purchase (**Wholesale**) basis regression analysis. Then, in the second phase, usage associated with the known change in customers for 2018 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 due to the fact that NAC is generally seen as an alternative when sound historical data is not available.⁴

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 at Kitchener Waterloo Airport 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.

³ MFR - Explanation of weather normalization methodology

⁴ MFR - NAC Model - rationale for choice, data supporting NAC variables, description of accounting for CDM including licence conditions, discussion of weather normalization considerations

1 **Explanation of Multiple Regression Analysis**

2 Multiple regression can be utilized for forecasting purposes by analyzing how a number of
3 variables has affected a depended variable historically. From this, the relationship between these
4 variables and the depended variable can be expressed as:

5 $Y=A+B_1X_1+B_2X_2...+b_Nx_N + E$

6 Where:

7 Y = Predicted depended variable value

8 A = the value of Y when all X s are zero

9 X = the independent variable

10 B = the coefficients corresponding to the independent variables

11 n = the number of independent variables

12 E = an error term

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

22 $R\text{ Squared}=(B'X'Y - n\text{AVG}(Y)^2)/Y'Y-n\text{AVG}(Y)^2)$

23 Where:

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

1 R^2 = Squared

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

9 $F\text{-statistic} = (R\text{ Squared} / (k - 1)) / (1 - R\text{ Squared}) / (n - k)$

10 Where:

11 K = number of independent variable

12 n = number of observations

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

17 3.1.5 ECONOMIC OVERVIEW

18 The Township of Centre Wellington is a community in south-central Ontario. The community is
19 located approximately just over a one hour drive west of Toronto. CWH is within a 30-minute
20 drive to larger city centers such as Guelph, Waterloo and Kitchener. Centre Wellington is within
21 a 40-minute drive to access the major highway of 401. Traditionally a hub for agriculture and
22 manufacturing, Centre Wellington's thriving business community offers a diverse industrial base
23 whose growth sectors include manufacturing, agriculture, health services and creative industry.
24 With a young, well-educated and skilled workforce coupled with access to local and
25 international markets, there is plenty of opportunity to start, grow and achieve success in a wide
26 variety of businesses.

1 According to Centre Wellington's growth management plan the Township's population is
2 expected to top 52,000 (or double in size) by 2041. The majority of these new citizens will be
3 situated outside of CWH's territory but the influx of people and activity will increase business
4 both small and large that will affect CWH. A modest increase in residential and small commercial
5 and industrial connections are expected over the next 10 years until all existing undeveloped
6 land in CWH's service territory is developed.

7 The median household income for CWH is \$66,764 a year, higher than the national average of
8 \$54,089 a year. Note that those values were taken from the 2011 National Household Survey.

9 According to the same survey the median value of a dwelling in Centre Wellington was
10 \$300,625, which is slightly higher than the national average of \$280,552.

11 With respect to climate, CWH has a continental climate with cool winters, humid summers, and
12 short autumns and springs.

13 The first snowfalls of the year usually occur in mid-to-late November, but snow does not actually
14 cover the ground until late December. Before that, snow usually melts as soon as it hits the
15 ground.

16 In the spring, the snow usually starts melting in March, although occasional "warm breaks" with
17 temperatures as high as 10 °C (50 °F) usually occur once or twice in March.

18 In recent years, winters have gotten much warmer, so often in the winter freezing rain will occur.

19 In the summer, humidity is often common, especially in July. Although temperatures are usually
20 just under 30 °C (86 °F), with the humidity it can feel as hot as 35 °C.

- 1 Although the Municipality is growing at a fast pace, CWH's service territory is near saturation.
- 2 Generally the customer count in the service area has seen a nominal average increase over the
- 3 past years. ⁵

⁵ MFR - Explanation of causes, assumptions and adjustments for volume forecast. Economic assumptions and data sources for customer and load forecasts

3.1.6 OVERVIEW OF WHOLESALE PURCHASES

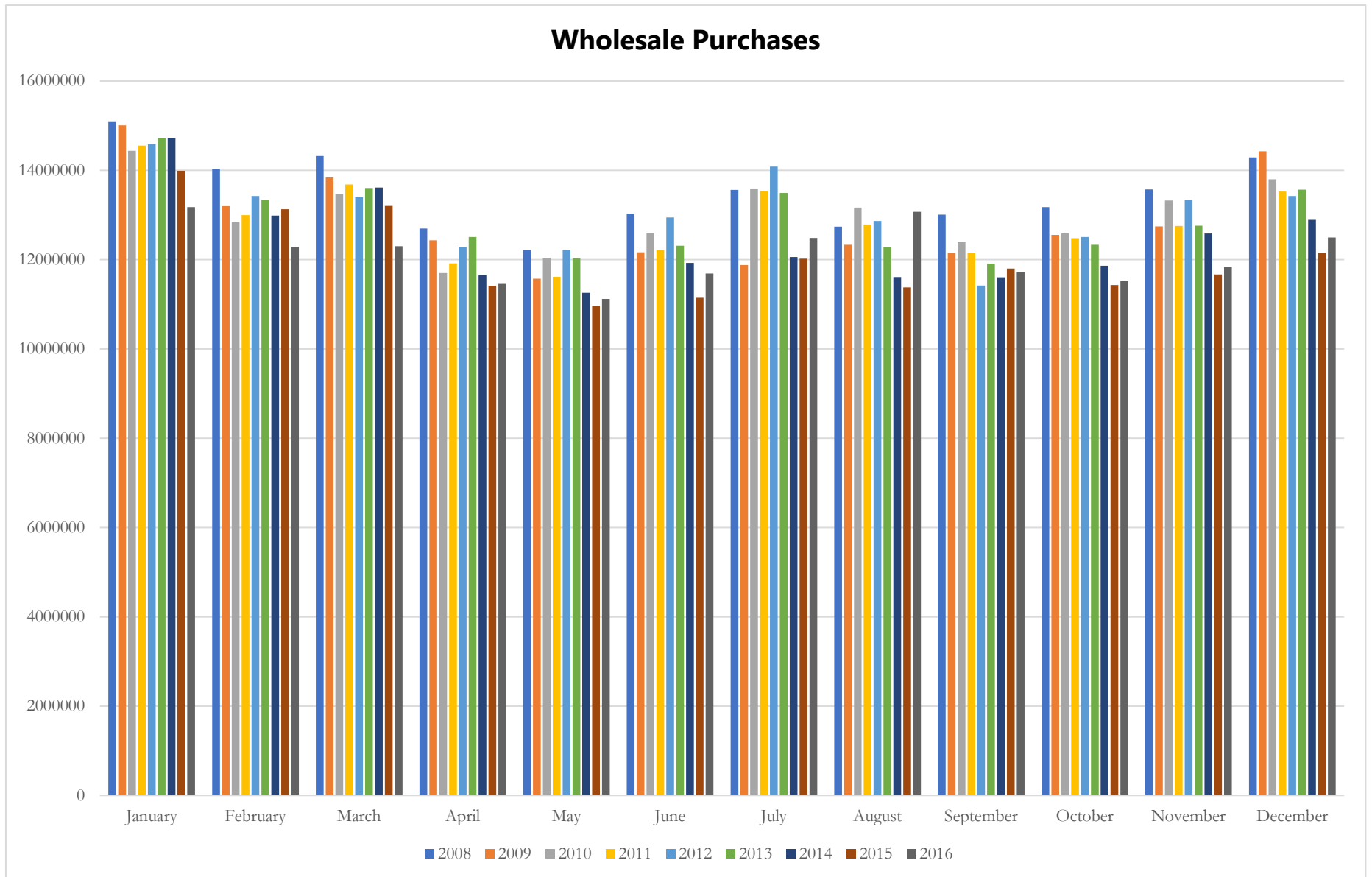
CWH purchases electricity from Hydro One, IESO and embedded generation.

The following table outlines the unadjusted monthly wholesale purchases:

Table 3: Wholesale Purchases 2007-2016 (include MicroFit and Fit)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	15082879	15005143	14435762	14553974	14585568	14721308	14721919	13987822	13174500
February	14030876	13197883	12846381	12993845	13424712	13334088	12985802	13128222	12284959
March	14321155	13841636	13466441	13683974	13395037	13602922	13614019	13204405	12300188
April	12696080	12430880	11695829	11913553	12290764	12506882	11649899	11410544	11470601
May	12213416	11568813	12039397	11611513	12220935	12028747	11257042	10958504	11103631
June	13029844	12161991	12588185	12209705	12944228	12310608	11926426	11142211	11688885
July	13562923	11877269	13590962	13541156	14085492	13491261	12057151	12015770	12484079
August	12738355	12331633	13165945	12787062	12866837	12274416	11607472	11373907	13068283
September	13005196	12154250	12387489	12157224	11419289	11911111	11603451	11797715	11716428
October	13176116	12554878	12591989	12479238	12504353	12332006	11860237	11391036	11516577
November	13573282	12741915	13323219	12750869	13335728	12760586	12586539	11637092	11833878
December	14286724	14424067	13800475	13532543	13427701	13521419	12848024	12174696	12494091
Total	161,716,845	154,290,359	155,932,074	154,214,656	156,500,644	154,795,354	148,717,979	144,221,924	145,136,098

The CWH's load has decreased by 10.25% from 2008 to 2016. The lowest year consumption was in 2015 while the largest consumption was in 2008. Since the number of customers has only moderately increased over the past 5 years, the assumption is that the effects of energy efficient changes have contributed to the modest decline.



3.1.7 OVERVIEW OF VARIABLES USED

In CWH's case, variation in monthly electricity consumption is influenced by five main factors – weather, both heating and cooling, which are by far the most dominant effects for most systems; employment factors (increases or decreases in economic activity leads to changes in employment); daylight hours; and lastly the number of days per month. Specifics relating to each variable used in the regression analysis are presented at the next section.

Heating and Cooling:

In order 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 CWH, the monthly HDD and CDD as reported at Kitchener Waterloo Airport were used.

CWH has adopted a 9-year average from 2008 to 2016 as the definition of weather normal. Our view is that a nine-year average, based on the most recent nine 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.

Table 4: HDD and CDD as reported at Utility Location

HDD	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	676.8	891.8	721.1	822	657.3	681.3	865.9	800.8	717.8
February	651.2	649.6	644.7	689.3	573	697.9	831.2	917.5	627.4
March	686.1	562.6	470.9	622.3	370.1	612	757	538	479.4
April	297.9	341.5	260.6	349.6	365.3	384.7	389.9	359	431.8
May	243.1	192.8	144.7	156.7	105.8	152.1	168.9	116.2	174.6
June	40.6	75.7	37.7	48.5	42.1	52.6	37.3	54.7	43.9
July	7.6	37.6	6.7	0.8	0	15.1	36.8	19.3	19.3
August	36.2	18.2	14.2	6.9	19.4	32.7	31.1	29.5	2.1
September	93.2	88.8	122.7	98.4	125.4	128.1	117.7	58.2	68.8
October	325.7	329.1	284.6	279.9	279.2	262.1	257.1	290.1	209.4
November	499.7	396.5	424.1	382.4	483.6	517.7	529.9	391.1	319.7
December	694	669.5	719.4	574.8	565.5	727.3	597.6	453	639.82

CDD	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-
April	0	3.2	0	0	0	0	0	0	0
May	0.7	2.3	21	13.2	18.2	19.6	9	29.8	18.4
June	53	26.2	32.6	21.6	61.2	31.3	44.3	15	24.1
July	75.8	14.5	106.6	129.7	128.2	86.5	38.8	57.7	101.2
August	29.5	57.3	85.3	60.1	59.1	42.1	28.5	47.9	100.7
September	12	5.5	23	19.7	16.4	20.5	11.40	45.3	16.1
October	-	-	-	-	-	-	-	-	1.9
November	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-

Employment Factor:

In order to measure the change in economic activity, a data series must be chosen which represents, as much as possible, regional economic activity. CWH used the monthly full-time employment levels for the Kitchener Waterloo region, as reported in Statistics Canada's Monthly Labour Force Survey (CANSIM).

The following table (Table 5) outlines the full-time employment levels for the CWH economic region which were tested and ultimately included in the regression analysis.

Table 5: Full-Time Employment Levels for the CWH Economic Region

	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	656.30	651.40	633.60	649.30	670.90	681.60	689.40	705.70	715.80
February	651.20	639.40	630.50	651.20	668.70	682.60	682.30	700.10	710.90
March	642.30	627.60	627.50	657.10	666.00	683.60	680.20	698.30	709.40
April	642.30	623.90	631.60	666.40	667.40	685.40	679.40	697.60	707.40
May	642.50	622.70	641.50	671.50	672.10	690.30	690.00	704.90	712.40
June	648.20	632.10	657.20	681.80	678.40	696.70	704.40	715.10	714.60
July	653.50	637.90	669.80	691.50	682.00	702.80	715.10	716.60	712.30
August	656.20	643.00	672.00	694.90	678.50	701.40	718.70	713.10	707.10
September	658.80	643.30	665.10	688.60	671.90	698.40	719.30	710.20	702.40
October	661.50	644.90	657.20	682.20	672.80	698.40	723.50	716.90	702.30
November	664.70	642.20	655.20	677.00	676.80	700.00	721.00	721.00	680.08
December	662.10	639.10	653.30	676.60	682.70	695.40	714.30	718.70	678.47

Daylight hours:

The utility tested the regression analysis using Average Daylight Hours & Minutes/ Day. The premise behind this variable is that shorter days bring higher electricity consumption. During fall and winter months, the days are shorter and as such, consumers spend more time indoors, lights and appliances are turned on earlier and used for longer periods of time. In 2008, Energy Department experts studied the impact of the extended Daylight Saving Time on energy consumption in the U.S. and found that the *Daylight Saving Time saved about 0.5 percent in total electricity per day. While this might not sound like a lot, it adds up to electricity savings of 1.3 billion kilowatt-hours -- or the amount of electricity used by more than 100,000 households for an entire year.* These electricity savings generally occur during a three- to five-hour period in the evening. The independent analysis for this variable yielded high results, therefore the utility opted to keep it as part of the analysis.

Days per month:

Lastly, CWH 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 CWH opted to keep it as a variable.

All relevant scenarios tested by the utility can be found in the regression model at table 6 entitled Regression Scenarios.

Using a combination of wholesale purchases and the 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.

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

Origin of variables

- HDD: Stats Canada
- CDD : Stats Canada
- Employment: Stats Canada - Kitchener Waterloo Region
- Days per month Computed by the utility
- Daylight hours <http://www.climatemps.com/index.php>

Rational for including and excluding variables

During the process of testing the regression analysis, many different variables and times periods are tested to arrive to, what the utility deems as the best R-Squared. CWH'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.

Regression results are shown and explained in the following section.

3.1.8 REGRESSION RESULTS

Table 6 below presents the regression results used to determine the load forecast

Table 6: Correlation/Regression Results

R Squared	0.8181					1.745	Durbin-Watson Statistic			
Adjusted R Squared	0.8092					1.60 - 1.76	Positive autocorrelation detected			
Standard Error	375568.5313					2.299	Critical F-Statistic - 95% Confidence			
F - Statistic	91.7637					89.62%	Confidence to which analysis holds			
Multiple Regression Equation					Independent Analysis			Auto Correlation	Multicollinearity	
	Coefficients	Standard Error	t Stat	p Value	R Squared	Coefficient	Intercept	DI=1.69 Du=1.72	Adjusted R-Squared against other Indep	Variables With RSQ at > 90%
Intercept	2,971,216.152	1,831,401.709	1.622	10.78%				DW-Stat		
HDD	3,343.489	252.422	13.246	0.00%	46.66%	2159.46	11229064.00	0.34	70.95%	
CDD	20,476.915	1,704.735	12.012	0.00%	0.19%	-1272.87	11983291.00	0.87	46.27%	
Number of Days in Month	210,828.665	47,295.908	4.458	0.00%	1.15%	115227.06	8453274.00	2.99	4.60%	
Employment Stats	2,735.915	1,360.372	2.011	4.69%	0.24%	1508.51	10939092.00	0.21	3.45%	
Daylight hours	-64,307.114	28,278.553	-2.274	2.51%	32.30%	-205233.73	14418459.00	0.28	69.79%	

The resulting regression equation yields an adjusted R-squared of 0.81. When actual annual wholesale values are compared to annual values predicted by the regression equation, the mean absolute percentage error (MAPE) is 0.53 per cent. More detailed model statistics can be found in the next section.

Table 7: Wholesale vs Adjusted (removing known changes in load)

Actual Wholesale vs Post Adjustment Wholesale						
Year	kWh Purchased	year over year	Adjusted	year over year	Purch. VS Adj.	
2008	161,716,845		147,644,590		-8.70%	
2009	154,290,359	-4.59%	139,894,246	-5.25%	-9.33%	
2010	155,932,074	1.06%	141,140,528	0.89%	-9.49%	
2011	154,214,656	-1.10%	140,278,908	-0.61%	-9.04%	
2012	156,500,644	1.48%	143,716,823	2.45%	-8.17%	
2013	154,795,354	-1.09%	146,666,558	2.05%	-5.25%	
2014	148,717,979	-3.93%	145,618,385	-0.71%	-2.08%	
2015	144,221,924	-3.02%	142,900,770	-1.87%	-0.92%	
2016	145,136,098	0.63%	143,959,401	0.74%	-0.81%	

Once CWH calculated it's preferred Regression Results, the Load Forecast model then uses the coefficients from the regression results to adjust the wholesale purchases.

- 1 Table 8 as seen below, demonstrates the results of this adjustment. The table shows a
- 2 comparison of the actual and predicted wholesale purchases.

3

1 **Table 8: Wholesale vs Predicted using the coefficients from the regression results**

Year	Wholesale	year over year	Predicted	year over year	Wholesale VS Predicted
2008	161,716,845		142,745,764		-11.73%
2009	154,290,359	-4.59%	140,745,147	-1.40%	-8.78%
2010	155,932,074	1.06%	143,068,309	1.65%	-8.25%
2011	154,214,656	-1.10%	143,978,528	0.64%	-6.64%
2012	156,500,644	1.48%	143,496,617	-0.33%	-8.31%
2013	154,795,354	-1.09%	144,472,248	0.68%	-6.67%
2014	148,717,979	-3.93%	144,603,820	0.09%	-2.77%
2015	144,221,924	-3.02%	144,146,025	-0.32%	0.05%
2016	145,136,098	0.63%	144,563,750	0.29%	-0.39%

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

5 **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	$A_t - F_t$	$ A_t - F_t $	$(A_t - F_t)^2$	$ A_t - F_t /A_t$
1	161,716,845	142,745,764	18,971,081	18,971,081	359,901,916,197,735	0.1173
2	154,290,359	140,745,147	13,545,212	13,545,212	183,472,764,093,787	0.0878
3	155,932,074	143,068,309	12,863,766	12,863,766	165,476,471,806,376	0.0825
4	154,214,656	143,978,528	10,236,127	10,236,127	104,778,299,728,756	0.0664
5	156,500,644	143,496,617	13,004,028	13,004,028	169,104,731,224,582	0.0831
6	154,795,354	144,472,248	10,323,106	10,323,106	106,566,521,158,363	0.0667
7	148,717,979	144,603,820	4,114,159	4,114,159	16,926,304,800,853	0.0277
8	144,221,924	144,146,025	75,900	75,900	5,760,736,611	0.0005
9	145,136,098	144,563,750	572,348	572,348	327,582,299,514	0.0039
10						
	Totals		83705726.250	83705726.250	1106560352046580.000	0.5360

1

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

4 Mean square error (MSE) is probably the most commonly used error metric. It penalizes larger
5 errors because squaring larger numbers has a greater impact than squaring smaller numbers.

6 The MSE is the sum of the squared errors divided by the number of observations.

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

9 In accordance with the Filing Requirements, CWH has also provided a 2018 forecast assuming
10 twenty-year normal weather conditions. Table 10 below displays 20 years of historical Heating
11 Degree Days and Cooling Degree Days. The impact of using both a 9-year average as well as a
12 20-year average to weather normalize wholesale purchases is presented at Table 11.

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Table 10: Forecast using a twenty-year weather normalization

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	9 year avg	20 year avg
Jan	756.6	624.8	749.8	738.9	684.9	572.2	814.5	849.1	770	551.8	647.1	676.8	891.8	721.1	822	657.3	681.3	865.9	800.8	717.8	759.4	-729.7
Feb	593	512.2	548.1	612.7	587.6	540.2	699	631.7	616.4	604.3	740.1	651.2	649.6	644.7	689.3	573	697.9	831.2	917.5	627.4	698.0	-648.4
Mar	600	492.3	550.6	418.6	566.6	545.6	581.1	487.3	608.6	516.6	546.7	686.1	562.6	470.9	622.3	370.1	612	757	538	479.4	566.5	-550.6
Apr	366.8	282	296.7	339.2	293.8	329.5	372.5	331.5	306.8	293.3	356.4	297.9	341.5	260.6	349.6	365.3	384.7	389.9	359	431.8	353.4	-337.4
May	260.8	59.1	97.1	139.6	111.5	227.5	177.9	158.9	189.4	136.9	136.4	243.1	192.8	144.7	156.7	105.8	152.1	168.9	116.2	174.6	161.7	-157.5
Jun	20.6	54.7	25	34.5	29.8	36.2	43.4	44.2	8.9	19.5	16.5	40.6	75.7	37.7	48.5	42.1	52.6	37.3	54.7	43.9	48.1	-38.3
Jul	12.4	1	0	6.6	9.3	0	0.2	3.6	0	0	3.2	7.6	37.6	6.7	0.8	0	15.1	36.8	19.3	19.3	15.9	-9.0
Aug	17	3.4	8.4	11.5	0	0.2	2	12.8	0.2	4.2	5.2	36.2	18.2	14.2	6.9	19.4	32.7	31.1	29.5	2.1	21.1	-12.8
Sep	87.1	39.7	49.3	99.5	73.6	21.8	54.9	30	22.6	80.9	36.9	93.2	88.8	122.7	98.4	125.4	128.1	117.7	58.2	68.8	100.1	-74.9
Oct	266.9	223.4	267.6	212.7	232.5	292.2	276	226.3	220.2	288.3	137.7	325.7	329.1	284.6	279.9	279.2	262.1	257.1	290.1	209.4	279.7	-258.1
Nov	466.5	392.6	367.5	432	325.8	445	398.5	379.1	388.4	382.2	462.5	499.7	396.5	424.1	382.4	483.6	517.7	529.9	391.1	319.7	438.3	-419.2
Dec	586.2	535.1	579.3	780.3	505	619.4	561.5	643.4	665.3	500.5	630.7	694	669.5	719.4	574.8	565.5	727.3	597.6	453	639.82	626.8	-612.4

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Centre Wellington Hydro Ltd.
EB-2017-0032
2018 Cost of Service
Exhibit 3 – Operating Revenues
Filed on May 1, 2017

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	9 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
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
Mar	0	0	0	0	1.4	8.3	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	-0.6
Apr	0	28.6	19.4	23.7	12.2	7.8	0	8.6	0.8	26	22.4	0	3.2	0	0	0	0	0	0	0	0.4	-7.6
May	73.2	82.4	96	41.1	79.7	70	52.9	31.6	146.3	73.6	99.2	0.7	2.3	21	13.2	18.2	19.6	9	29.8	18.4	14.7	-48.9
Jun	103	101.3	196.5	71.8	100.9	192.4	118.3	86.4	188.7	167.3	106.1	53	26.2	32.6	21.6	61.2	31.3	44.3	15	24.1	34.4	-87.1
Jul	46.8	117.7	79.1	92.5	160	142.7	128	59.6	140.7	101.6	141	75.8	14.5	106.6	129.7	128.2	86.5	38.8	57.7	101.2	82.1	-97.4
Aug	11.7	45	48.9	35.2	35.7	87.6	24	41.2	52.1	12.9	47.5	29.5	57.3	85.3	60.1	59.1	42.1	28.5	47.9	100.7	56.7	-47.6
Sep	2.8	0	0	1.2	2	10	0	1.5	7.6	1.1	19.8	12	5.5	23	19.7	16.4	20.5	11.4	45.3	16.1	18.9	-10.8
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	0.2	-0.1
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0

Table 11: Forecast using a 9 year vs 20 year weather normalization

Date	Weather Normalized 2009-2017	Yearly Total 9 Year	Weather Normalized 1997-2016	Yearly Total 20 Year
January	13484534		13354547.85	
February	12619328		12436037.27	
March	12612938		12616704.81	
April	11650958		11725353.87	
May	11416834		12102112.50	
June	11136916		12223558.91	
July	12289728		12562876.92	
August	11900374		11629509.75	
September	11254636		10986426.66	
October	11765273		11707159.60	
November	12155451		12114534.13	
December	13048457	145,335,432	13025330.07	146,484,152.34

3.1.9 DETERMINATION OF CUSTOMER FORECAST

CWH has used a simple geometric mean function to determine the forecasted number of customers of 2017 and 2018. 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 CWH's natural customer growth. The geometric mean results were analyzed by CWH and then further adjusted for known particulars. Historic customer counts and projected customer counts for 2017 and 2018 are presented in Table 12 below. A variance analysis of customer counts and projections is presented at 3.3.1. CWH used an average customer count as a base for its calculations.⁶

⁶ MFR - For customer/connection counts - identification as to whether customer/connection count is shown in year end or average format.

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Table 12: Customer Forecast

	Residential		General Service < 50 kW		General Service > 50 to 2999 kW		General Service > 3000 to 4999 kW		USL		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	Customers or Connections	Growth Rate
2008	5537		679		57		1		2		31		1658	
2009	5584	1.0085	694	1.0221	61	1.0614	1	1.0000	2	1.0000	31	1.0000	1658	1.0000
2010	5647	1.0113	704	1.0144	62	1.0248	1	1.0000	4	2.0000	31	1.0000	1680	1.0133
2011	5709	1.0110	709	1.0071	61	0.9758	1	1.0000	6	1.5000	31	1.0000	1687	1.0042
2012	5805	1.0168	708	0.9986	60	0.9835	1	1.0000	10	1.5833	29	0.9355	1688	1.0006
2013	5912	1.0183	711	1.0049	57	0.9580	1	1.0000	13	1.3684	31	1.0690	1696	1.0047
2014	5947	1.0059	715	1.0056	57	0.9912	1	1.0000	13	1.0000	31	1.0000	1705	1.0053
2015	5961	1.0024	730	1.0210	52	0.9204	1	1.0000	13	1.0000	31	1.0000	1707	1.0009
2016	5989	1.0046	742	1.0158	48	0.9135	1	1.0000	13	1.0000	29	0.9355	1705	0.9988
<i>Geomean</i>		<i>1.0098</i>		<i>1.0112</i>		<i>0.9775</i>		<i>1.0000</i>		<i>1.2636</i>		<i>0.9917</i>		<i>1.0035</i>
2017	6047		750		46		1		16		29		1710	
2018	6107		758		45		1		21		29		1716	

In the section below, LDCs can adjust the computed customer count for the Bridge and Test Year for special circumstance such as new subdivision or loss of customer or other utility specific reasons.

Adjusted														
2017	6047	1.0098	750	1.0112	46	0.9775	1	1.0000	13	1.0000	29	0.9917	1710	1.0035
2018	6107	1.0098	758	1.0112	45	0.9775	1	1.0000	13	1.0000	29	0.9917	1716	1.0035

2

3.1.10 DETERMINATION OF 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) in the actual wholesale kWh. Weather normalized wholesale kWh, for historical years, are allocated to these classes based on these historical shares. Forecast values for 2017 and 2018 are allocated based on the average historical actual shares. For those rate classes that use kW consumption as a billing determinant, sales forecast for these customer classes are then converted to kW based on the historical volumetric relationship between kWh and kW.⁷

3.1.11 LOAD FORECAST BY CLASS.

The following section presents class specific adjusted historic 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 average historical share for 2008-2016, except USL class using the average kwh per connection for 2013-2016, and Street Light class using year 2016 kWh per connection.

Table 13 to Table 18 show historical and forecasted details for each of the non-weather sensitive classes.

⁷ MFR - For consumption and demand - explanation to support how kWh are converted to kW for applicable demand-billed classes

1

Table 13: Residential Forecast (kWh) (Weather Sensitive)

Year	Residential Actual kWh	Total Actual Wholesale	Ratio%	Adjusted Wholesale	Residential Weather Normal	Per customer
2008	44,267,126	147,644,590	29.98%	142,745,764	42,798,349	7,730
2009	43,775,753	139,894,246	31.29%	140,745,147	44,042,018	7,887
2010	45,093,297	141,140,528	31.95%	143,068,309	45,709,208	8,094
2011	44,251,862	140,278,908	31.55%	143,978,528	45,418,931	7,956
2012	45,223,786	143,716,823	31.47%	143,496,617	45,154,493	7,779
2013	46,477,809	146,666,558	31.69%	144,472,248	45,782,444	7,745
2014	46,177,614	145,618,385	31.71%	144,603,820	45,855,881	7,711
2015	45,098,159	142,900,770	31.56%	144,146,025	45,491,150	7,631
2016	44,914,361	143,959,401	31.20%	144,563,750	45,102,914	7,532
2017	0	0	31.38%	145,032,042	45,507,125	7,525
2018		Avg.	31.38%	145,335,433	45,602,321	7,467

2

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Table 14: General Service <50 kW Forecast (kWh) (Weather Sensitive)

Year	Actual kWh	Total Wholesale	Ratio%	Adjusted Wholesale	Weather Normal	Per customer
2008	19,599,082	147,644,590	13.27%	142,745,764	18,948,787	27,927
2009	20,149,612	139,894,246	14.40%	140,745,147	20,272,171	29,232
2010	20,409,368	141,140,528	14.46%	143,068,309	20,688,132	29,407
2011	20,583,077	140,278,908	14.67%	143,978,528	21,125,921	29,818
2012	20,304,130	143,716,823	14.13%	143,496,617	20,273,020	28,654
2013	20,342,402	146,666,558	13.87%	144,472,248	20,038,055	28,183
2014	20,579,869	145,618,385	14.13%	144,603,820	20,436,483	28,582
2015	21,387,560	142,900,770	14.97%	144,146,025	21,573,934	29,553
2016	23,270,825	143,959,401	16.16%	144,563,750	23,368,517	31,515
2017	0	0	14.45%	145,032,042	20,960,879	27,956
2018		Avg.	14.45%	145,335,433	21,004,726	27,705

4

1 **Table 15: General Service >50 to 2999 kW (Weather Sensitive)**

Year	Actual kWh	Total Wholesale	Ratio%	Adjusted Wholesale	Weather Normal	Per customer
2008	66,898,820	147,644,590	45.31%	142,745,764	64,679,127	1,134,722
2009	62,407,115	139,894,246	44.61%	140,745,147	62,786,704	1,037,797
2010	64,376,684	141,140,528	45.61%	143,068,309	65,255,979	1,052,516
2011	61,442,756	140,278,908	43.80%	143,978,528	63,063,206	1,042,367
2012	63,286,610	143,716,823	44.04%	143,496,617	63,189,641	1,062,011
2013	60,663,507	146,666,558	41.36%	144,472,248	59,755,907	1,048,349
2014	55,013,692	145,618,385	37.78%	144,603,820	54,630,396	966,910
2015	52,447,595	142,900,770	36.70%	144,146,025	52,904,630	1,017,397
2016	50,553,990	143,959,401	35.12%	144,563,750	50,766,218	1,068,762
2017	0	0	41.59%	145,032,042	60,321,817	1,299,207
2018		Avg.	41.59%	145,335,433	60,448,004	1,331,937

2
3 **Table 16: General Service >3000-4,999 kW (Weather Sensitive)**

Year	Actual kWh	Total Wholesale	Ratio%	Adjusted Wholesale	Weather Normal	Per customer
2008	21,799,117	147,644,590	14.76%	142,745,764	21,075,826	21,075,826
2009	18,664,981	139,894,246	13.34%	140,745,147	18,778,510	18,778,510
2010	17,729,306	141,140,528	12.56%	143,068,309	17,971,464	17,971,464
2011	18,104,644	140,278,908	12.91%	143,978,528	18,582,123	18,582,123
2012	19,950,324	143,716,823	13.88%	143,496,617	19,919,756	19,919,756
2013	18,608,986	146,666,558	12.69%	144,472,248	18,330,573	18,330,573
2014	18,461,823	145,618,385	12.68%	144,603,820	18,333,194	18,333,194
2015	17,295,612	142,900,770	12.10%	144,146,025	17,446,328	17,446,328
2016	18,344,949	143,959,401	12.74%	144,563,750	18,421,962	18,421,962
2017	0	0	13.07%	145,032,042	18,961,919	18,961,919
2018		Avg.	13.07%	145,335,433	19,001,586	19,001,586

1 **Table 17: General Service >50 to 2999 kW (demand) (Non-Weather Sensitive)**

Year	kWh	kW	KW/kWh Ratio
2008	66,898,820	169,386	0.00253
2009	62,407,115	169,024	0.00271
2010	64,376,684	170,203	0.00264
2011	61,442,756	160,989	0.00262
2012	63,286,610	164,084	0.00259
2013	60,663,507	165,373	0.00273
2014	55,013,692	154,260	0.00280
2015	52,447,595	148,977	0.00284
2016	50,553,990	145,124	0.00287
2017	60,321,817	163,126	0.00270
2018	60,448,004	163,467	0.00270
Avg.			0.00270

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3 **Table 18: General Service 3000-4999 kW (demand) (Non-Weather Sensitive)**

Year	kWh	kW	KW/kWh Ratio
2008	21,799,117	46,155	0.00212
2009	18,664,981	42,413	0.00227
2010	17,729,306	44,378	0.00250
2011	18,104,644	44,397	0.00245
2012	19,950,324	45,270	0.00227
2013	18,608,986	42,815	0.00230
2014	18,461,823	43,264	0.00234
2015	17,295,612	41,433	0.00240
2016	18,344,949	43,591	0.00238
2017	18,961,919	44,308	0.00234
2018	19,001,586	44,400	0.00234
Avg.			0.00234

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Table 19: Unmetered Scattered Load (kWh) (Non-Weather Sensitive)

Year	kWh	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2008	401,394	2	200,697	0.0000	0.00000
2009	400,443	2	200,222	0.0000	0.00000
2010	453,001	4	113,250	0.0000	0.00000
2011	494,006	6	82,334	0.0000	0.00000
2012	515,381	10	54,251	0.0000	0.00000
2013	548,400	13	42,185	0.0000	0.00000
2014	563,396	13	43,338	0.0000	0.00000
2015	563,839	13	43,372	0.0000	0.00000
2016	562,067	13	43,236	0.0000	0.00000
2017	559,426	13	43,033	0.0000	0.00000
2018	559,426	13	43,033	0.0000	0.00000

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Table 20: Sentinel Lights (Non-Weather Sensitive)

Year	kWh	kW	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2008	45,821	127	31	1,478	4.1061	0.00278
2009	46,167	128	31	1,489	4.1365	0.00278
2010	43,014	119	31	1,388	3.8542	0.00278
2011	41,279	115	31	1,332	3.6997	0.00278
2012	41,226	115	29	1,422	3.9497	0.00278
2013	40,676	113	31	1,312	3.6448	0.00278
2014	39,277	109	31	1,267	3.5187	0.00278
2015	39,278	109	31	1,267	3.5187	0.00278
2016	39,314	109	29	1,356	3.7652	0.00278
2017	39,336	109	29	1,368	3.7993	0.00278
2018	39,009	108	29	1,368	3.7993	0.00278

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Table 21: Street Lighting (Non-Weather Sensitive)

Year	kWh	kW	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2008	1,140,337	3,144	1658	688	1.8964	0.00276
2009	1,139,918	3,235	1658	688	1.9512	0.00284
2010	1,139,670	3,382	1680	678	2.0133	0.00297
2011	1,127,166	3,216	1687	668	1.9060	0.00285
2012	1,063,521	3,124	1688	630	1.8509	0.00294
2013	1,151,811	3,174	1696	679	1.8715	0.00276
2014	1,141,797	3,151	1705	670	1.8482	0.00276
2015	976,129	2,727	1707	572	1.5981	0.00279
2016	566,049	1,555	1705	332	0.9124	0.00275
2017	568,009	1,561	1710	332	0.9124	0.00275
2018	569,977	1,566	1716	332	0.9124	0.00275

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3.1.12 FINAL NORMALIZED LOAD FORECAST

Table 22 below present's historical and projected weather normalized Load Forecast by customer class.

Table 22: Final Load Forecast (not CDM adjusted)

	Year	2017	2018	Share	Target Manual Adj for 2018 CDM	Final Adjusted (kWh)
Residential	Cust/Conn	6,047	6,107			6,107
	kWh	45,507,125	45,602,321	30.97%	885,745	44,716,576
	kW					
General Service < 50 kW	Cust/Conn	750	758			758
	kWh	20,960,879	21,004,726	14.27%	407,980	20,596,746
	kW					
General Service > 50 to 2999 kW	Cust/Conn	46	45			45
	kWh	60,321,817	60,448,004	41.06%	1,174,096	59,273,907
	kW	163,126	163,467			160,292
General Service > 3000 to 4999 kW	Cust/Conn	1	1			1
	kWh	18,961,919	19,001,586	12.91%	369,072	18,632,513
	kW	44,308	44,400			43,538
USL	Cust/Conn	13	13			13
	kWh	559,426	559,426	0.38%	10,866	548,560
						-
Sentinel	Cust/Conn	29	29			29
	kWh	39,336	39,009	0.03%	758	38,252
	kW	109	108			106
Street Lighting	Cust/Conn	1,710	1,716			1,716
	kWh	568,009	569,977	0.39%	11,071	558,906
	kW	1,561	1,566			1,536
Total	Cust/Conn	8,597	8,669			8,669
	kWh	146,918,511	147,225,049			144,365,460
	kW	209,104	209,542	100.00%	2,859,588	205,472

3.2 IMPACT AND PERSISTENCE FROM HISTORICAL CDM PROGRAMS

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 take into account the impacts on energy purchases arising from CDM programs undertaken by CWH’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.⁸

The schedule to achieve CDM targets are presented at Table 23 below:

⁸ 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 23: Appendix 2-I ⁹

2015-2020 CDM Program: 2015, first year of the current CDM plan							
6 Year (2015-2020) kWh Target:							
8,730,000							
	2015	2016	2017	2018	2019	2020	Total
%							
2015 CDM Programs	19.71%	19.71%	19.71%	19.71%	19.71%	18.11%	116.66%
2016 CDM Programs		16.38%	16.38%	16.38%	16.38%	16.38%	81.89%
2017 CDM Programs			16.38%	16.38%	16.38%	16.38%	65.51%
2018 CDM Programs				16.38%	16.38%	16.38%	49.13%
2019 CDM Programs					16.38%	16.38%	32.76%
2020 CDM Programs						16.38%	16.38%
Total in Year	19.71%	36.09%	52.47%	68.84%	85.22%	100.00%	362.33%
2015 CDM Programs	1,720,706.00	1,720,706.00	1,720,706.00	1,720,706.00	1,720,706.00	1,581,029.00	1,581,029.00
2016 CDM Programs		1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20
2017 CDM Programs			1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20
2018 CDM Programs				1,429,794.20	1,429,794.20	1,429,794.20	1,429,794.20
2019 CDM Programs					1,429,794.20	1,429,794.20	1,429,794.20
2020 CDM Programs						1,429,794.20	1,429,794.20
Total in Year	1,720,706.00	3,150,500.20	4,580,294.40	6,010,088.60	7,439,882.80	8,730,000.00	8,730,000.00

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⁹ MFR - Completed Appendix 2-I

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Weight Factor for Inclusion in CDM Adjustment to 2014 Load Forecast									
	2011	2012	2013	2014	2015	2016	2017	2018	
Weight Factor for each year's CDM program impact on 2014 load forecast	0	0	0	0	0	0.5	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									
	2011	2012	2013	2014	2015	2016	2017	2018	Total for 2018
	kWh								
Amount used for CDM threshold for LRAMVA (2014)	-	-			1,720,706.00				1,720,706.00
2011 CDM adjustment (per Board Decision in 2011 Cost of Service Application)	-	-	-	-		-			
Amount used for CDM threshold for LRAMVA (2015)						1,429,794.20	1,429,794.20	1,429,794.20	4,289,382.60
Manual Adjustment for 2018 Load Forecast (billed basis)	-				-	714,897.10	1,429,794.20	714,897.10	2,859,588.40

CWH was approved for disposition of its 2011-2014 LRAMVA balances, in its 2017 IRM application; therefore, the utility did not include them in the calculations of amount used for CDM threshold for LRAMVA.

The values entered in the 2015-2020 originate from CWH's approved CDM plan which shows CWH's targets to be 4.17 GWh. The report has been filed in conjunction with this application.

3.2.2 ALLOCATION OF CDM RESULTS

The overall CDM adjustment for 2018, as calculated above, is allocated on pro-rata basis (using kWh forecast) per class. Table 24 below presents the method behind CWH's allocation of CDM reduction in consumption.¹⁰

¹⁰ MFR – CDM Adjustment - account for CDM in 2017 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

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Table 24: CDM adjustments to Load Forecast

	Year	2017	2018		Share	Target	Final Adjusted (kWh)
Residential	Cust/Conn	6,047	6,107				
	kWh	45,507,125	45,602,321		30.97%	885,745	44,716,576
	kW						
General Service < 50 kW	Cust/Conn	750	758				
	kWh	20,960,879	21,004,726		14.27%	407,980	20,596,746
	kW						
General Service > 50 to 2999 kW	Cust/Conn	46	45				
	kWh	60,321,817	60,448,004		41.06%	1,174,096	59,273,907
	kW	163,126	163,467				160,292
General Service > 3000 to 4999 kW	Cust/Conn	1	1				
	kWh	18,961,919	19,001,586		12.91%	369,072	18,632,513
	kW	44,308	44,400				43,538
USL	Cust/Conn	13	13				
	kWh	559,426	559,426		0.38%	10,866	548,560
Sentinel	Cust/Conn	29	29				
	kWh	39,336	39,009		0.03%	758	38,252
	kW	109	108				106
Street Lighting	Cust/Conn	1,710	1,716				
	kWh	568,009	569,977		0.39%	11,071	558,906
	kW	1,561	1,566				1,536
Total	Cust/Conn	8,597	8,669				-
	kWh	146,918,511	147,225,049				144,365,460
	kW	209,104	209,542		100.00%	2,859,588.40	205,472

2 The following table shows the per class allocation of amount used for CDM threshold for

3 LRAMVA (2018).¹¹

¹¹ 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.

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Table 25: Allocation of amount used for CDM threshold for LRAMVA

Load Forecast Results			LRAMVA Threshold Allocation	
	Year	2018	Share	Target
Residential				
	kWh	45,602,321	30.97%	532,981
General Service < 50 kW				
	kWh	21,004,726	14.27%	245,495
General Service > 50 to 2999 kW				
	kWh	60,448,004	41.06%	706,491
General Service > 3000 to 4999 kW				
	kWh	19,001,586	12.91%	222,083
USL				
	kWh	559,426	0.38%	6,538
Sentinel				
	kWh	39,009	0.03%	456
Street Lighting				
	kWh	569,977	0.39%	6,662
Total				
	kWh	147,225,049		
			100.00%	1,720,706.00

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Table 26: 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	2012	8300		156,500,644	143,496,617		212,592	212,592			
Historical	2013	8421		154,795,354	144,472,248		211,476	211,476		\$3,161,645.73	
Historical	2014	8468	Board-approved ⁽²⁾	148,717,979	144,603,820	Board-approved ⁽²⁾	200,783	200,783	Board-approved ⁽²⁾	\$3,148,576.40	
Historical	2015	8495		144,221,924	144,146,025		193,246	193,246		\$3,156,964.30	
Historical	2016	8525		145,136,098	144,563,750		190,380	190,380		\$3,233,519.33	
Bridge Year (Forecast)	2017	8597			145,032,042			209,104			\$3,330,163.57
Test Year (Forecast)	2018	8669			145,335,433			209,542			\$3,707,316.83

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1 3.2.3 FINAL WEATHER ADJUSTED LOAD FORECAST

2 Below provides details of the Final Customer and Volume Load Forecast for each of the years.

3 This summary of the billing determinants by rate class will be used to develop CWH's proposed
4 rates.

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Table 27: Final Customer and Volume Load Forecast

	Year	2013	2014	2015	2016	2017	2018	2018 CDM Adjusted (kWh)
Residential	Cust/Conn	5,912	5,947	5,961	5,989	6,047	6,107	6,107
	kWh	45,782,444	45,855,881	45,491,150	45,102,914	45,507,125	45,602,321	44,716,576
	kW							-
								-
General Service < 50 kW	Cust/Conn	711	715	730	742	750	758	758
	kWh	20,038,055	20,436,483	21,573,934	23,368,517	20,960,879	21,004,726	20,596,746
	kW							-
								-
General Service > 50 to 2999 kW	Cust/Conn	57	57	52	48	46	45	45
	kWh	59,755,907	54,630,396	52,904,630	50,766,218	60,321,817	60,448,004	59,273,907
	kW	165,373	154,260	148,977	145,124	163,126	163,467	160,292
								-
General Service > 3000 to 4999 kW	Cust/Conn	1	1	1	1	1	1	1
	kWh	18,330,573	18,333,194	17,446,328	18,421,962	18,961,919	19,001,586	18,632,513
	kW	42,815	43,264	41,433	43,591	44,308	44,400	43,538
								-
USL	Cust/Conn	13	13	13	13	13	13	13
	kWh	548,400	563,396	563,839	562,067	559,426	559,426	548,560
								-
Sentinel	Cust/Conn	31	31	31	29	29	29	29
	kWh	40,676	39,277	39,278	39,314	39,336	39,009	38,252
	kW	113	109	109	109	109	108	106
								-
Street Lighting	Cust/Conn	1,696	1,705	1,707	1,705	1,710	1,716	1,716
	kWh	1,151,811	1,141,797	976,129	566,049	568,009	569,977	558,906
	kW	3,174	3,151	2,727	1,555	1,561	1,566	1,536
Total	Cust/Conn	8,421	8,468	8,495	8,525	8,597	8,669	8,669
	kWh	145,647,867	141,000,425	138,995,288	138,827,041	146,918,511	147,225,049	144,365,460
	kW	211,476	200,783	193,246	190,380	209,104	209,542	205,472

3.3 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

3.3.1 VARIANCE ANALYSIS OF LOAD FORECAST¹²

Table 28 below shows the yearly change in consumption for the Residential class. Variance explanation follow the table. A completed OEB Appendix 2-IB is presented at Appendix A of this Exhibit.¹³

Table 28: Residential Variance

Year	Cust	%chg	kWh	%chg
2008	5,537		44,267,126	
2009	5,584	0.01	43,775,753	-0.01
2010	5,647	0.01	45,093,297	0.03
2011	5,709	0.01	44,251,862	-0.02
2012	5,805	0.02	45,223,786	0.02
2013	5,912	0.02	46,477,809	0.03
2014	5,947	0.01	46,177,614	-0.01
2015	5,961	0.00	45,098,159	-0.02
2016	5,989	0.00	44,914,361	0.00
2017	6,047	0.01	45,507,125	0.01
2018	6,107	0.01	45,602,321	0.00

The annual residential customer count has seen a nominal average increase of 57 new customers per year. Although the Municipality is growing at a fast pace, CWH's service territory is near saturation. The coinciding residential kWh consumption has relatively followed the increase in customer count with the variance a result of conservation efforts and or weather related electrical usage.

¹² 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

¹³ MFR - Completed Appendix 2-IB

AMENDED JUNE 14, 2017

As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year (2008-2016) geometric mean function to determine the forecasted number of customers of 2017 and 2018.

CHW adds that this method of determining the customer count has been approved in rates cases going back to 2008.

The increase in customer count from 2016 to 2017 is of 58 and the increase from 2017 to 2018 is 60.

Table 29 below shows the yearly change in consumption for the GS<50 kW class. Variance explanation follows the table.

Table 29: GS <50 kW Variance

Year	Cust	%chg	kWh	%chg
2008	679		19,599,082	
2009	694	0.02	20,149,612	0.03
2010	704	0.01	20,409,368	0.01
2011	709	0.01	20,583,077	0.01
2012	708	0.00	20,304,130	-0.01
2013	711	0.00	20,342,402	0.00
2014	715	0.01	20,579,869	0.01
2015	730	0.02	21,387,560	0.04
2016	742	0.02	23,270,825	0.09
2017	750	0.01	20,960,879	-0.10
2018	758	0.01	21,004,726	0.00

Similar to the annual residential customer count, GS <50 kW customer counts have seen a nominal average increase of new customers per year. This is attributed to CWH's service territory being developed to its borders with little room for new customers in this class, other than infill building within pockets of established areas. Like the residential class, the coinciding small

commercial customers' kWh consumption has relatively followed the increase in customer count with the variance a result of conservation efforts and or weather related electrical usage.

AMENDED JUNE 14, 2017

As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year (2008-2016) geometric mean function to determine the forecasted number of customers of 2017 and 2018.

The increase in customer count from 2016 to 2017 is of 8 and the increase from 2017 to 2018 is 8.

Table 30: GS>50-2999 Variance

Year	Cust	%chg	kWh	%chg	kW	%chg
2008	57		66,898,820		169,386	
2009	61	0.06	62,407,115	-0.07	169,024	0.00
2010	62	0.02	64,376,684	0.03	170,203	0.01
2011	61	-0.02	61,442,756	-0.05	160,989	-0.05
2012	60	-0.02	63,286,610	0.03	164,084	0.02
2013	57	-0.04	60,663,507	-0.04	165,373	0.01
2014	57	-0.01	55,013,692	-0.09	154,260	-0.07
2015	52	-0.08	52,447,595	-0.05	148,977	-0.03
2016	48	-0.09	50,553,990	-0.04	145,124	-0.03
2017	46	-0.04	60,321,817	0.19	163,126	0.12
2018	45	-0.02	60,448,004	0.00	163,467	0.00

The decrease in the historical consumption in the GS> 50-2999 kWh customer class is attributed to the reduced customer connections.

AMENDED JUNE 14, 2017

As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year (2008-2016) geometric mean function to determine the forecasted number of customers of 2017 and 2018.

The decrease in customer count from 2016 to 2017 is of 2 and the decrease from 2017 to 2018 is 1.

Table 31: GS>3000-4999 Variance

Year	Cust	%chg	kWh	%chg	kW	%chg
2008	1		21,799,117		46,155	
2009	1	0.00	18,664,981	-0.14	42,413	-0.08
2010	1	0.00	17,729,306	-0.05	44,378	0.05
2011	1	0.00	18,104,644	0.02	44,397	0.00
2012	1	0.00	19,950,324	0.10	45,270	0.02
2013	1	0.00	18,608,986	-0.07	42,815	-0.05
2014	1	0.00	18,461,823	-0.01	43,264	0.01
2015	1	0.00	17,295,612	-0.06	41,433	-0.04
2016	1	0.00	18,344,949	0.06	43,591	0.05
2017	1	0.00	18,961,919	0.03	44,308	0.02
2018	1	0.00	19,001,586	0.00	44,400	0.00

The decrease in consumption can be attributed to conservation efforts. In 2015, the customer underwent a major plant expansion because of shutting down one location, outside of CWH's service area, and combined the two facilities. There are small fluctuations in KW demand, which is normal to have small changes from time to time.

AMENDED JUNE 14, 2017

As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year (2008-2016) geometric mean function to determine the forecasted number of customers of 2017 and 2018.

The change in customer count from 2016 to 2017 is 0 and the increase from 2017 to 2018 is also 0.

1 **Table 32: USL Variance**

Year	Cust	%chg	kWh	%chg
2008	2		401,394	
2009	2	0.00	400,443	0.00
2010	4	1.00	453,001	0.13
2011	6	0.50	494,006	0.09
2012	10	0.58	515,381	0.04
2013	13	0.37	548,400	0.06
2014	13	0.00	563,396	0.03
2015	13	0.00	563,839	0.00
2016	13	0.00	562,067	0.00
2017	13	0.00	559,426	0.00
2018	13	0.00	559,426	0.00

2 The historical increase in the kWh consumption is due to an increase in customers. The
3 projected kWh are reflective of the 4 year historical average because CWH reclassified customers
4 into the proper classes in 2012.

5 **AMENDED JUNE 14, 2017**

6 As explained in *Section 3.1.9 Determination of Customer Forecast*, CWH has used a simple 9-year
7 (2008-2016) geometric mean function to determine the forecasted number of customers of
8 2017 and 2018.

9 The change in customer count from 2016 to 2017 is 0 and the increase from 2017 to 2018 is also
10 0.

1 **Table 33: Sentinel Variance**

Year	Cust	%chg	kWh	%chg	kW	%chg
2008	31		45,821		127	
2009	31	0%	46,167	1%	128	1%
2010	31	0%	43,014	-7%	119	-7%
2011	31	0%	41,279	-4%	115	-4%
2012	29	-6%	41,226	0%	115	0%
2013	31	7%	40,676	-1%	113	-1%
2014	31	0%	39,277	-3%	109	-3%
2015	31	0%	39,278	0%	109	0%
2016	29	-6%	39,314	0%	109	0%
2017	29	0%	39,336	0%	109	0%
2018	29	0%	39,009	-1%	108	-1%

2 The sentinel light class has remained stable in the historical 10-year period.

3 **AMENDED JUNE 14, 2017**

4 As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year
5 (2008-2016) geometric mean function to determine the forecasted number of customers of
6 2017 and 2018.

7 The change in customer count from 2016 to 2017 is 0 and the increase from 2017 to 2018 is also
8 0.

1 **Table 34: Street Lights Variance**

Year	Cust	%chg	kWh	%chg	kW	%chg
2008	1,658		1,140,337		3,144	
2009	1,658	0.00	1,139,918	0.00	3,235	3%
2010	1,680	0.01	1,139,670	0.00	3,382	5%
2011	1,687	0.00	1,127,166	-0.01	3,216	-5%
2012	1,688	0.00	1,063,521	-0.06	3,124	-3%
2013	1,696	0.00	1,151,811	0.08	3,174	2%
2014	1,705	0.01	1,141,797	-0.01	3,151	-1%
2015	1,707	0.00	976,129	-0.15	2,727	-13%
2016	1,705	0.00	566,049	-0.42	1,555	-43%
2017	1,710	0.00	568,009	0.00	1,561	0%
2018	1,716	0.00	569,977	0.00	1,566	0%

2 The Township of Centre Wellington completed a LED conversion in 2015 to all of their
3 streetlights; the usage has therefore decreased to the current level in 2016.

4 CWH projects an increase of 11 connections between 2017 and 2018. These street light
5 connections will be added to new subdivisions.

6 **AMENDED JUNE 14, 2017**

7 As explained in *Section 3.1.9 Determination of Customer Forecast*, CWH has used a simple 9-year
8 (2008-2016) geometric mean function to determine the forecasted number of customers of
9 2017 and 2018.

10 The increase in customer count from 2016 to 2017 is of 5 and the increase from 2017 to 2018 is
11 6.

12 Table 35a below shows the 2013 Board Approved Forecast vs the 2018 Test Year Forecast. CWH
13 notes that has little control over its Board Approved Load Forecast as the OEB dictates the
14 manner in which the forecast is determined (i.e. using a multivariate regression analysis based
15 on multi-year historical values.) In other words, the Load Forecasting process is formulaic in
16 nature and year over year variances are outside of the utility's control. That said CWH notes
17 that the Residential Class has increased by 249 customers since its last Board Approved Cost of
18 Service and that the other classes have remained relatively unchanged. The overall consumption

has declined by approximately 2M kWh which can be explained by change in weather patterns or effects of energy efficiencies.

Table 35a: Variances Last Board Approved

Customer Class Name	Customer Count			Consumption			Demand		
	2013 Board Appr	2018 Test Year	Var	2013 Board Appr	2018 Test Year	Var	2013 Board Appr	2018 Test Year	Var
Residential	5,858	6,107	249	45,809,827	44,716,576	-1,093,251	0	0	0
General Service < 50 kW	738	758	20	20,408,044	20,596,746	188,702	0	0	0
General Service 50 to 2999 kW	62	45	-17	61,309,307	59,273,907	-2,035,400	157,640	160,292	2,652
General Service 3000-4999 kW	1	1	0	16,959,953	18,632,513	1,672,560	37,416	43,538	6,122
Unmetered Scattered Load	10	13	3	604,378	548,560	-55,818	0	0	0
Sentinel Lighting	31	29	-2	37,461	38,252	791	104	106	2
Street Lighting	1,738	1,716	-22	1,130,191	558,906	-571,285	3,162	1,536	-1,626
TOTAL	8,438	8,669	231	146,259,161	144,365,460	-1,893,701	198,322	205,472	7,150

Table 35b below, presents variances between actuals and 2013 Board Approved. As shown in the table below, the trend in Residential customer count has increased since its last Board Approved while its consumption has diminished. The GS<50 class has seen a decrease in customer count from 2013-2015 but the trend shows an increase in 2016-2018 while the GS>50 has seen a decrease over the last 5 years. The customer/connection count for all other classes has remained relatively unchanged.

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.

1

Table 35b – Variances from Last Board Approved

Customers or Connections		Year over Year Changes					
		Actual			Projected		
Customer Class Name	Last Board Appr	2013	2014	2015	2016	2017	2018
Residential	5,858	53	89	103	129	189	249
General Service < 50 kW	738	-29	-23	-9	5	12	20
General Service 50 to 2999 kW	62	-5	-6	-10	-15	-17	-17
General Service 3000-4999 kW	1	0	0	0	0	0	0
Unmetered Scattered Load	10	3	3	3	3	3	3
Sentinel Lighting	31	0	0	0	-2	-2	-2
Street Lighting	1,738	-42	-33	-32	-34	-28	-22
TOTAL	8,438	8,419	8,469	8,494	8,524	8,596	8,669

Consumption (kWh)		Year over Year Changes					
		Actual			Projected		
Customer Class Name	Last Board Appr	2013	2014	2015	2016	2017	2018
Residential	45,809,827	699,847	369,428	-712,899	-913,359	-302,702	-207,506
General Service < 50 kW	20,408,044	-5,058	171,203	1,000,638	2,862,782	552,835	596,682
General Service 50 to 2999 kW	61,309,307	-645,799	-6,295,615	-8,861,712	-10,755,317	-987,490	-861,303
General Service 3000-4999 kW	16,959,953	1,649,033	1,501,870	335,659	1,384,996	2,001,966	2,041,633
Unmetered Scattered Load	604,378	-55,971	-40,982	-40,539	-42,311	-44,953	-44,953
Sentinel Lighting	37,461	3,215	1,813	1,809	1,842	1,875	1,548
Street Lighting	1,130,191	21,620	11,606	-154,062	-564,142	-562,182	-560,214
TOTAL	146,259,161	147,926,048	141,978,484	137,828,055	138,233,652	146,918,511	147,225,049

Consumption (kW)		Year over Year Changes					
		Actual			Projected		
Customer Class Name	Last Board Appr	2013	2014	2015	2016	2017	2018
Residential	0	0	0	0	0	0	0
General Service < 50 kW	0	0	0	0	0	0	0
General Service 50 to 2999 kW	157,640	7,733	-3,380	-8,663	-12,516	5,486	5,827
General Service 3000-4999 kW	37,416	5,399	5,848	4,017	6,175	6,892	6,984
Unmetered Scattered Load	0	0	0	0	0	0	0
Sentinel Lighting	104	9	5	5	5	5	4
Street Lighting	3,162	12	-11	-435	-1,607	-1,601	-1,596
TOTAL	198,322	211,476	200,784	193,246	190,380	209,104	209,542

2

1

Table 35 Appendix 2-IA

	Calendar Year (for 2017 Cost of Service)	Customers / Connections		Consumption (kWh) ⁽³⁾			Demand (kW or kVA)			Revenues	
				Weather- actual	Weather-normalized		Weather- actual	Weather-normalized		Weather- actual	Weather- normalized
Historical	2012	8300		156,500,644	143,496,617		212,592	212,592		n/a	
Historical	2013	8421	Board-approved ⁽²⁾	154,795,354	144,472,248	Board-approved ⁽²⁾	211,476	211,476	Board-approved ⁽²⁾	\$3,135,353.43	
Historical	2014	8468		148,717,979	144,603,820		200,783	200,783		\$3,148,576.40	
Historical	2015	8495		144,221,924	144,146,025		193,246	193,246		\$3,156,964.30	
Historical	2016	8525		145,136,098	144,563,750		190,380	190,380		\$3,233,519.33	
Bridge Year (Forecast)	2017	8597			145,032,042			209,104			\$3,330,163.57
Test Year (Forecast)	2018	8669			145,335,433			209,542			\$3,707,316.83

1 Table 37 below, presents the actual average use per customer, by customer class, and historical and adjusted forecast average use per
2 customer generated using the load forecast. As can be seen from the results below, the predicted use per customer follows the trend created
3 from its historical usage per customer.¹⁴

4 **Table 36 -Average per customer use**

Average per customer												
	Residential	GS<50	GS>50		Intermediate		USL		Sentinel		StreetLights	
Year	kWh/cust	kWh/cust	kWh/cust	kW/cust	kWh/cust	kW/cust	kWh/conn	kW/conn	kWh/conn	kW/conn	kWh/conn	kW/conn
2008	7,730	27,927	1,134,722	2,972	21,075,826	46,155	200,697	0	1,478	4	688	2
2009	7,887	29,232	1,037,797	2,794	18,778,510	42,413	200,222	0	1,489	4	688	2
2010	8,094	29,407	1,052,516	2,745	17,971,464	44,378	113,250	0	1,388	4	678	2
2011	7,956	29,818	1,042,367	2,661	18,582,123	44,397	82,334	0	1,332	4	668	2
2012	7,779	28,654	1,062,011	2,758	19,919,756	45,270	54,251	0	1,422	4	630	2
2013	7,745	28,183	1,048,349	2,901	18,330,573	42,815	42,185	0	1,312	4	679	2
2014	7,711	28,582	966,910	2,730	18,333,194	43,264	43,338	0	1,267	4	670	2
2015	7,631	29,553	1,017,397	2,865	17,446,328	41,433	43,372	0	1,267	4	572	2
2016	7,532	31,515	1,068,762	3,055	18,421,962	43,591	43,236	0	1,356	4	332	1
2017	7,525	27,956	1,299,207	3,513	18,961,919	44,308	43,033	0	1,368	4	332	1
2018	7,467	27,705	1,331,937	3,602	19,001,586	44,400	43,033	0	1,368	4	332	1

¹⁴ 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.

1 3.3.2 VARIANCE ANALYSIS OF DISTRIBUTION REVENUES¹⁵

2 CWH provides details of the Final Customer and Volume Load Forecast for each of the years.

3 This summary of the billing determinants by rate class will be used to develop CWH's proposed

4 rates.

¹⁵ 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.

1

Table 37: Variance Analysis of Revenues

	2013 Board Approved	2013	Difference 2013 vs 2013 Board Approved	2014	Difference 2014 vs 2013	2015	Difference 2015 vs 2014	2016	Difference 2016 vs 2015	2017	Difference 2017 vs 2016	2018	Difference 2018 vs 2017
Residential	\$1,711,242.70	\$1,730,720.48	\$19,477.78	\$1,756,891.94	\$26,171.47	\$1,767,440.92	\$10,548.98	\$1,808,496.55	\$41,055.63	\$1,862,165.76	\$53,669.21	\$2,092,149.10	\$229,983.34
GS<50	\$523,125.76	\$517,097.09	-\$6,028.67	\$529,666.14	\$12,569.06	\$554,178.33	\$24,512.18	\$601,535.11	\$47,356.79	\$568,408.87	-\$33,126.24	\$643,585.76	\$75,176.89
GS 50-2999	\$669,888.38	\$687,290.84	\$17,402.46	\$657,544.16	-\$29,746.68	\$637,253.37	-\$20,290.79	\$626,609.22	-\$10,644.15	\$697,312.12	\$70,702.90	\$724,272.09	\$26,959.97
GS 3000-4999	\$110,854.11	\$125,732.14	\$14,878.02	\$128,747.92	\$3,015.78	\$125,250.12	-\$3,497.80	\$133,712.55	\$8,462.43	\$137,950.85	\$4,238.31	\$169,967.05	\$32,016.20
USL	\$7,006.29	\$6,664.15	-\$342.14	\$6,888.92	\$224.77	\$6,963.95	\$75.03	\$7,076.48	\$112.53	\$7,177.26	\$100.78	\$8,062.62	\$885.36
Sentinel Lights	\$2,884.78	\$2,990.85	\$106.07	\$2,984.01	-\$6.84	\$3,023.27	\$39.26	\$2,964.94	-\$58.33	\$3,010.80	\$45.85	\$3,439.42	\$428.62
Streetlights	\$65,670.00	\$91,150.19	\$25,480.19	\$65,853.31	-\$25,296.89	\$62,854.35	-\$2,998.95	\$53,124.49	-\$9,729.87	\$54,137.91	\$1,013.43	\$65,840.79	\$11,702.87
TOTAL	\$3,090,672.02	\$3,161,645.73	\$70,973.71	\$3,148,576.40	-\$13,069.33	\$3,156,964.30	\$8,387.91	\$3,233,519.33	\$76,555.03	\$3,330,163.57	\$96,644.24	\$3,707,316.83	\$377,153.26

2

1 **Table 38: 2013 Board Approved VS 2013 Actual Revenues**

	2013 Board Approved	2013	Difference 2013 vs 2013 Board Approved
Residential	\$1,711,242.70	\$1,730,720.48	\$19,477.78
GS<50	\$523,125.76	\$517,097.09	-\$6,028.67
GS 50-2999	\$669,888.38	\$687,290.84	\$17,402.46
GS 3000-4999	\$110,854.11	\$125,732.14	\$14,878.02
USL	\$7,006.29	\$6,664.15	-\$342.14
Sentinel Lights	\$2,884.78	\$2,990.85	\$106.07
Streetlights	\$65,670.00	\$64,857.89	-\$812.11
TOTAL	\$3,090,672.02	\$3,135,353.43	\$44,681.41

2

3 The total distribution revenue in 2013 of \$3,161,645.73 was \$70,973.71 more than the 2013

4 Board Approved. In 2013, CWH had a slightly higher number of residential customers and

5 higher consumption, which resulted with an increase of revenue within the revenue for

6 residential. The demand, kW, for the GS 50-2,999 kW class was also higher than what was

7 calculated in the 2013 CoS.

8 **Table 39: 2013 Actual VS 2014 Actual Revenues**

	2013	2014	Difference 2014 vs 2013
Residential	\$1,730,720.48	\$1,756,891.94	\$26,171.47
GS<50	\$517,097.09	\$529,666.14	\$12,569.06
GS 50-2999	\$687,290.84	\$657,544.16	-\$29,746.68
GS 3000-4999	\$125,732.14	\$128,747.92	\$3,015.78
USL	\$6,664.15	\$6,888.92	\$224.77
Sentinel Lights	\$2,990.85	\$2,984.01	-\$6.84
Streetlights	\$64,857.89	\$65,853.31	\$995.41
TOTAL	\$3,135,353.43	\$3,148,576.40	\$13,222.97

The total distribution revenue in 2014 of \$3,148,576 was \$13,223, or .42% more than the 2013 Actual. CWH's majority of revenue is derived from its residential class, therefore with a small increase and rates and a modest increase in customer numbers CWH had an increase in revenue from its residential class. The demand of the GS 50 to 2,999 kW class declined and therefore there was a decrease in distribution revenue.

Table 40: 2014 Actual VS 2015 Actual

	2014	2015	Difference 2015 vs 2014
Residential	\$1,756,891.94	\$1,767,440.92	\$10,548.98
GS<50	\$529,666.14	\$554,178.33	\$24,512.18
GS 50-2999	\$657,544.16	\$637,253.37	-\$20,290.79
GS 3000-4999	\$128,747.92	\$125,250.12	-\$3,497.80
USL	\$6,888.92	\$6,963.95	\$75.03
Sentinel Lights	\$2,984.01	\$3,023.27	\$39.26
Streetlights	\$65,853.31	\$62,854.35	-\$2,998.95
TOTAL	\$3,148,576.40	\$3,156,964.30	\$8,387.91

The total distribution revenue in 2015 of \$3,156,964 was \$8,387.91 or 0.27% more than the 2014 Actual. The GS<50 class had a slight increase in its number of customers and a small increase (4%) in the corresponding consumption. CWH annually reviews the general service customers and reclassifies them according to their demand, if required. Therefore, CWH saw an increase in GS<50 customers and a decrease in GS 50-2,999 kW.

1

Table 41: 2015 Actual VS 2016 Actual Revenue

	2015	2016	Difference 2016 vs 2015
Residential	\$1,767,440.92	\$1,808,496.55	\$41,055.63
GS<50	\$554,178.33	\$601,535.11	\$47,356.79
GS 50-2999	\$637,253.37	\$626,609.22	-\$10,644.15
GS 3000-4999	\$125,250.12	\$133,712.55	\$8,462.43
USL	\$6,963.95	\$7,076.48	\$112.53
Sentinel Lights	\$3,023.27	\$2,964.94	-\$58.33
Streetlights	\$62,854.35	\$53,124.49	-\$9,729.87
TOTAL	\$3,156,964.30	\$3,233,519.33	\$76,555.03

2 The total distribution revenue in 2016 of \$3,233,519.33 was \$76,555.03 more than the 2015
3 Actual. CWH had a small decrease in residential usage however; in 2016, CWH implemented the
4 Residential Rate design, which is moving the customer class to a wholly fixed rate, over the
5 period of 4 years. Because of this, the residential class had a 17% increase in the fixed rate and a
6 24% decrease in the variable charge.

7 The GS<50 class had an increase in customers as well as an increase in consumption.

8

Table 42: 2016 Actual VS 2017 Bridge

	2016	2017	Difference 2017 vs 2016
Residential	\$1,808,496.55	\$1,862,165.76	\$53,669.21
GS<50	\$601,535.11	\$568,408.87	-\$33,126.24
GS 50-2999	\$626,609.22	\$697,312.12	\$70,702.90
GS 3000-4999	\$133,712.55	\$137,950.85	\$4,238.31
USL	\$7,076.48	\$7,177.26	\$100.78
Sentinel Lights	\$2,964.94	\$3,010.80	\$45.85
Streetlights	\$53,124.49	\$54,137.91	\$1,013.43
TOTAL	\$3,233,519.33	\$3,330,163.57	\$96,644.24

9

The total distribution revenue in 2017 is forecast to be \$3,330,163, which will be \$96,644, or 2.99% greater than 2016. Similarly, to the previous year CWH is transitioning its residential class to be a wholly fixed rate. The residential class is forecast to have an increase in consumption and number of customers. The GS<50 class is forecast to have reduced consumption due to CDM efforts in this class.

Table 43: 2017 Bridge VS 2018 Test

	2017	2018	Difference 2018 vs 2017
Residential	\$1,862,165.76	\$2,092,149.10	\$229,983.34
GS<50	\$568,408.87	\$643,585.76	\$75,176.89
GS 50-2999	\$697,312.12	\$724,272.09	\$26,959.97
GS 3000-4999	\$137,950.85	\$169,967.05	\$32,016.20
USL	\$7,177.26	\$8,062.62	\$885.36
Sentinel Lights	\$3,010.80	\$3,439.42	\$428.62
Streetlights	\$54,137.91	\$65,840.79	\$11,702.87
TOTAL	\$3,330,163.57	\$3,707,316.83	\$377,153.26

The total distribution revenue in 2018 is forecast to be \$3,707,316.83 which will be \$377,153.26, or 11.33% greater than the 2017 Bridge. The main reason for the projected increase is the increased distribution rates proposed in this application.

CWH has provided the 2018 Test Year Revenue on both existing and proposed rates in the tables below; this is provided further and discussed in detail in Exhibit 6.

1

Table 44: Revenues at Existing Rates

Test Year Projected Revenue from Existing Rates										
Customer Class Name	per	Test Year Volume	Fixed Rate	Variable Distribution Rate	Customers (Connections)	Fixed Charge Revenue	Transform. Allowance	Variable Revenue	TOTAL	% Total
Residential	kWh	44,716,576	\$21.02	\$0.0074	6,107	\$1,540,433.29		\$330,902.66	\$1,871,335.95	56.33%
General Service < 50 kW	kWh	20,596,746	\$18.44	\$0.0192	758	\$167,762.02		\$395,457.53	\$563,219.55	16.95%
General Service 50 to 2999 kW	kW	160,292	\$170.19	\$3.7113	45	\$92,685.88	-47415.00	\$594,892.98	\$687,578.86	20.70%
General Service 3000-4999 kW	kW	43,538	\$685.86	\$2.9277	1	\$8,230.32	-22449.60	\$127,465.84	\$135,696.16	4.08%
Unmetered Scattered Load	kWh	548,560	\$6.92	\$0.0109	13	\$1,079.52		\$5,979.30	\$7,058.82	0.21%
Sentinel Lighting	kW	106	\$4.73	\$12.5207	29	\$1,618.82		\$1,330.36	\$2,949.18	0.09%
Street Lighting	kW	1,536	\$1.93	\$9.3109	1,716	\$39,750.14		\$14,297.58	\$54,047.72	1.63%
Total		66,067,354			8,669	\$1,851,559.99	-\$69,864.60	\$1,470,326.25	\$3,321,886.25	100%

2

3

Table 45: Revenues at Proposed Rates

Test Year Projected Revenue from Proposed Rates										
Customer Class Name	per	Test Year Volume	Fixed Rate	Variable Distribution Rate	Customers (Connections)	Fixed Charge Revenue	Transform. Allowance	Variable Revenue	TOTAL	% Total
Residential	kWh	44,716,576	\$26.02	\$0.0041	6,107	\$1,907,176.59		\$184,972.50	\$2,092,149.10	55.39%
General Service < 50 kW	kWh	20,596,746	\$21.07	\$0.0219	758	\$191,689.03		\$451,896.73	\$643,585.76	17.04%
General Service 50 to 2999 kW	kW	160,292	\$170.53	\$4.2349	45	\$92,871.05	-47415.00	\$678,816.05	\$771,687.09	20.43%
General Service 3000-4999 kW	kW	43,538	\$687.21	\$4.2301	1	\$8,246.52	-22449.60	\$184,170.13	\$192,416.65	5.09%
Unmetered Scattered Load	kWh	548,560	\$7.90	\$0.0125	13	\$1,232.40		\$6,830.22	\$8,062.62	0.21%
Sentinel Lighting	kW	106	\$5.52	\$14.5899	29	\$1,889.20		\$1,550.22	\$3,439.42	0.09%
Street Lighting	kW	1,536	\$2.35	\$11.3575	1,716	\$48,400.43		\$17,440.36	\$65,840.79	1.74%
Total		66,067,354			8,669	\$2,251,505.22	-\$69,864.60	\$1,525,676.21	\$3,777,181.43	100%

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 CWH's proposed revenue requirement. Further details on the derivation of the Revenue Requirement is presented at Exhibit 6.

Other Distribution Revenues includes items such as:

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

CWH 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 38 - OEB Appendix 2-H presented at the next page. Year over year variance analysis follow at 3.4.2 - Other Revenue Variance Analysis.^{16 17}

¹⁶ MFR - Completed Appendix 2-H

¹⁷ MFR - Variance analysis - year over year, historical, bridge and test

Table 46: Appendix 2-H

		2013	2013	2014	2015	2016	2017	2018
	USoA Description	Board Approved						
4235	4235-Miscellaneous Service Revenues	-\$126,100.00	-\$124,915.00	-\$136,713.00	-\$152,071.00	-\$150,907.00	-\$152,300.00	-\$124,600.00
4225	4225-Late Payment Charges	-\$10,800.00	-\$14,561.00	-\$15,668.00	-\$14,252.00	-\$12,908.00	-\$14,300.00	-\$14,300.00
4080	4080-Distribution Services Revenue	-\$3,023,100.00	-\$3,327,719.00	-\$3,176,805.00	-\$3,148,759.00	-\$3,147,537.00	-\$3,291,800.00	-\$3,326,100.00
4082	4082-Retail Services Revenues	-\$11,800.00	-\$8,344.00	-\$8,274.00	-\$7,397.00	-\$7,172.00	-\$7,900.00	-\$7,900.00
4084	4084-Service Transaction Requests (STR) Revenues	-\$200.00	-\$77.00	-\$105.00	-\$61.00	-\$60.00	-\$100.00	-\$100.00
4210	4210-Rent from Electric Property	-\$45,500.00	-\$77,599.69	-\$127,902.96	-\$87,437.80	-\$79,841.88	-\$78,200.00	-\$78,200.00
4220	4220-Other Electric Revenues	-\$10,800.00	-\$14,561.00	-\$15,668.00	-\$14,252.00	-\$12,908.00	-\$14,300.00	-\$14,300.00
4355	4355-Gain on Disposition of Utility and Other Property	\$0.00	-\$10,063.00	-\$19,116.00	-\$10,277.00	\$0.00	-\$22,000.00	-\$2,000.00
4360	4360-Loss on Disposition of Utility and Other Property	\$0.00	\$6,534.00	\$46,477.00	\$9,919.00	\$47,701.00	\$5,500.00	\$5,500.00
4375	4375-Revenues from Non-Utility Operations	-\$219,600.00	-\$434,125.09	-\$512,311.15	-\$763,889.42	-\$625,842.22	-\$424,600.00	-\$414,300.00
4380	4380-Expenses of Non-Utility Operations	\$202,700.00	\$369,137.00	\$487,881.00	\$661,891.00	\$595,619.00	\$411,400.00	\$400,000.00
4385	4385-Non-Utility Rental Income	\$0.00	-\$5,607.50					
4390	4390-Miscellaneous Non-Operating Income	-\$1,300.00		-\$18,479.34	-\$11,723.10	-\$12,050.32	-\$6,000.00	-\$6,000.00
4395	4395-Rate-Payer Benefit Including Interest	\$0.00						
4398	4398-Foreign Exchange Gains and Losses, Including Amortization	\$0.00						
4405	4405-Interest and Dividend Income	-\$39,800.00	-\$8,613.00	-\$34,695.95	-\$33,944.91	-\$30,160.90	-\$32,000.00	-\$31,000.00
	Specific Service Charges	-\$126,100.00	-\$124,915.00	-\$136,713.00	-\$152,071.00	-\$150,907.00	-\$152,300.00	-\$124,600.00
	Late Payment Charges	-\$10,800.00	-\$14,561.00	-\$15,668.00	-\$14,252.00	-\$12,908.00	-\$14,300.00	-\$14,300.00
	Other Distribution/Operating Revenues	-\$3,091,400.00	-\$3,428,300.69	-\$3,328,754.96	-\$3,257,906.80	-\$3,247,518.88	-\$3,392,300.00	-\$3,426,600.00
	Other Income or Deductions	-\$58,000.00	-\$82,737.59	-\$50,244.44	-\$148,024.43	-\$24,733.44	-\$67,700.00	-\$47,800.00
	Total	-\$3,286,300.00	-\$3,650,514.28	-\$3,531,380.40	-\$3,572,254.23	-\$3,436,067.32	-\$3,626,600.00	-\$3,613,300.00

3.4.2 OTHER REVENUE VARIANCE ANALYSIS

Tables below present year over year variances of Other Operating Revenues:

Table 47: Variance Analysis of Other Operating Revenues

2013 BA - 2013

				Var Analysis	Var Analysis
		2013	2013	\$	%
	USoA Description	Board Approved			
4235	4235-Miscellaneous Service Revenues	-\$126,100	-\$124,915	\$1,185	0.94%
4225	4225-Late Payment Charges	-\$10,800	-\$14,561	-\$3,761	34.82%
4082	4082-Retail Services Revenues	-\$11,800	-\$8,344	\$3,456	29.29%
4084	4084-Service Transaction Requests (STR) Revenues	-\$200	-\$77	\$123	61.50%
4086	4086-SSS Administration Revenue	-\$18,400	-\$18,547	-\$147	0.80%
4210	4210-Rent from Electric Property	-\$45,500	-\$77,600	-\$32,100	70.55%
4355	4355-Gain on Disposition of Utility and Other Property	\$0	-\$10,063	-\$10,063	
4360	4360-Loss on Disposition of Utility and Other Property	\$0	\$6,534	\$6,534	
4375	4375-Revenues from Non-Utility Operations	-\$219,600	-\$434,125	-\$214,525	97.69%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$202,700	\$369,137	\$166,437	82.11%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	\$0	-\$5,608	-\$5,608	
4390	4390-Miscellaneous Non-Operating Income	-\$1,300	\$0	\$1,300	100.00%
4405	4405-Interest and Dividend Income	-\$39,800	\$8,613	\$48,413	121.64%
	Total	-\$270,800	-\$309,555	-\$38,755	\$0

	Specific Service Charges	-\$126,100	-\$124,915	\$1,185	0.94%
	Late Payment Charges	-\$10,800	-\$14,561	-\$3,761	34.82%
	Other Distribution/Operating Revenues	-\$75,900	-\$104,567	-\$28,667	37.77%
	Other Income or Deductions	-\$58,000	-\$65,512	-\$7,512	12.95%
	Total	-\$270,800	-\$309,555	-\$38,755	14.31%

Account 4210-Rent from Electric Property. For 2013 Account 4210 was \$32,100 greater than the OEB approved amount of \$45,500. In CWH's 2013 CoS, CWH estimated the revenue from Hydro One Networks Rental of space in the Fiber Room for electronic equipment as being \$30,500, whereas the final agreement worked out to being \$56,700 or \$26,200 higher than estimated. Also in the last quarter of 2013, CWH rented space in the Fiber Room at a monthly charge of \$1,580 per month or an additional amount of \$6,300 to a 3rd party vendor, CW Communications. These two amounts make up the variance in 2013.

1 Account 4375-Revenues from Non-Utility Operations. OEB approved amount was \$219,600,
2 whereas the actual amount for 2013 was \$434,125 for a difference of \$ 214,524. CDM revenues
3 for programs was \$252,393, or \$177,193 greater than the \$75,200 included in the 2013 approved
4 OEB Budget. Also, included in the account 4375 for 2013 actual was a CDM bonus of \$29,975 for
5 meeting the targets for the 2006-2010 period.

6 Account 4380-Expenses for Non-Utility Operations. OEB approved amount was \$202,700,
7 whereas the actual expenses for 2013 was \$369,137 or a difference of \$166,437. This amount
8 consists of fewer dollars being charged for water and sewer billing and additional CDM
9 expenditures of \$177,193 for incentives and expenditures for 2013 CDM year.

10 Account 4405-Interest and Dividend Income. 2013 Board approved amount was \$39,800,
11 however the amount for 2013 was \$4,205 for a decrease of \$35,595. In 2013 CWH reversed
12 carrying charges related to smart meter capital in account 1555 and smart meter OMA charges
13 in account 1556 in the amount of \$37,641 as set out in the guidelines related to transferring
14 smart meters from these two accounts. This resulted in a total Interest and Dividend revenue of
15 \$4,205 for 2013, CWH during the Cost of Service application transferred the interest expense
16 (\$12,818) related to RSVA and RCVA to account 4405 which partially offsets interest earned on
17 RSVA and RCVA's in the amount of \$14,123. CWH believes this adjustment is appropriate
18 because it brings both the cost and revenues related to RSVA and RCVA's in the cost of service
19 application. CWH left interest expense related to Interest paid for the Letter of Credit to the
20 IESO and Interest paid to Customers for deposits on hand in account 6035 which is not
21 designated as being part of the cost of service recoverable amounts.

Table 48: Variance Analysis of Other Operating Revenues**2013-2014**

				Var Analysis	Var Analysis
		2013	2014	\$	%
	USoA Description				
4235	4235-Miscellaneous Service Revenues	-\$124,915	-\$136,713	-\$11,798	9.44%
4225	4225-Late Payment Charges	-\$14,561	-\$15,668	-\$1,108	7.61%
4082	4082-Retail Services Revenues	-\$8,344	-\$8,274	\$70	0.83%
4084	4084-Service Transaction Requests (STR) Revenues	-\$77	-\$105	-\$28	36.69%
4086	4086-SSS Administration Revenue	-\$18,547	-\$18,920	-\$373	2.01%
4210	4210-Rent from Electric Property	-\$77,600	-\$127,903	-\$50,303	64.82%
4355	4355-Gain on Disposition of Utility and Other Property	-\$10,063	-\$19,116	-\$9,052	89.96%
4360	4360-Loss on Disposition of Utility and Other Property	\$6,534	\$46,477	\$39,943	611.28%
4375	4375-Revenues from Non-Utility Operations	-\$434,125	-\$512,311	-\$78,186	18.01%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$369,137	\$487,881	\$118,743	32.17%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	-\$5,608	\$0	\$5,608	100.00%
4390	4390-Miscellaneous Non-Operating Income	\$0	-\$18,479	-\$18,479	
4405	4405-Interest and Dividend Income	\$8,613	-\$34,696	-\$43,309	502.85%
	Total	-\$309,555	-\$357,828	-\$48,273	16%

	Specific Service Charges	-\$124,915	-\$136,713	-\$11,798	9.44%
	Late Payment Charges	-\$14,561	-\$15,668	-\$1,108	7.61%
	Other Distribution/Operating Revenues	-\$104,567	-\$155,202	-\$50,635	48.42%
	Other Income or Deductions	-\$65,512	-\$50,244	\$15,267	23.30%
	Total	-\$309,555	-\$357,828	-\$48,273	15.59%

Account 4210-Rent from Electric Property. For 2014, Account 4210 was \$50,300 greater than the actual amount of \$77,600 for 2013. The 2014 amount is greater because Rogers Communications paid a one-time improvement fee of \$39,200 to cover the cost of renovations to the Fiber Room to accommodate their equipment and the 3rd Vendor, CW Communications paid a full year's rental for an additional amount of \$12,600.

Account 4360-Loss on Disposition of Utility and Other Property. 2014 Actual Loss on Disposition is \$46,477, which is greater than 2013 by \$39,943. This increase is partial due to the de-registration of the meter point in Fergus and the disposal of the stranded asset of \$18,541. The balance of \$21,402 is due to replacement of poles, UG conductor, OH Conductor and OH Services that were replaced in 2014 that were not fully depreciated due to the increase in useful lives implemented in 2013 Cost of Service application.

1 Account 4375-Revenues from Non-Utility Operations. The 2014 Actual amount of \$512,311 was
2 greater than the 2013 actual amount of \$434,125 by \$78,186. This difference is due to an
3 increase in revenues for water/sewer billing of \$2,170; and an increase in CDM project revenues
4 of \$105,991 and reduction in CDM Bonus revenues of \$29,975. CDM bonus' are paid out at the
5 end of the CDM target period.

6 Account 4380-Expenses for Non-Utility Operations. The 2014 Actual expenditure amount was
7 \$487,881, whereas the actual expenses for 2013 were \$369,137 or a difference of \$118,743. This
8 amount consists of an increase in postage and wages for collections of water and sewer billings
9 for \$12,751; CWH charges expenses for water and sewer billings to account 4380 at cost. CDM
10 expenditures had an increase of \$105,991 for incentives and expenditures for 2014 CDM year
11 which is offset by the revenues shown in account 4375.

12 Account 4405-Interest and Dividend Income. The 2014 actual interest and dividend income
13 shows revenue of \$34,696, however the amount for 2013 amount is showing a debit of \$8,613
14 for a total increase of \$43,309. This revenue is made up of Interest earned on Bank balance
15 and Dividend income of \$30,581 and interest earned on RSVA and RCVA account of \$14,069.
16 CWH in the 2018 Cost of Service application transferred through adjustments \$9,954 interest
17 expense for interest calculated on RSVA and RCVA credit balances from account 6035 to
18 account 4405. CWH believes this is appropriate because it maintains continuity between
19 amounts being taken into the 2018 Cost of Service application. CWH left the interest paid on
20 the line of credit to the IESO and interest paid on customer deposits in account 6035-Other
21 Interest Expense which is not taken into the cost of service application.

22

Table 49: Variance Analysis of Other Operating Revenues**2014 - 2015**

				Var Analysis	Var Analysis
		2014	2015	\$	%
	USoA Description				
4235	4235-Miscellaneous Service Revenues	-\$136,713	-\$152,071	-\$15,357	11.23%
4225	4225-Late Payment Charges	-\$15,668	-\$14,252	\$1,416	9.04%
4082	4082-Retail Services Revenues	-\$8,274	-\$7,397	\$877	10.60%
4084	4084-Service Transaction Requests (STR) Revenues	-\$105	-\$61	\$44	42.16%
4086	4086-SSS Administration Revenue	-\$18,920	-\$19,100	-\$181	0.96%
4210	4210-Rent from Electric Property	-\$127,903	-\$87,438	\$40,465	31.64%
4355	4355-Gain on Disposition of Utility and Other Property	-\$19,116	-\$10,277	\$8,839	46.24%
4360	4360-Loss on Disposition of Utility and Other Property	\$46,477	\$9,919	-\$36,558	78.66%
4375	4375-Revenues from Non-Utility Operations	-\$512,311	-\$763,889	-\$251,578	49.11%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$487,881	\$661,891	\$174,010	35.67%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	\$0	\$0	\$0	
4390	4390-Miscellaneous Non-Operating Income	-\$18,479	-\$11,723	\$6,756	36.56%
4405	4405-Interest and Dividend Income	-\$34,696	-\$33,945	\$751	2.16%
	Total	-\$357,828	-\$428,343	-\$70,515	20%

	Specific Service Charges	-\$136,713	-\$152,071	-\$15,357	11.23%
	Late Payment Charges	-\$15,668	-\$14,252	\$1,416	9.04%
	Other Distribution/Operating Revenues	-\$155,202	-\$113,996	\$41,206	26.55%
	Other Income or Deductions	-\$50,244	-\$148,025	-\$97,780	194.61%
	Total	-\$357,828	-\$428,343	-\$70,515	19.71%

Account 4210-Rent from Electric Property. For 2015, Account 4210 was \$40,500 lower than the actual amount of \$127,900 for 2014. The 2015 amount is lower because of Rogers Communications paid a one-time improvement fee of \$39,200 in 2014 to cover the cost of renovations to the Fiber Room to accommodate their equipment. Also in the latter part of 2015, Rogers Communications cancelled their contract as they had now moved to the equipment to their own expanded premises.

Account 4360-Loss on Disposition of Utility and Other Property. 2015 disposals were \$9,919 or a decrease over 2014 of \$36,558, this is due to fewer undepreciated assets being written off. In 2015, CWH wrote off \$4,231 in poles that were either replaced due to upgrades or the system

1 going underground. Also in 2015, CWH wrote off \$4,544 worth of meters that failed in the field
2 and were scrapped but were not fully depreciated.

3 Account 4375-Revenues from Non-Utility Operations. The 2015 Actual amount of \$763,889 was
4 greater than 2014 actual amount of \$512,311 by \$251,578. This difference is due to an increase
5 in revenues for water/sewer billing of \$2,948; increase in CDM project revenues of \$178,704 and
6 the accrued CDM Bonus revenues of \$69,926 for the CDM Targets being met for the period of
7 2011-2014.

8 Account 4380-Expenses for Non-Utility Operations. The 2015 Actual expenditure amount was
9 \$661,891, whereas the actual expenses for 2014 were \$487,881 or a difference of \$174,010. This
10 increase is largely due to the increase in incentives paid out to customers for the 2015 CDM year
11 for \$178,704. There was a slight decrease in expenses charged against 4380 for water and sewer
12 billing for \$4,693, which was due to lower CIS / computer costs in 2015.

13

Table 50: Variance Analysis of Other Operating Revenues**2015 - 2016**

				Var Analysis	Var Analysis
		2015	2016	\$	%
	USoA Description				
4235	4235-Miscellaneous Service Revenues	-\$152,071	-\$150,907	\$1,163	0.76%
4225	4225-Late Payment Charges	-\$14,252	-\$12,908	\$1,344	9.43%
4082	4082-Retail Services Revenues	-\$7,397	-\$7,172	\$225	3.04%
4084	4084-Service Transaction Requests (STR) Revenues	-\$61	-\$60	\$1	1.07%
4086	4086-SSS Administration Revenue	-\$19,100	-\$19,327	-\$227	1.19%
4210	4210-Rent from Electric Property	-\$87,438	-\$79,842	\$7,596	8.69%
4355	4355-Gain on Disposition of Utility and Other Property	-\$10,277	\$0	\$10,277	100.00%
4360	4360-Loss on Disposition of Utility and Other Property	\$9,919	\$47,701	\$37,782	380.92%
4375	4375-Revenues from Non-Utility Operations	-\$763,889	-\$625,842	\$138,047	18.07%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$661,891	\$595,619	-\$66,272	10.01%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	\$0	\$0	\$0	
4390	4390-Miscellaneous Non-Operating Income	-\$11,723	-\$12,050	-\$327	2.79%
4405	4405-Interest and Dividend Income	-\$33,945	-\$30,161	\$3,784	11.15%
	Total	-\$428,343	-\$294,951	\$133,392	31%

	Specific Service Charges	-\$152,071	-\$150,907	\$1,163	0.76%
	Late Payment Charges	-\$14,252	-\$12,908	\$1,344	9.43%
	Other Distribution/Operating Revenues	-\$113,996	-\$106,401	\$7,594	6.66%
	Other Income or Deductions	-\$148,025	-\$24,733	\$123,291	83.29%
	Total	-\$428,343	-\$294,951	\$133,392	31.14%

Account 4375-Revenues from Non-Utility Operations. The 2016 Actual amount of \$625,842 was lower than 2015 actual amount of \$763,889 by \$138,047. This difference is due to an increase in revenues for water/sewer billing of \$5,039; reduction in CDM project revenues of \$73,988 and reduction on CDM bonus paid to CWH by \$69,098.

Account 4380-Expenses for Non-Utility Operations. The 2016 Actual expenditure amount was \$595,619 whereas the actual expenses for 2015 was \$661,891 or a difference of \$66,272. This decrease is due to the decrease in incentives paid out to customers for the 2016 CDM programs. CDM incentive payouts dropped by \$74,000 in 2016 compared to 2015. There was an increase in expenses charged against 4380 for water and sewer billing in the amount of \$7,716 which was

- 1 mainly due to increase in computer costs in 2016, there was also a slight increase in time
 2 allocated for water and sewer billing and collecting.

Table 51: Variance Analysis of Other Operating Revenues**2016 - 2017**

				Var Analysis	Var Analysis
		2016	2017	\$	%
	USoA Description				
4235	4235-Miscellaneous Service Revenues	-\$150,907	-\$152,300	-\$1,393	0.92%
4225	4225-Late Payment Charges	-\$12,908	-\$14,300	-\$1,392	10.78%
4082	4082-Retail Services Revenues	-\$7,172	-\$7,900	-\$728	10.15%
4084	4084-Service Transaction Requests (STR) Revenues	-\$60	-\$100	-\$40	66.03%
4086	4086-SSS Administration Revenue	-\$19,327	-\$19,200	\$127	0.66%
4210	4210-Rent from Electric Property	-\$79,842	-\$78,200	\$1,642	2.06%
4355	4355-Gain on Disposition of Utility and Other Property	\$0	-\$22,000	-\$22,000	
4360	4360-Loss on Disposition of Utility and Other Property	\$47,701	\$5,500	-\$42,201	88.47%
4375	4375-Revenues from Non-Utility Operations	-\$625,842	-\$424,600	\$201,242	32.16%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$595,619	\$411,400	-\$184,219	30.93%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	\$0	\$0	\$0	
4390	4390-Miscellaneous Non-Operating Income	-\$12,050	-\$6,000	\$6,050	50.21%
4405	4405-Interest and Dividend Income	-\$30,161	-\$32,000	-\$1,839	6.10%
	Total	-\$294,951	-\$339,700	-\$44,749	15%

	Specific Service Charges	-\$150,907	-\$152,300	-\$1,393	0.92%
	Late Payment Charges	-\$12,908	-\$14,300	-\$1,392	10.78%
	Other Distribution/Operating Revenues	-\$106,401	-\$105,400	\$1,001	0.94%
	Other Income or Deductions	-\$24,733	-\$67,700	-\$42,967	173.72%
	Total	-\$294,951	-\$339,700	-\$44,749	15.17%

- 5
- 6 Account 4375-Revenues from Non-Utility Operations. The 2017 Bridge Year amount of
 7 \$424,600 was lower than 2016 actual amount of \$625.842 by \$201,242. This difference is due to
 8 an increase in revenues for water/sewer billing of \$986; reduction in CDM project revenues of
 9 \$201,400 and reduction on CDM bonus paid to CWH by \$828. CWH doesn't anticipate receiving
 10 any bonus until 2021 if targets set by the OEB are met. All CDM programs between 2015-2020
 11 revenues will be offset by a corresponding expense amount.

- 12 Account 4380-Expenses for Non-Utility Operations. 2017 Forecasted expenditure amount was
 13 \$411,400 whereas the actual expenses for 2016 was \$595,610 or a difference of \$184,219. This

1 decrease is due to an anticipated decline in incentives paid out to customers for the 2017 CDM
2 programs. CDM incentive payouts are forecasted as \$261,700 as decline of \$201,400 in 2017
3 compared to 2016. There is an increase in expenses being charged against 4380 for water and
4 sewer billing for \$17,181, which was mainly due to an increase in the amounts of computer and
5 wages being charged against the time spent doing water, and sewer billing. A separate job
6 code was setup in 2016, which allows for more detailed tracking of costs related to water and
7 sewer billing and removes these costs from electric water and sewer billing
8

Table 52: Variance Analysis of Other Operating Revenues**2017 - 2018**

				Var Analysis	Var Analysis
		2017	2018	\$	%
	USoA Description				
4235	4235-Miscellaneous Service Revenues	-\$152,300	-\$124,600	\$27,700	18.19%
4225	4225-Late Payment Charges	-\$14,300	-\$14,300	\$0	0.00%
4082	4082-Retail Services Revenues	-\$7,900	-\$7,900	\$0	0.00%
4084	4084-Service Transaction Requests (STR) Revenues	-\$100	-\$100	\$0	0.00%
4086	4086-SSS Administration Revenue	-\$19,200	-\$19,500	-\$300	1.56%
4210	4210-Rent from Electric Property	-\$78,200	-\$78,200	\$0	0.00%
4355	4355-Gain on Disposition of Utility and Other Property	-\$22,000	-\$2,000	\$20,000	90.91%
4360	4360-Loss on Disposition of Utility and Other Property	\$5,500	\$5,500	\$0	0.00%
4375	4375-Revenues from Non-Utility Operations	-\$424,600	-\$414,300	\$10,300	2.43%
4375	4375-Sub-account Generation Facility Revenues	\$0	\$0	\$0	
4380	4380-Expenses of Non-Utility Operations	\$411,400	\$400,000	-\$11,400	2.77%
4380	4380-Sub-account Generation Facility Expenses	\$0	\$0	\$0	
4385	4385-Non-Utility Rental Income	\$0	\$0	\$0	
4390	4390-Miscellaneous Non-Operating Income	-\$6,000	-\$6,000	\$0	0.00%
4405	4405-Interest and Dividend Income	-\$32,000	-\$31,000	\$1,000	3.13%
	Total	-\$339,700	-\$292,400	\$47,300	14%

	Specific Service Charges	-\$152,300	-\$124,600	\$27,700	18.19%
	Late Payment Charges	-\$14,300	-\$14,300	\$0	0.00%
	Other Distribution/Operating Revenues	-\$105,400	-\$105,700	-\$300	0.28%
	Other Income or Deductions	-\$67,700	-\$47,800	\$19,900	29.39%
	Total	-\$339,700	-\$292,400	\$47,300	13.92%

Account 4235-Miscellaneous Service Revenues. 2018 shows a reduction of \$27,700 in miscellaneous service revenues over the 2017 Bridge Year. This is due mainly in the reduction of service revenues related to the number of notification letters that can be sent according to the changes implemented by the Ministry of Energy in 2017. CWH anticipates that there will be 1,560 fewer letters sent out in the 2018 then in 2016 or \$23,400. However, CWH is requesting an increase in MicroFit monthly service charge from \$5.40 to \$10.00 per month to cover the cost of the 3rd party meter reading and import to our CIS system. This increase in revenue will equal approximately \$2,200.

3.4.3 PROPOSED SPECIFIC SERVICE CHARGES

CWH is proposing two changes to the current specific services charges. These include the microFIT service charge and the Specific Charge for Access to the Power Pole. CWH incurs a \$10.00 monthly fee per microFIT meter point from CWH's vendor, Utilismart, and would like to pass this charge onto its microFIT customers. This increase in the customer charge from \$5.40 to \$10.00 was also agreed to in St. Thomas Energy Inc. (EB-2014- 0113) Cost of Service Application.¹⁸ CWH is requesting to implement the market rate for access to the power poles effective once the OEB working group has come up with an updated standard rate.

Other than the Microfit class as explained above no other customer class will be materially impacted by the changes requested.¹⁹

3.4.4 REVENUE FROM AFFILIATE TRANSACTIONS, SHARED SERVICES, CORPORATE COST ALLOCATION.²⁰

CWH is wholly owned by the holding company Centre Wellington Energy Inc. which is wholly owned by the Corporation of the Township of Centre Wellington.

Revenues from affiliate transactions is explained in detail in exhibit 4 section 4.5 Shared Services and Corporate allocation. Revenues are posted to account 4375 and expenses are posted to 4380.

¹⁸ MFR - Any new proposed specific service charges, or proposed changes to rates or application of existing specific service charges.

¹⁹ MFR - Distributors must identify any discrete customer groups that may be materially impacted by changes to other rates and charges

²⁰ MFR - Revenue from affiliate transactions, shared services, corporate cost allocation.

1 **APPENDICES**

2

Appendix A	Appendix 2-IB Load Forecast Analysis
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Appendix A

Appendix 2-IB Load Forecast Analysis

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 2018 Cost of Service)		Consumption (kWh) ⁽³⁾			
				Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012		Actual	156500644.5	143496616.9	Board-approved
Historical	2013		Actual	154795353.8	144472247.7	
Historical	2014		Actual	148717979.2	144603820.1	
Historical	2015		Actual	144221924.3	144146024.8	
Historical	2016		Actual	145136098.4	144563750.4	
Bridge Year	2017		Forecast		145032041.8	
Test Year	2018		Forecast		145335432.8	

Variance Analysis	Year	Year-over-year		Versus Board- approved
	2012			
	2013	-1.1%	0.7%	
	2014	-3.9%	0.1%	
	2015	-3.0%	-0.3%	
	2016	0.6%	0.3%	
	2017		0.3%	
	2018		0.2%	
	Geometric Mean		99.0%	

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 2018 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	2012	Actual	5,805	Board-approved	5858	Actual	45,223,786	45,154,493	Board-approved	45809827	Actual	7790.4885	7778.55181
Historical	2013	Actual	5,912			Actual	46,477,809	45,782,444			Actual	7862.27	7744.64087
Historical	2014	Actual	5,947			Actual	46,177,614	45,855,881			Actual	7765.5115	7711.40694
Historical	2015	Actual	5,961			Actual	45,098,159	45,491,150			Actual	7565.5358	7631.46283
Historical	2016	Actual	5,989			Actual	44,914,361	45,102,914			Actual	7500.102	7531.58785
Bridge Year	2017	Forecast	6,047			Forecast		45,507,125			Forecast	0	7524.98962
Test Year	2018	Forecast	6,107			Forecast		45,602,321			Forecast	0	7467.20391

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
	2012			2012				2012			
	2013	1.8%		2013	2.8%	1.4%		2013	0.9%	-0.4%	
	2014	0.6%		2014	-0.6%	0.2%		2014	-1.2%	-0.4%	
	2015	0.2%		2015	-2.3%	-0.8%		2015	-2.6%	-1.0%	
	2016	0.5%		2016	-0.4%	-0.9%		2016	-0.9%	-1.3%	
	2017	1.0%		2017		0.9%		2017		-0.1%	
	2018	1.0%	4.3%	2018		0.2%	-0.5%	2018		-0.8%	-4.5%
	Geometric Mean	0.7%	1.0%	Geometric Mean	99.2%		-0.1%	Geometric Mean	103.3%		-1.1%

	Calendar Year (for 2018 Cost of Service)	Revenues			
Historical	2012	Actual	\$ 1,541,112	Board-approved	1711242.7
Historical	2013	Actual	\$ 1,730,720		
Historical	2014	Actual	\$ 1,756,892		
Historical	2015	Actual	\$ 1,767,441		
Historical	2016	Actual	\$ 1,808,497		
Bridge Year (Forecast)	2017	Forecast	\$ 1,862,166		
Test Year (Forecast)	2018	Forecast	\$ 2,092,149		

Variance Analysis	Year	Year-over-year	Test Year Versus Board- approved
	2012		
	2013	12.3%	
	2014	1.5%	
	2015	0.6%	
	2016	2.3%	
	2017	3.0%	
	2018	12.4%	
	Geometric Mean	3.1%	5.2%

2 Customer Class: **GS < 50 kW**

Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

kWh

	Calendar Year (for 2018 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	2012	Actual	708	Board-approved	738	Actual	20,304,130	20,273,020	20,408,044	Actual	28698.417	28654.4447
Historical	2013	Actual	711			Actual	20,342,402	20,038,055		Actual	28610.973	28182.9183
Historical	2014	Actual	715			Actual	20,579,869	20,436,483		Actual	28783.034	28582.4939
Historical	2015	Actual	730			Actual	21,387,560	21,573,934		Actual	29298.027	29553.334
Historical	2016	Actual	742			Actual	23,270,825	23,368,517		Actual	31383.446	31515.1951
Bridge Year	2017	Forecast	750			Forecast		20,960,879		Forecast	0	27956.2016
Test Year	2018	Forecast	758			Forecast		21,004,726		Forecast	0	27705.4717

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
	2012			2012				2012			
	2013	0.5%		2013	0.2%	-1.2%		2013	-0.3%	-1.6%	
	2014	0.6%		2014	1.2%	2.0%		2014	0.6%	1.4%	
	2015	2.1%		2015	3.9%	5.6%		2015	1.8%	3.4%	
	2016	1.6%		2016	8.8%	8.3%		2016	7.1%	6.6%	
	2017	1.1%		2017		-10.3%		2017		-11.3%	
	2018	1.1%	2.7%	2018		0.2%	2.9%	2018		-0.9%	0.2%
	Geometric Mean	1.0%	0.7%	Geometric Mean	97.2%		0.7%	Geometric Mean	102.7%		0.0%

	Calendar Year (for 2018 Cost of Service)	Revenues			
Historical	2012	Actual	\$ 379,634	Board-approved	\$ 523,126
Historical	2013	Actual	\$ 517,097		
Historical	2014	Actual	\$ 529,666		
Historical	2015	Actual	\$ 554,178		
Historical	2016	Actual	\$ 601,535		
Bridge Year (Forecast)	2017	Forecast	\$ 568,409		
Test Year (Forecast)	2018	Forecast	\$ 643,586		

Variance Analysis	Year	Year-over-year	Test Year Versus Board- approved
	2012		
	2013	36.2%	
	2014	2.4%	
	2015	4.6%	
	2016	8.5%	
	2017	-5.5%	
	2018	13.2%	
	Geometric Mean	#NUM!	5.3%

3 Customer Class: **GS > 50-2999 kW**

Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

kW

	Calendar Year (for 2018 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾			Consumption (kWh) per Customer		
		Actual			Actual (Weather actual)	Weather- normalized	Weather- normalized	Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	60	Board-approved	Actual	63,286,610	63,189,641	Actual	1063640.5	1062010.77
Historical	2013	Actual	57		Actual	60,663,507	59,755,907	Actual	1064272.1	1048349.25
Historical	2014	Actual	57		Actual	55,013,692	54,630,396	Actual	973693.66	966909.662
Historical	2015	Actual	52		Actual	52,447,595	52,904,630	Actual	1008607.6	1017396.73
Historical	2016	Actual	48		Actual	50,553,990	50,766,218	Actual	1064294.5	1068762.49
Bridge Year	2017	Forecast	46		Forecast		60,321,817	Forecast	0	1299207.33
Test Year	2018	Forecast	45		Forecast		60,448,004	Forecast	0	1331936.94

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
	2012			2012			2012		
	2013	-4.2%		2013	-4.1%	-5.4%	2013	0.1%	-1.3%
	2014	-0.9%		2014	-9.3%	-8.6%	2014	-8.5%	-7.8%
	2015	-8.0%		2015	-4.7%	-3.2%	2015	3.6%	5.2%
	2016	-8.7%		2016	-3.6%	-4.0%	2016	5.5%	5.0%
	2017	-2.3%		2017		18.8%	2017		21.6%
	2018	-2.3%	-26.8%	2018		0.2%	2018		2.5%
	Geometric Mean	#NUM!	-7.5%	Geometric Mean		103.6%	Geometric Mean		83.4%
									34.7%
									7.7%

	Calendar Year (for 2018 Cost of Service)	Revenues			Demand (kW)			Demand (kW) per Customer		
		Actual			Actual (Weather actual)	Weather- normalized	Weather- normalized	Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	\$ 554,183	Board-approved	Actual	164,084	164,084	Actual	0.2960822	0.29608216
Historical	2013	Actual	\$ 687,291		Actual	165,373	165,373	Actual	0.2406162	0.24061619
Historical	2014	Actual	\$ 657,544		Actual	154,260	154,260	Actual	0.2345998	0.23459976
Historical	2015	Actual	\$ 637,253		Actual	148,977	148,977	Actual	0.2337803	0.23378033
Historical	2016	Actual	\$ 626,609		Actual	145,124	145,124	Actual	0.2316024	0.2316024
Bridge Year (Forecast)	2017	Forecast	\$ 697,312		Forecast		163,126	Forecast	0	0.23393566
Test Year (Forecast)	2018	Forecast	\$ 724,272		Forecast		163,467	Forecast	0	0.2256989

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
	2012			2012			2012		
	2013	24.0%		2013	0.8%	0.8%	2013	-18.7%	-18.7%
	2014	-4.3%		2014	-6.7%	-6.7%	2014	-2.5%	-2.5%
	2015	-3.1%		2015	-3.4%	-3.4%	2015	-0.3%	-0.3%
	2016	-1.7%		2016	-2.6%	-2.6%	2016	-0.9%	-0.9%
	2017	11.3%		2017		12.4%	2017		1.0%
	2018	3.9%	8.1%	2018		0.2%	2018		-3.5%
	Geometric Mean	#NUM!	2.0%	Geometric Mean		#NUM!	Geometric Mean		124.3%
									-4.1%
									-1.0%

4 Customer Class: **GS > 3000-5000 kW**

Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

kW

	Calendar Year (for 2018 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾			Consumption (kWh) per Customer		
		Actual			Actual (Weather actual)	Weather- normalized	Weather- normalized	Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	1	Board-approved	Actual	18,104,644	19,919,756	Actual	18104644	19919755.7
Historical	2013	Actual	1		Actual	19,950,324	18,330,573	Actual	19950324	18330573
Historical	2014	Actual	1		Actual	18,608,986	18,333,194	Actual	18608986	18333194.2
Historical	2015	Actual	1		Actual	18,461,823	17,446,328	Actual	18461823	17446328.1
Historical	2016	Actual	1		Actual	17,295,612	18,421,962	Actual	17295612	18421962.1
Bridge Year	2017	Forecast	1		Forecast		18,961,919	Forecast	0	18961919.5
Test Year	2018	Forecast	1		Forecast		19,001,586	Forecast	0	19001585.7

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
	2012			2012			2012		
	2013	0.0%		2013	10.2%	-8.0%	2013	10.2%	-8.0%
	2014	0.0%		2014	-6.7%	0.0%	2014	-6.7%	0.0%
	2015	0.0%		2015	-0.8%	-4.8%	2015	-0.8%	-4.8%
	2016	0.0%		2016	-6.3%	5.6%	2016	-6.3%	5.6%
	2017	0.0%		2017		2.9%	2017		2.9%
	2018	0.0%	0.0%	2018		0.2%	2018		0.2%
	Geometric Mean	#NUM!	0.0%	Geometric Mean		103.8%	Geometric Mean		103.8%
						2.9%			2.9%

	Calendar Year (for 2018 Cost of Service)	Revenues			Demand (kW)			Demand (kW) per Customer		
		Actual			Actual (Weather actual)	Weather- normalized	Weather- normalized	Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	\$ 102,396	Board-approved	Actual	45,270	45,270	Actual	0.4421028	0.4421028
Historical	2013	Actual	125,732		Actual	42,815	42,815	Actual	0.3405287	0.34052868
Historical	2014	Actual	128,748		Actual	43,264	43,264	Actual	0.3360326	0.33603261
Historical	2015	Actual	125,250		Actual	41,433	41,433	Actual	0.3307981	0.33079809
Historical	2016	Actual	133,713		Actual	43,591	43,591	Actual	0.3260053	0.3260053
Bridge Year (Forecast)	2017	Forecast	137,951		Forecast		44,308	Forecast	0	0.32118387
Test Year (Forecast)	2018	Forecast	169,967		Forecast		44,400	Forecast	0	0.26122872

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
	2012			2012			2012		
	2013	22.8%		2013	-5.4%	-5.4%	2013	-23.0%	-23.0%
	2014	2.4%		2014	1.0%	1.0%	2014	-1.3%	-1.3%
	2015	-2.7%		2015	-4.2%	-4.2%	2015	-1.6%	-1.6%
	2016	6.8%		2016	5.2%	5.2%	2016	-1.4%	-1.4%
	2017	3.2%		2017		1.6%	2017		-1.5%
	2018	23.2%	53.3%	2018		0.2%	2018		-18.7%
	Geometric Mean	#NUM!	11.3%	Geometric Mean		#NUM!	Geometric Mean		152.3%
						4.4%			-6.2%

5 Customer Class: **Unmetered Scattered Load**

Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

kWh

	Calendar Year (for 2018 Cost of Service)	Customers				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer		
		Actual				Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	10	Board-approved	10	Actual	515,381	515,381	Board-approved	Actual	54250.632	54250.6316
Historical	2013	Actual	13			Actual	548,400	548,400		Actual	42184.615	42184.6154
Historical	2014	Actual	13			Actual	563,396	563,396		Actual	43338.154	43338.1538
Historical	2015	Actual	13			Actual	563,839	563,839		Actual	43372.231	43372.2308
Historical	2016	Actual	13			Actual	562,067	562,067		Actual	43235.923	43235.9231
Bridge Year	2017	Forecast	16			Forecast		559,426		Forecast	0	34055.3021
Test Year	2018	Forecast	21			Forecast		559,426		Forecast	0	26950.7321

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
	2012			2012			2012		
	2013	36.8%		2013	6.4%	6.4%	2013	-22.2%	-22.2%
	2014	0.0%		2014	2.7%	2.7%	2014	2.7%	2.7%
	2015	0.0%		2015	0.1%	0.1%	2015	0.1%	0.1%
	2016	0.0%		2016	-0.3%	-0.3%	2016	-0.3%	-0.3%
	2017	26.4%		2017	-0.5%	-0.5%	2017	-21.2%	-21.2%
	2018	26.4%	107.6%	2018	0.0%	-7.4%	2018	-20.9%	-55.4%
	Geometric Mean	#NUM!	20.0%	Geometric Mean	93.7%	-1.9%	Geometric Mean	175.0%	-18.3%

	Calendar Year (for 2018 Cost of Service)	Revenues			
		Actual			
Historical	2012	Actual	\$ 14,945	Board-approved	\$7,006
Historical	2013	Actual	\$ 6,664		
Historical	2014	Actual	\$ 6,889		
Historical	2015	Actual	\$ 6,964		
Historical	2016	Actual	\$ 7,076		
Bridge Year (Forecast)	2017	Forecast	\$ 7,177		
Test Year (Forecast)	2018	Forecast	\$ 8,063		

Variance Analysis	Year	Year-over-year	Test Year Versus Board- approved
	2012		
	2013	-55.4%	
	2014	3.4%	
	2015	1.1%	
	2016	1.6%	
	2017	1.4%	
	2018	12.3%	15.1%
	Geometric Mean	#NUM!	3.6%

6 Customer Class: **Sentinel Lights**

Is the customer class billed on consumption (kWh) or demand (kW or kVA)?

kW

	Calendar Year (for 2018 Cost of Service)	Customers				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer		
		Actual				Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	29	Board-approved	31	Actual	41,226	41,226	Board-approved	Actual	1421.5862	1421.58621
Historical	2013	Actual	31			Actual	40,676	40,676		Actual	1312.129	1312.12903
Historical	2014	Actual	31			Actual	39,277	39,277		Actual	1267	1267
Historical	2015	Actual	31			Actual	39,278	39,278		Actual	1267.0323	1267.03226
Historical	2016	Actual	29			Actual	39,314	39,314		Actual	1355.6552	1355.65517
Bridge Year	2017	Forecast	29			Forecast		39,336		Forecast	0	1367.76363
Test Year	2018	Forecast	29			Forecast		39,009		Forecast	0	1367.76363

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
	2012			2012			2012		
	2013	6.9%		2013	-1.3%	-1.3%	2013	-7.7%	-7.7%

	2014	0.0%		2014	-3.4%	-3.4%		2014	-3.4%	-3.4%	
	2015	0.0%		2015	0.0%	0.0%		2015	0.0%	0.0%	
	2016	-6.5%		2016	0.1%	0.1%		2016	7.0%	7.0%	
	2017	-0.8%		2017	0.1%	0.1%		2017	0.9%	0.9%	
	2018	-0.8%	-8.0%	2018	-0.8%	-0.8%	4.1%	2018	0.0%	0.0%	13.2%
	Geometric Mean	#NUM!	-2.1%	Geometric Mean		104.5%	1.0%	Geometric Mean	103.1%		3.1%

	Calendar Year (for 2018 Cost of Service)	Revenues				Demand (kW)				Demand (kW) per Customer			
		Actual				Actual (Weather actual)	Weather- normalized		Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	\$ 2,943	Board-approved	\$2,885	Actual	114.54	114.54	104	Actual	0.038923	0.03892304	0.036051276
Historical	2013	Actual	\$ 2,991			Actual	112.99	112.99		Actual	0.0377786	0.03777856	
Historical	2014	Actual	\$ 2,984			Actual	109.08	109.08		Actual	0.0365548	0.03655484	
Historical	2015	Actual	\$ 3,023			Actual	109.08	109.08		Actual	0.0360801	0.03608014	
Historical	2016	Actual	\$ 2,965			Actual	109.19	109.19		Actual	0.0368271	0.03682705	
Bridge Year (Forecast)	2017	Forecast	\$ 3,011			Forecast		109.26		Forecast	0	0.03629085	
Test Year (Forecast)	2018	Forecast	\$ 3,439			Forecast		108.36		Forecast	0	0.03150456	

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	
	2012					2012					2012				
	2013					2013	-1.4%	-1.4%			2013	-2.5%	-2.5%		
	2014		-0.2%			2014	-3.5%	-3.5%			2014	-3.2%	-3.2%		
	2015		1.3%			2015	0.0%	0.0%			2015	-1.3%	-1.3%		
	2016		-1.9%			2016	0.1%	0.1%			2016	2.1%	2.1%		
	2017		1.5%			2017		0.1%			2017		-1.5%		
	2018		14.2%	19.2%		2018		-0.8%	4.2%		2018		-13.2%	-12.6%	
	Geometric Mean		#NUM!	4.5%		Geometric Mean		#NUM!	1.0%		Geometric Mean		118.4%	-3.3%	

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

	Calendar Year (for 2018 Cost of Service)	Customers				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer			
		Actual				Actual (Weather actual)	Weather- normalized		Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2012	Actual	1,688	Board-approved	1738	Actual	1,063,521	1,063,521	1,130,191	Actual	630.04799	630.047986	650.2825086
Historical	2013	Actual	1,696			Actual	1,151,811	1,151,811		Actual	679.13384	679.133844	
Historical	2014	Actual	1,705			Actual	1,141,797	1,141,797		Actual	669.67566	669.67566	
Historical	2015	Actual	1,707			Actual	976,129	976,129		Actual	572.00645	572.006446	
Historical	2016	Actual	1,705			Actual	566,049	566,049		Actual	332.09094	332.090936	
Bridge Year	2017	Forecast	1,710			Forecast		568,009		Forecast	0	332.090936	
Test Year	2018	Forecast	1,716			Forecast		569,977		Forecast	0	332.090936	

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	
	2012					2012					2012				
	2013		0.5%			2013	8.3%	8.3%			2013	7.8%	7.8%		
	2014		0.5%			2014	-0.9%	-0.9%			2014	-1.4%	-1.4%		
	2015		0.1%			2015	-14.5%	-14.5%			2015	-14.6%	-14.6%		
	2016		-0.1%			2016	-42.0%	-42.0%			2016	-41.9%	-41.9%		
	2017		0.3%			2017		0.3%			2017		0.0%		
	2018		0.3%	-1.2%		2018		0.3%	-49.6%		2018		0.0%	-48.9%	
	Geometric Mean		#NUM!	-0.3%		Geometric Mean		164.7%	-15.7%		Geometric Mean		166.9%	-15.5%	

	Calendar Year (for 2018 Cost of Service)	Revenues			
		Actual			
Historical	2012	Actual	\$ 158,518	Board-approved	\$65,670
Historical	2013	Actual	\$ 64,858		
Historical	2014	Actual	\$ 65,853		
Historical	2015	Actual	\$ 62,854		
Historical	2016	Actual	\$ 53,124		
Bridge Year (Forecast)	2017	Forecast	\$ 54,138		

Test Year (Forecast)	2018	Forecast	\$ 65,841
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Variance Analysis	Year	Year-over-year	Test Year Versus Board-approved
	2012		
	2013	-59.1%	
	2014	1.5%	
	2015	-4.6%	
	2016	-15.5%	
	2017	1.9%	
	2018	21.6%	0.3%
	Geometric Mean	#NUM!	0.1%

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

	Calendar Year (for 2018 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾			Consumption (kWh) per Customer		
		Actual	Weather-normalized	Board-approved	Actual (Weather actual)	Weather-normalized	Weather-normalized	Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	2012	Actual			Actual			Actual		
Historical	2013	Actual			Actual			Actual		
Historical	2014	Actual			Actual			Actual		
Historical	2015	Actual			Actual			Actual		
Historical	2016	Actual			Actual			Actual		
Bridge Year	2017	Forecast			Forecast			Forecast		
Test Year	2018	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
	2012			2012			2012		
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2018 Cost of Service)	Revenues			Demand (kWh) ⁽³⁾			Demand (kWh) per Customer		
		Actual	Weather-normalized	Board-approved	Actual (Weather actual)	Weather-normalized	Weather-normalized	Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	2012	Actual			Actual			Actual		
Historical	2013	Actual			Actual			Actual		
Historical	2014	Actual			Actual			Actual		
Historical	2015	Actual			Actual			Actual		
Historical	2016	Actual			Actual			Actual		
Bridge Year (Forecast)	2017	Forecast			Forecast			Forecast		
Test Year (Forecast)	2018	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
	2012			2012			2012		
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	Geometric Mean			Geometric Mean			Geometric Mean		

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

	Calendar Year (for 2018 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾			Consumption (kWh) per Customer		
		Actual	Weather-normalized	Board-approved	Actual (Weather actual)	Weather-normalized	Weather-normalized	Actual (Weather actual)	Weather-normalized	Weather-normalized

Historical	2012	Actual		Board-approved		Actual		Board-approved		Actual		Board-approved
Historical	2013	Actual				Actual				Actual		
Historical	2014	Actual				Actual				Actual		
Historical	2015	Actual				Actual				Actual		
Historical	2016	Actual				Actual				Actual		
Bridge Year	2017	Forecast				Forecast				Forecast		
Test Year	2018	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
	2012			2012			2012		
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2018 Cost of Service)	Revenues					Actual (Weather actual)	Weather-normalized	Weather-normalized		Demand (I) per Customer			
		Actual		Board-approved							Actual (Weather actual)	Weather-normalized	Board-approved	Weather-normalized
Historical	2012	Actual				Actual					Actual			
Historical	2013	Actual				Actual					Actual			
Historical	2014	Actual				Actual					Actual			
Historical	2015	Actual				Actual					Actual			
Historical	2016	Actual				Actual					Actual			
Bridge Year (Forecast)	2017	Forecast				Forecast					Forecast			
Test Year (Forecast)	2018	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
	2012			2012			2012		
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	Geometric Mean			Geometric Mean			Geometric Mean		

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

	Calendar Year (for 2018 Cost of Service)	Customers					Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer		
		Actual		Board-approved			Actual (Weather actual)	Weather-normalized	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	2012	Actual				Actual					Actual		
Historical	2013	Actual				Actual					Actual		
Historical	2014	Actual				Actual					Actual		
Historical	2015	Actual				Actual					Actual		
Historical	2016	Actual				Actual					Actual		
Bridge Year	2017	Forecast				Forecast					Forecast		
Test Year	2018	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
	2012			2012			2012		
	2013			2013			2013		
	2014			2014			2014		
	2015			2015			2015		
	2016			2016			2016		
	2017			2017			2017		
	2018			2018			2018		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2018 Cost of Service)	Revenues			
Historical	2012	Actual		Board-approved	
Historical	2013	Actual			
Historical	2014	Actual			
Historical	2015	Actual			
Historical	2016	Actual			
Bridge Year (Forecast)	2017	Forecast			
Test Year (Forecast)	2018	Forecast			

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

Demand () per Customer				
	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
	2012		
	2013		
	2014		
	2015		
	2016		
	2017		
	2018		
	Geometric Mean		

Year	Year-over-year	Test Year Versus Board- approved
2012		
2013		
2014		
2015		
2016		
2017		
2018		
Geometric Mean		

Year	Year-over-year	Test Year Versus Board- approved
2012		
2013		
2014		
2015		
2016		
2017		
2018		
Geometric Mean		

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