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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**

| Customer Class Name           | Test Year Projected Revenue from Existing Variable Charges |     |                   |                        |                           |                           |                           |                       |
|-------------------------------|--|-----|-------------------|------------------------|---------------------------|---------------------------|---------------------------|-----------------------|
|                               | Variable Distribution Rate                                 | per | Test Year Volume  | Gross Variable Revenue | Transform. Allowance Rate | Transform. Allowance kW's | Transform. Allowance \$'s | Net Variable Revenue  |
| Residential                   | \$0.0074   | 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           |
| <b>Total Variable Revenue</b> |  |     | <b>66,067,354</b> | <b>\$1,470,326.25</b>  |                           | <b>133977.57</b>          | <b>-\$80,386.54</b>       | <b>\$1,389,939.71</b> |

**2017 Rates at 2018 Load**

| Customer Class Name           | Test Year Projected Revenue from Proposed Fixed Charges (I think this should be Existing) |                         |                       |                       |                       |                 |                    |                 |
|-------------------------------|---|-------------------------|-----------------------|-----------------------|-----------------------|-----------------|--------------------|-----------------|
|                               | 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%           |
| <b>Total Fixed Revenue</b>    |   | <b>8,669</b>            | <b>\$1,851,559.99</b> | <b>\$1,389,939.71</b> | <b>\$3,241,499.71</b> |                 |                    |                 |

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.<sup>1</sup>

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

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

1 3.1.3 PROPOSED LOAD FORECAST<sup>2</sup>

2 The following section of the application covers the approach taken to determine the Load  
3 Forecast. This section also covers economic assumptions and data sources for customer and  
4 load forecasts. It explains wholesale purchases and subsequent adjustments to the wholesale  
5 purchases. It also provides the rationale behind each variable used in the regression analysis.  
6 Lastly, it presents the regression results and explains how they were used to determine the  
7 forecast for the bridge and test year.

8 Table 2 below presents the actual and forecast trends for customer/connection counts, kWh  
9 consumption and billed kW demand. The forecast trend is what CWH has based its proposed  
10 rates on.

11

---

<sup>2</sup> 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**

| <b>Weather Adjusted Load Forecast Results</b> |           |             |             |             |             |             |             |                         |
|---|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------------|
|   | 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                 |
|   | kW        |             |             |             |             |             |             | -                       |
| 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 DETAIL<sup>3</sup>

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.<sup>4</sup>

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.

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<sup>3</sup> MFR - Explanation of weather normalization methodology

<sup>4</sup> 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:

$$5 Y=A+B_1X_1+B_2X_2\dots+b_Nx_N + E$$

6 Where:

7 Y = Predicted depended variable value

8 A = the value of Y when all Xs 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            $R^2 = \text{Squared}$

2   The adjusted R-squared is calculated by “correcting” for the number of independent variables in  
3   a multiple regression analysis. The formula:  $\text{Adj RSq} = (1 - (1 - \text{RSq}) * ((n - 1) / (n - k)))$ . 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    $\text{F-statistic} = (\text{R Squared} / (k - 1)) / (1 - \text{R Squared}) / (n - k)$

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. <sup>5</sup>

---

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

1 **3.1.6 OVERVIEW OF WHOLESAL PURCHASES**

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

3 The following table outlines the unadjusted monthly wholesale purchases:

4 **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 |

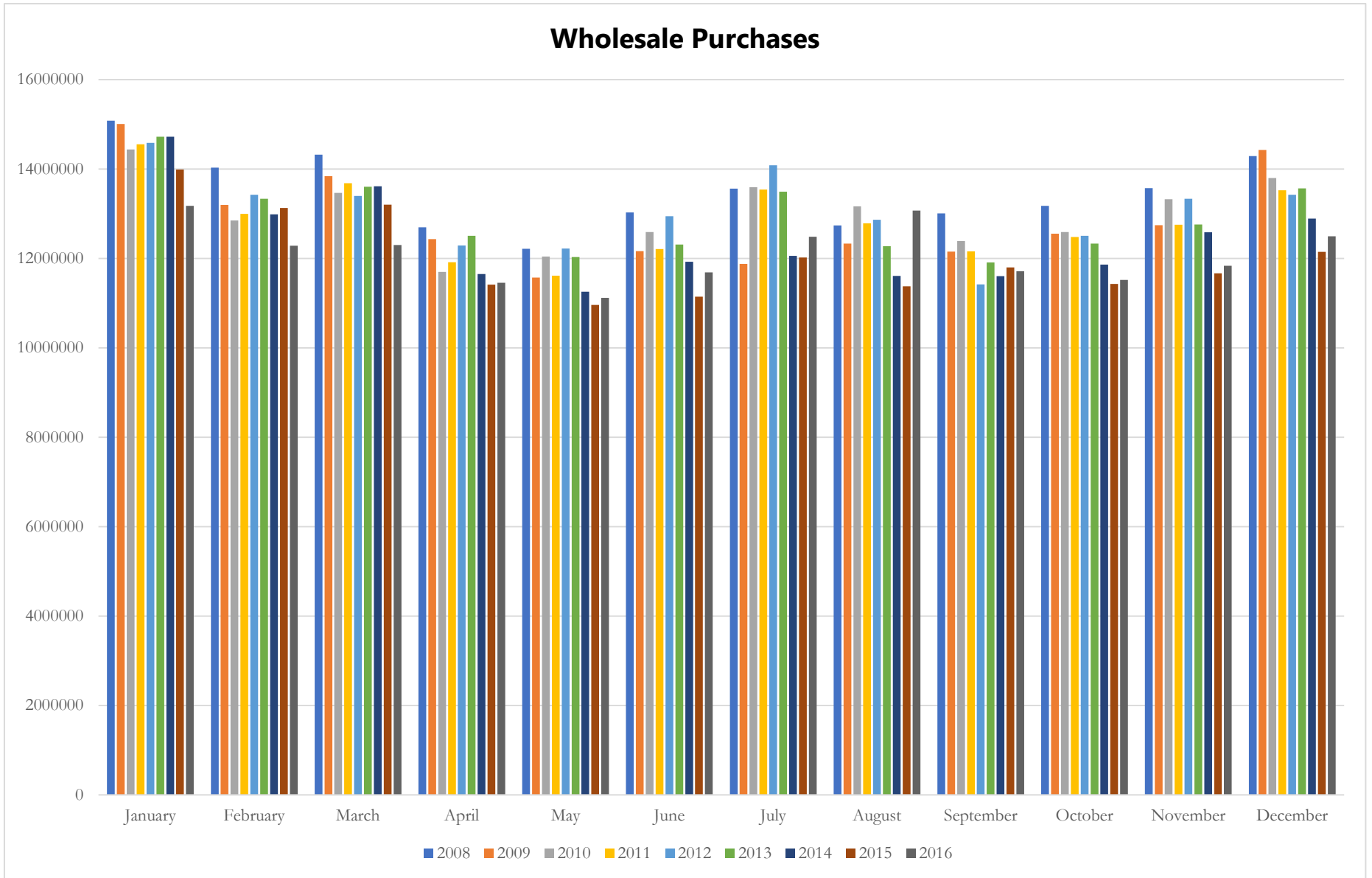
5

6 The CWH's load has decreased by 10.25% from 2008 to 2016. The lowest year consumption was

7 in 2015 while the largest consumption was in 2008. Since the number of customers has only

8 moderately increased over the past 5 years, the assumption is that the effects of energy efficient

9 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.

1 3.1.8 REGRESSION RESULTS

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

3

**Table 6: Correlation/Regression Results**

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

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

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

| <b>Actual Wholesale vs Post Adjustment Wholesale</b> |                      |                       |                 |                       |                       |  |
|--|----------------------|-----------------------|-----------------|-----------------------|-----------------------|--|
| <b>Year</b>  | <b>kWh Purchased</b> | <b>year over year</b> | <b>Adjusted</b> | <b>year over year</b> | <b>Purch. VS Adj.</b> |  |
| 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%                |  |

6  
 7 Once CWH calculated its preferred Regression Results, the Load Forecast model then uses the  
 8 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.

1

**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         |

1

**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       |

2

3 **3.1.9 DETERMINATION OF CUSTOMER FORECAST**

4 CWH has used a simple geometric mean function to determine the forecasted number of  
 5 customers of 2017 and 2018. The geometric mean is more appropriate to use when dealing with  
 6 percentages and rates of change. Although the formula is somewhat simplistic, it is reasonably  
 7 representative of CWH’s natural customer growth. The geometric mean results were analyzed  
 8 by CWH and then further adjusted for known particulars. Historic customer counts and  
 9 projected customer counts for 2017 and 2018 are presented in Table 12 below. A variance  
 10 analysis of customer counts and projections is presented at 3.3.1. CWH used an average  
 11 customer count as a base for its calculations.<sup>6</sup>

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<sup>6</sup> 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

1 3.1.10 DETERMINATION OF FORECAST

2 Allocation to specific weather sensitive rate classes (Residential, GS<50, GS>50) is based on the  
3 share (%) of each classes' actual retail kWh (exclusive of distribution losses) in the actual  
4 wholesale kWh. Weather normalized wholesale kWh, for historical years, are allocated to these  
5 classes based on these historical shares. Forecast values for 2017 and 2018 are allocated based  
6 on the average historical actual shares. For those rate classes that use kW consumption as a  
7 billing determinant, sales forecast for these customer classes are then converted to kW based on  
8 the historical volumetric relationship between kWh and kW.<sup>7</sup>

9

10 3.1.11 LOAD FORECAST BY CLASS.

11 The following section presents class specific adjusted historic and forecast values for those  
12 classes that have weather sensitive load. Historic class specific kWh consumption is allocated  
13 based on each class' share in wholesale kWh, exclusive of distribution losses. Forecast class  
14 values are allocated based on the class average historical share for 2008-2016, except USL class  
15 using the average kwh per connection for 2013-2016, and Street Light class using year 2016  
16 kWh per connection.

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

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

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

| <b>Year</b> | <b>Residential Actual kWh</b> | <b>Total Actual Wholesale</b> | <b>Ratio%</b> | <b>Adjusted Wholesale</b> | <b>Residential Weather Normal</b> | <b>Per customer</b> |
|-------------|-------------------------------|-------------------------------|---------------|---------------------------|-----------------------------------|---------------------|
| 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               |
|             |                               |                               |               |                           |                                   |                     |

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

| <b>Year</b> | <b>Actual kWh</b> | <b>Total Wholesale</b> | <b>Ratio%</b> | <b>Adjusted Wholesale</b> | <b>Weather Normal</b> | <b>Per customer</b> |
|-------------|-------------------|------------------------|---------------|---------------------------|-----------------------|---------------------|
| 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              |
|             |                   |                        |               |                           |                       |                     |

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

| <b>Year</b> | <b>Actual kWh</b> | <b>Total Wholesale</b> | <b>Ratio%</b> | <b>Adjusted Wholesale</b> | <b>Weather Normal</b> | <b>Per customer</b> |
|-------------|-------------------|------------------------|---------------|---------------------------|-----------------------|---------------------|
| 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           |
|             |                   |                        |               |                           |                       |                     |

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

| <b>Year</b> | <b>Actual kWh</b> | <b>Total Wholesale</b> | <b>Ratio%</b> | <b>Adjusted Wholesale</b> | <b>Weather Normal</b> | <b>Per customer</b> |
|-------------|-------------------|------------------------|---------------|---------------------------|-----------------------|---------------------|
| 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          |
|             |                   |                        |               |                           |                       |                     |

4

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)**

| <b>Year</b> | <b>kWh</b> | <b>kW</b> | <b>Connection</b> | <b>kWh per connection</b> | <b>KW per connection</b> | <b>KW/kWh Ratio</b> |
|-------------|------------|-----------|-------------------|---------------------------|--------------------------|---------------------|
| 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             |
|             |            |           |                   |                           |                          |                     |
|             |            |           |                   |                           |                          |                     |

2

1 3.1.12 FINAL NORMALIZED LOAD FORECAST

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

4 **Table 22: Final Load Forecast (not CDM adjusted)**

|   | Year      | 2017               | 2018               | Share   | Target<br>Manual Adj<br>for 2018<br>CDM | Final<br>Adjusted<br>(kWh) |
|---|-----------|--------------------|--------------------|---------|---|----------------------------|
| <b>Residential</b>                          | Cust/Conn | 6,047              | 6,107              |         |   | 6,107                      |
|   | kWh       | 45,507,125         | 45,602,321         | 30.97%  | 885,745                                 | 44,716,576                 |
|   | kW        |                    |                    |         |   |                            |
| <b>General Service &lt; 50 kW</b>           | Cust/Conn | 750                | 758                |         |   | 758                        |
|   | kWh       | 20,960,879         | 21,004,726         | 14.27%  | 407,980                                 | 20,596,746                 |
|   | kW        |                    |                    |         |   |                            |
| <b>General Service &gt; 50 to 2999 kW</b>   | 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                    |
| <b>General Service &gt; 3000 to 4999 kW</b> | 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                     |
| <b>USL</b>                                  | Cust/Conn | 13                 | 13                 |         |   | 13                         |
|   | kWh       | 559,426            | 559,426            | 0.38%   | 10,866                                  | 548,560                    |
|   |           |                    |                    |         |   | -                          |
| <b>Sentinel</b>                             | Cust/Conn | 29                 | 29                 |         |   | 29                         |
|   | kWh       | 39,336             | 39,009             | 0.03%   | 758                                     | 38,252                     |
|   | kW        | 109                | 108                |         |   | 106                        |
| <b>Street Lighting</b>                      | 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                      |
| <b>Total</b>                                | Cust/Conn | <b>8,597</b>       | <b>8,669</b>       |         |   | <b>8,669</b>               |
|   | kWh       | <b>146,918,511</b> | <b>147,225,049</b> |         |   | <b>144,365,460</b>         |
|   | kW        | <b>209,104</b>     | <b>209,542</b>     | 100.00% | <b>2,859,588</b>                        | <b>205,472</b>             |

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6

1 **3.2 IMPACT AND PERSISTENCE FROM HISTORICAL CDM PROGRAMS**

2 3.2.1 LOAD FORECAST CDM ADJUSTMENT WORK FORM

3 While the forecast as presented in the previous section assumes some level of embedded  
4 “natural conservation”, it does not take into account the impacts on energy purchases arising  
5 from CDM programs undertaken by CWH’s customers. The load forecast is a projection of the  
6 expected level of electricity purchases that would occur over the specified period in the absence  
7 of any CDM initiatives. Therefore, in accordance with the filing requirements, the forecasted  
8 energy purchases are further adjusted to reflect CDM reductions.<sup>8</sup>

9

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

---

<sup>8</sup> 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.

1

**Table 23: Appendix 2-I<sup>9</sup>**

| 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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<sup>9</sup> MFR - Completed Appendix 2-I

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| <b>Weight Factor for Inclusion in CDM Adjustment to 2014 Load Forecast</b>     |             |             |             |             |                  |                  |                  |                  |   |
|--|-------------|-------------|-------------|-------------|------------------|------------------|------------------|------------------|---|
|  | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b>      | <b>2016</b>      | <b>2017</b>      | <b>2018</b>      |   |
| <b>Weight Factor for each year's CDM program impact on 2014 load forecast</b>  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0.5</b>       | <b>1</b>         | <b>0.5</b>       | Distributor can select "0", "0.5", or "1" from drop-down list |
| <b>Default Value selection rationale.</b>                                      |             |             |             |             |                  |                  |                  |                  |   |
| <b>2011-2014 and 2015-2020 LRAMVA and 2015 CDM adjustment to Load Forecast</b> |             |             |             |             |                  |                  |                  |                  |   |
|  | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b>      | <b>2016</b>      | <b>2017</b>      | <b>2018</b>      | <b>Total for 2018</b>   |
|  | <b>kWh</b>  |             |             |             |                  |                  |                  |                  |   |
| Amount used for CDM threshold for LRAMVA (2014)                                | -           | -           |             |             | 1,720,706.0<br>0 |                  |                  |                  | 1,720,706.00  |
| 2011 CDM adjustment (per Board Decision in 2011 Cost of Service Application)   | -           | -           | -           | -           |                  | -                |                  |                  |   |
| Amount used for CDM threshold for LRAMVA (2015)                                |             |             |             |             |                  | 1,429,794.2<br>0 | 1,429,794.2<br>0 | 1,429,794.2<br>0 | 4,289,382.60  |
| Manual Adjustment for 2018 Load Forecast (billed basis)                        | -           |             |             |             | -                | 714,897.10       | 1,429,794.2<br>0 | 714,897.10       | 2,859,588.40  |



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

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

6

### 7 3.2.2 ALLOCATION OF CDM RESULTS

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

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<sup>10</sup> 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) |
|---|-----------|--------------------|--------------------|---------|---------------------|----------------------|
| <b>Residential</b>                          | Cust/Conn | 6,047              | 6,107              |         |                     |                      |
|   | kWh       | 45,507,125         | 45,602,321         | 30.97%  | 885,745             | 44,716,576           |
|   | kW        |                    |                    |         |                     |                      |
| <b>General Service &lt; 50 kW</b>           | Cust/Conn | 750                | 758                |         |                     |                      |
|   | kWh       | 20,960,879         | 21,004,726         | 14.27%  | 407,980             | 20,596,746           |
|   | kW        |                    |                    |         |                     |                      |
| <b>General Service &gt; 50 to 2999 kW</b>   | 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              |
| <b>General Service &gt; 3000 to 4999 kW</b> | 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               |
| <b>USL</b>                                  | Cust/Conn | 13                 | 13                 |         |                     |                      |
|   | kWh       | 559,426            | 559,426            | 0.38%   | 10,866              | 548,560              |
|   | kW        |                    |                    |         |                     |                      |
| <b>Sentinel</b>                             | Cust/Conn | 29                 | 29                 |         |                     |                      |
|   | kWh       | 39,336             | 39,009             | 0.03%   | 758                 | 38,252               |
|   | kW        | 109                | 108                |         |                     | 106                  |
| <b>Street Lighting</b>                      | Cust/Conn | 1,710              | 1,716              |         |                     |                      |
|   | kWh       | 568,009            | 569,977            | 0.39%   | 11,071              | 558,906              |
|   | kW        | 1,561              | 1,566              |         |                     | 1,536                |
| <b>Total</b>                                | Cust/Conn | <b>8,597</b>       | <b>8,669</b>       |         |                     | -                    |
|   | kWh       | <b>146,918,511</b> | <b>147,225,049</b> |         |                     | <b>144,365,460</b>   |
|   | kW        | <b>209,104</b>     | <b>209,542</b>     | 100.00% | <b>2,859,588.40</b> | <b>205,472</b>       |

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

3 LRAMVA (2018).<sup>11</sup>

<sup>11</sup> 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) <sup>(3)</sup> |                    |                               | 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            |                               |                |                    |
| Historical             | 2013          | 8421                    |                               | 154,795,354                      | 144,472,248        |                               | 211,476            | 211,476            |                               | \$3,161,645.73 |                    |
| Historical             | 2014          | 8468                    | Board-approved <sup>(2)</sup> | 148,717,979                      | 144,603,820        | Board-approved <sup>(2)</sup> | 200,783            | 200,783            | Board-approved <sup>(2)</sup> | \$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     |

2

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.

1

**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 FORECAST<sup>12</sup>**

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.<sup>13</sup>

**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.

<sup>12</sup> 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

<sup>13</sup> MFR - Completed Appendix 2-IB

1 **AMENDED JUNE 14, 2017**

2 As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-year  
 3 (2008-2016) geometric mean function to determine the forecasted number of customers of  
 4 2017 and 2018.

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

7 The increase in customer count from 2016 to 2017 is of 58 and the increase from 2017 to 2018 is  
 8 60.

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

11 **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  |

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



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

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

9 **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  |

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

12 **AMENDED JUNE 14, 2017**

13 *As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-*  
 14 *year (2008-2016) geometric mean function to determine the forecasted number of customers of*  
 15 *2017 and 2018.*

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

3 **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  |

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

8 **AMENDED JUNE 14, 2017**

9 As explained in Section 3.1.9 Determination of Customer Forecast, CWH has used a simple 9-  
 10 year (2008-2016) geometric mean function to determine the forecasted number of customers of  
 11 2017 and 2018.

12 The change in customer count from 2016 to 2017 is 0 and the increase from 2017 to 2018 is also  
 13 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 *natures 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*

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

3

4

**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       |
| <b>TOTAL</b>                  | <b>8,438</b>    | <b>8,669</b>   | <b>231</b> | <b>146,259,161</b> | <b>144,365,460</b> | <b>-1,893,701</b> | <b>198,322</b>  | <b>205,472</b> | <b>7,150</b> |

5

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

12 With respect to consumption, as explained in section 3.1.6, the assumption is that the effects of  
 13 energy efficient changes have contributed to the modest decline in consumption vs the increase  
 14 in customer count.

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**Table 35b – Variances from Last Board Approved**

| <u>Customers or Connections</u> |                 | 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          |
| <b>TOTAL</b>                    | <b>8,438</b>    | <b>8,419</b>           | <b>8,469</b> | <b>8,494</b> | <b>8,524</b> | <b>8,596</b> | <b>8,669</b> |

| <u>Consumption (kWh)</u>      |                    | 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           |
| <b>TOTAL</b>                  | <b>146,259,161</b> | <b>147,926,048</b>     | <b>141,978,484</b> | <b>137,828,055</b> | <b>138,233,652</b> | <b>146,918,511</b> | <b>147,225,049</b> |

| <u>Consumption (kW)</u>       |                 | 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         |
| <b>TOTAL</b>                  | <b>198,322</b>  | <b>211,476</b>         | <b>200,784</b> | <b>193,246</b> | <b>190,380</b> | <b>209,104</b> | <b>209,542</b> |

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**Table 35 Appendix 2-IA**

|                        | Calendar Year<br>(for 2017 Cost of Service) | Customers / Connections |                               | Consumption (kWh) <sup>(3)</sup> |                    |                               | 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 <sup>(2)</sup> | 154,795,354                      | 144,472,248        | Board-approved <sup>(2)</sup> | 211,476            | 211,476            | Board-approved <sup>(2)</sup> | \$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.<sup>14</sup>

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       |

<sup>14</sup> 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 REVENUES<sup>15</sup>

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.

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<sup>15</sup> 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.

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**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             |
| <b>TOTAL</b>    | <b>\$3,090,672.02</b> | <b>\$3,161,645.73</b> | <b>\$70,973.71</b>                     | <b>\$3,148,576.40</b> | <b>-\$13,069.33</b>     | <b>\$3,156,964.30</b> | <b>\$8,387.91</b>       | <b>\$3,233,519.33</b> | <b>\$76,555.03</b>      | <b>\$3,330,163.57</b> | <b>\$96,644.24</b>      | <b>\$3,707,316.83</b> | <b>\$377,153.26</b>     |

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

|                 | <b>2013 Board Approved</b> | <b>2013</b>           | <b>Difference 2013 vs 2013 Board Approved</b> |
|-----------------|----------------------------|-----------------------|---|
| 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                                     |
| <b>TOTAL</b>    | <b>\$3,090,672.02</b>      | <b>\$3,135,353.43</b> | <b>\$44,681.41</b>                            |

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**

|                 | <b>2013</b>           | <b>2014</b>           | <b>Difference 2014 vs 2013</b> |
|-----------------|-----------------------|-----------------------|--------------------------------|
| 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                       |
| <b>TOTAL</b>    | <b>\$3,135,353.43</b> | <b>\$3,148,576.40</b> | <b>\$13,222.97</b>             |

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

6 **Table 40: 2014 Actual VS 2015 Actual**

|                 | <b>2014</b>           | <b>2015</b>           | <b>Difference 2015 vs 2014</b> |
|-----------------|-----------------------|-----------------------|--------------------------------|
| 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                    |
| <b>TOTAL</b>    | <b>\$3,148,576.40</b> | <b>\$3,156,964.30</b> | <b>\$8,387.91</b>              |

7 The total distribution revenue in 2015 of \$3,156,964 was \$8,387.91 or 0.27% more than the 2014  
 8 Actual. The GS<50 class had a slight increase in its number of customers and a small increase  
 9 (4%) in the corresponding consumption. CWH annually reviews the general service customers  
 10 and reclassifies them according to their demand, if required. Therefore, CWH saw an increase in  
 11 GS<50 customers and a decrease in GS 50-2,999 kW.

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**Table 41: 2015 Actual VS 2016 Actual Revenue**

|                 | <b>2015</b>           | <b>2016</b>           | <b>Difference 2016 vs 2015</b> |
|-----------------|-----------------------|-----------------------|--------------------------------|
| 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                    |
| <b>TOTAL</b>    | <b>\$3,156,964.30</b> | <b>\$3,233,519.33</b> | <b>\$76,555.03</b>             |

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**

|                 | <b>2016</b>           | <b>2017</b>           | <b>Difference 2017 vs 2016</b> |
|-----------------|-----------------------|-----------------------|--------------------------------|
| 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                     |
| <b>TOTAL</b>    | <b>\$3,233,519.33</b> | <b>\$3,330,163.57</b> | <b>\$96,644.24</b>             |

9

1 The total distribution revenue in 2017 is forecast to be \$3,330,163, which will be \$96,644, or  
 2 2.99% greater than 2016. Similarly, to the previous year CWH is transitioning its residential class  
 3 to be a wholly fixed rate. The residential class is forecast to have an increase in consumption  
 4 and number of customers. The GS<50 class is forecast to have reduced consumption due to  
 5 CDM efforts in this class.

6 **Table 43: 2017 Bridge VS 2018 Test**

|                 | <b>2017</b>           | <b>2018</b>           | <b>Difference 2018 vs 2017</b> |
|-----------------|-----------------------|-----------------------|--------------------------------|
| 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                    |
| <b>TOTAL</b>    | <b>\$3,330,163.57</b> | <b>\$3,707,316.83</b> | <b>\$377,153.26</b>            |

7  
 8 The total distribution revenue in 2018 is forecast to be \$3,707,316.83 which will be \$377,153.26,  
 9 or 11.33% greater than the 2017 Bridge. The main reason for the projected increase is the  
 10 increased distribution rates proposed in this application.

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

13

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%       |
| <b>Total</b>                                    |     | <b>66,067,354</b> |            |                            | <b>8,669</b>            | <b>\$1,851,559.99</b> | <b>-\$69,864.60</b>  | <b>\$1,470,326.25</b> | <b>\$3,321,886.25</b> | <b>100%</b> |

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%       |
| <b>Total</b>                                    |     | <b>66,067,354</b> |            |                            | <b>8,669</b>            | <b>\$2,251,505.22</b> | <b>-\$69,864.60</b>  | <b>\$1,525,676.21</b> | <b>\$3,777,181.43</b> | <b>100%</b> |



## 1 **3.4 OTHER REVENUES**

### 2 **3.4.1 OVERVIEW OF OTHER REVENUE**

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

7 Other Distribution Revenues includes items such as:

- 8 • Specific Service Charges
- 9 • Late Payment Charges
- 10 • Other Distribution Revenues
- 11 • Other Income and Expenses

12 CWH is proposing one change to the Microfit Service Charges as explained in 3.4.3

### 13 **OEB APPENDIX 2-H OTHER OPERATING REVENUES**

14 A detailed breakdown by USoA account is shown in Table 38 - OEB Appendix 2-H presented at  
15 the next page. Year over year variance analysis follow at 3.4.2 - Other Revenue Variance  
16 Analysis.<sup>16 17</sup>

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<sup>16</sup> MFR - Completed Appendix 2-H

<sup>17</sup> MFR - Variance analysis - year over year, historical, bridge and test

**Table 46: Appendix 2-H**

|      | USoA Description   | 2013<br>Board Approved | 2013            | 2014            | 2015            | 2016            | 2017            | 2018            |
|------|--|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 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 |

1 **3.4.2 OTHER REVENUE VARIANCE ANALYSIS**

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

3 **Table 47: Variance Analysis of Other Operating Revenues**

4 **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%      |
|      | <b>Total</b>   | <b>-\$270,800</b> | <b>-\$309,555</b> | <b>-\$38,755</b> | <b>\$0</b>   |

|  |                                       |                   |                   |                  |               |
|--|---------------------------------------|-------------------|-------------------|------------------|---------------|
|  | 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%        |
|  | <b>Total</b>                          | <b>-\$270,800</b> | <b>-\$309,555</b> | <b>-\$38,755</b> | <b>14.31%</b> |

5 Account 4210-Rent from Electric Property. For 2013 Account 4210 was \$32,100 greater than the  
 6 OEB approved amount of \$45,500. In CWH's 2013 CoS, CWH estimated the revenue from Hydro  
 7 One Networks Rental of space in the Fiber Room for electronic equipment as being \$30,500,  
 8 whereas the final agreement worked out to being \$56,700 or \$26,200 higher than estimated.  
 9 Also in the last quarter of 2013, CWH rented space in the Fiber Room at a monthly charge of  
 10 \$1,580 per month or an additional amount of \$6,300 to a 3rd party vendor, CW  
 11 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.

22

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

|             |  | <b>2013</b> | <b>2014</b> | <b>Var Analysis</b> | <b>Var Analysis</b> |
|-------------|--|-------------|-------------|---------------------|---------------------|
|             |  |             |             | <b>\$</b>           | <b>%</b>            |
|             | <b>USoA Description</b>                                |             |             |                     |                     |
| <b>4235</b> | <b>4235-Miscellaneous Service Revenues</b>             | -\$124,915  | -\$136,713  | -\$11,798           | 9.44%               |
| <b>4225</b> | <b>4225-Late Payment Charges</b>                       | -\$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%             |
|             | <b>Total</b>   | -\$309,555  | -\$357,828  | -\$48,273           | 16%                 |

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

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

9 Account 4360-Loss on Disposition of Utility and Other Property. 2014 Actual Loss on  
10 Disposition is \$46,477, which is greater than 2013 by \$39,943. This increase is partial due to the  
11 de-registration of the meter point in Fergus and the disposal of the stranded asset of \$18,541.  
12 The balance of \$21,402 is due to replacement of poles, UG conductor, OH Conductor and OH  
13 Services that were replaced in 2014 that were not fully depreciated due to the increase in useful  
14 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**

|             |  | 2014       | 2015       | Var Analysis<br>\$ | Var Analysis<br>% |
|-------------|--|------------|------------|--------------------|-------------------|
|             | <b>USoA Description</b>                                |            |            |                    |                   |
| <b>4235</b> | <b>4235-Miscellaneous Service Revenues</b>             | -\$136,713 | -\$152,071 | -\$15,357          | 11.23%            |
| <b>4225</b> | <b>4225-Late Payment Charges</b>                       | -\$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%             |
|             | <b>Total</b>   | -\$357,828 | -\$428,343 | -\$70,515          | 20%               |

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

3

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

10 Account 4360-Loss on Disposition of Utility and Other Property. 2015 disposals were \$9,919 or a  
11 decrease over 2014 of \$36,558, this is due to fewer undepreciated assets being written off. In  
12 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**

|             |  |             |             | <b>Var Analysis</b> | <b>Var Analysis</b> |
|-------------|--|-------------|-------------|---------------------|---------------------|
|             |  | <b>2015</b> | <b>2016</b> | <b>\$</b>           | <b>%</b>            |
|             | <b>USoA Description</b>                                |             |             |                     |                     |
| <b>4235</b> | <b>4235-Miscellaneous Service Revenues</b>             | -\$152,071  | -\$150,907  | \$1,163             | 0.76%               |
| <b>4225</b> | <b>4225-Late Payment Charges</b>                       | -\$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%              |
|             | <b>Total</b>   | -\$428,343  | -\$294,951  | \$133,392           | 31%                 |

|  |  |            |            |           |        |
|--|--|------------|------------|-----------|--------|
|  | <b>Specific Service Charges</b>              | -\$152,071 | -\$150,907 | \$1,163   | 0.76%  |
|  | <b>Late Payment Charges</b>                  | -\$14,252  | -\$12,908  | \$1,344   | 9.43%  |
|  | <b>Other Distribution/Operating Revenues</b> | -\$113,996 | -\$106,401 | \$7,594   | 6.66%  |
|  | <b>Other Income or Deductions</b>            | -\$148,025 | -\$24,733  | \$123,291 | 83.29% |
|  | <b>Total</b>                                 | -\$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.

3 **Table 51: Variance Analysis of Other Operating Revenues**

4 **2016 - 2017**

|      |  | 2016       | 2017       | Var Analysis<br>\$ | Var Analysis<br>% |
|------|--|------------|------------|--------------------|-------------------|
|      | <b>USoA Description</b>                                |            |            |                    |                   |
| 4235 | <b>4235-Miscellaneous Service Revenues</b>             | -\$150,907 | -\$152,300 | -\$1,393           | 0.92%             |
| 4225 | <b>4225-Late Payment Charges</b>                       | -\$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%             |
|      | <b>Total</b>   | -\$294,951 | -\$339,700 | -\$44,749          | 15%               |

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

|             |  | 2017       | 2018       | Var Analysis<br>\$ | Var Analysis<br>% |
|-------------|--|------------|------------|--------------------|-------------------|
|             | <b>USoA Description</b>                                |            |            |                    |                   |
| <b>4235</b> | <b>4235-Miscellaneous Service Revenues</b>             | -\$152,300 | -\$124,600 | \$27,700           | 18.19%            |
| <b>4225</b> | <b>4225-Late Payment Charges</b>                       | -\$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%             |
|             | <b>Total</b>   | -\$339,700 | -\$292,400 | \$47,300           | 14%               |
|             | <b>Specific Service Charges</b>                        | -\$152,300 | -\$124,600 | \$27,700           | 18.19%            |
|             | <b>Late Payment Charges</b>                            | -\$14,300  | -\$14,300  | \$0                | 0.00%             |
|             | <b>Other Distribution/Operating Revenues</b>           | -\$105,400 | -\$105,700 | -\$300             | 0.28%             |
|             | <b>Other Income or Deductions</b>                      | -\$67,700  | -\$47,800  | \$19,900           | 29.39%            |
|             | <b>Total</b>   | -\$339,700 | -\$292,400 | \$47,300           | 13.92%            |

3 Account 4235-Miscellaneous Service Revenues. 2018 shows a reduction of \$27,700 in  
4 miscellaneous service revenues over the 2017 Bridge Year. This is due mainly in the reduction of  
5 service revenues related to the number of notification letters that can be sent according to the  
6 changes implemented by the Ministry of Energy in 2017. CWH anticipates that there will be  
7 1,560 fewer letters sent out in the 2018 then in 2016 or \$23,400. However, CWH is requesting  
8 an increase in MicroFit monthly service charge from \$5.40 to \$10.00 per month to cover the cost  
9 of the 3rd party meter reading and import to our CIS system. This increase in revenue will equal  
10 approximately \$2,200.

11

12

1 3.4.3 PROPOSED SPECIFIC SERVICE CHARGES

2 CWH is proposing two changes to the current specific services charges. These include the  
3 microFIT service charge and the Specific Charge for Access to the Power Pole. CWH incurs a  
4 \$10.00 monthly fee per microFIT meter point from CWH's vendor, Utilismart, and would like to  
5 pass this charge onto its microFIT customers. This increase in the customer charge from \$5.40 to  
6 \$10.00 was also agreed to in St. Thomas Energy Inc. (EB-2014- 0113) Cost of Service  
7 Application.<sup>18</sup> CWH is requesting to implement the market rate for access to the power poles  
8 effective once the OEB working group has come up with an updated standard rate.

9 Other than the Microfit class as explained above no other customer class will be materially  
10 impacted by the changes requested.<sup>19</sup>

11

12 3.4.4 REVENUE FROM AFFILIATE TRANSACTIONS, SHARED SERVICES, CORPORATE  
13 COST ALLOCATION.<sup>20</sup>

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

16 Revenues from affiliate transactions is explained in detail in exhibit 4 section 4.5 Shared Services  
17 and Corporate allocation. Revenues are posted to account 4375 and expenses are posted to  
18 4380.

19

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

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

<sup>20</sup> MFR - Revenue from affiliate transactions, shared services, corporate cost allocation.

