



EXHIBIT 3

REGRESSION AND OTHER REVENUE

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LIST OF ATTACHMENTS

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EXHIBIT 3: REGRESSION AND OTHER REVENUE

2.3 EXHIBIT 3: OPERATING REVENUE

2.3.1 LOAD AND REVENUE FORECASTS

This Exhibit provides the details of Waterloo North Hydro Inc.'s (WNH) Operating Revenue for 2016 Board Approved, 2016 - 2019 Actuals, the 2020 Bridge Year and the 2021 Test Year. This Exhibit also provides a detailed variance analysis by rate classification of the operating revenue components.

Distribution revenue excludes revenue from commodity sales.

WNH is proposing a total Service Revenue Requirement of \$41,548,755 for the 2021 Test Year. This amount includes a Base Revenue Requirement of \$39,298,087 plus Revenue Offsets of \$2,250,668 to be recovered through Other Revenue.

Other Revenue includes Late Payment Charges, Specific Service Charges, Rent from Electric Property, Miscellaneous Service Revenues, Standard Supply Service ("SSS") Administrative Charges and Interest Income. A summary of these Operating Revenues together is presented with a materiality analysis of variances is presented in Table 3-44.

The following Table 3-1 summarizes WNH's total Operating Revenue. Revenue for each of the actual years is from the Annual OEB Filings which are reconciled to WNH's Audited Financial Statements in Exhibit 1, Attachment 1-11. The 2020 Bridge Year is comprised of projection of Distribution Revenue from existing distribution rates and other distribution revenue. The 2021 Test Year Distribution Revenue is provided on the basis of both existing and proposed distribution rates. Revenue for the GS < 50 kW and GS > 50 kW rate classes is net of transformer allowance credits to eligible customers within these rate classes.

1

Table 3-1 Summary of Operating Revenue

Description	2016 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test - Existing Rates	2021 Test - Proposed Rates
Distribution Revenues								
Residential	17,976,876	18,020,359	18,233,438	18,947,598	19,042,091	19,761,902	19,891,127	21,315,456
GS < 50 kW	5,225,595	5,082,529	5,223,258	5,469,187	5,521,922	5,646,605	5,650,852	6,055,336
GS > 50 kW	9,406,347	9,641,250	9,572,272	9,855,084	9,621,964	9,905,561	10,054,729	10,774,523
Large User	780,567	799,702	809,626	800,321	783,530	818,993	806,266	863,967
Unmetered Scattered Load	113,196	109,155	106,640	104,855	106,553	112,439	113,541	120,471
Street Lighting	252,717	252,249	207,078	153,640	154,033	153,401	155,034	166,118
Embedded Distributor	1,430	1,564	1,772	1,746	1,826	2,174	2,174	2,216
Total Distribution Revenue	33,756,728	33,906,808	34,154,084	35,332,431	35,231,919	36,401,075	36,673,723	39,298,087
Other Revenue								
Late Payment Charges	242,900	271,402	149,436	139,850	139,736	144,453	144,453	144,453
Specific Service Charges	355,500	372,400	359,970	403,891	325,427	378,376	382,269	382,269
Other Distribution Revenue	289,683	769,544	886,857	978,532	1,039,055	1,076,983	1,385,932	1,385,932
Other Income and Deductions	179,513	1,241,944	2,720,410	1,382,317	(1,302,291)	190,797	166,002	166,002
SSS Administration Charge	156,000	160,364	160,567	168,054	170,109	170,624	172,012	172,012
Total Other Revenue	1,223,596	2,815,654	4,277,240	3,072,644	372,036	1,961,233	2,250,668	2,250,668
Total Operating Revenue	34,980,324	36,722,462	38,431,324	38,405,075	35,603,955	38,362,308	38,924,391	41,548,755

2 2.3.1.1 MULTIVARIATE REGRESSION MODEL

3

4 The purpose of this evidence is to present the process used by WNH to prepare the
5 weather normalized load and customer/connection forecast used to design the proposed
6 2021 distribution rates. A copy of the Load Forecast model has been filed in live Excel
7 format (Waterloo_Load_Forecast_2021_COS_20200630) and is included as
8 Attachment 3-2 of this Exhibit.

9

10 In summary, as a starting point WNH used the same regression analysis methodology
11 approved by the Ontario Energy Board (the "Board") in its 2016 Cost of Service ("COS")
12 Application (EB-2015-0108) and updated the analysis for actual power purchases to the
13 end of the 2019. The updated regression analysis substituted Number of Customers for
14 Employment in Kitchener-Waterloo-Cambridge. Due to a high degree of collinearity
15 between the two variables, it would not be desirable to include both together. When
16 compared in isolated models, the regression model which included Number of
17 Customers had a higher R Square value than the model with Employment. Therefore,
18 Number of Customers was selected. WNH also added in a variable for Persistent CDM.

1 The previous application had CDM as a manual adjustment to the output of the model
2 post-regression analysis. WNH found Persistent CDM to be statistically significant and
3 improved the R Square value of the regression model when included. Persistent CDM
4 has been adjusted for the half-year-rule.

5
6 The regression analysis used in this Application has also been used by a number of
7 distributors in more recent Cost of Service Rate Applications to determine a prediction
8 model. With regard to the overall process of load forecasting, WNH believes that
9 conducting a regression analysis on historical electricity purchases to produce an
10 equation that will predict purchases is appropriate. WNH has the data for the amount of
11 electricity (in kWh) purchased from the IESO for use by WNH's customers. With a
12 regression analysis, these purchases can be related to other monthly explanatory
13 variables such as heating degree days and cooling degree days which occur in the same
14 month. The results of the regression analysis produce an equation that predicts the
15 purchases based on the explanatory variables. This prediction model is then used as
16 the basis to forecast the total level of weather normalized GWh purchases for the Bridge
17 Year and the Test Year which is converted to billed kWh by rate class. A detailed
18 explanation of the process is provided later in this evidence.

19
20 WNH has monthly purchased data from 1996 onward included in this Application, which
21 is consistent with its 2016 COS Filing and WNH believes conducting the regression
22 analysis on GWh purchases provides better results since a longer level of historical data
23 increases the accuracy of the regression analysis.

24
25 Based on the Board's approval of this methodology in a number of previous Cost of
26 Service Applications as well as the discussion that follows, WNH submits the load
27 forecasting methodology is reasonable at this time for the purposes of this Application.

28
29 WNH's weather normalized load forecast is developed in a three-step process. First, a
30 total system weather normalized purchased energy forecast is developed based on a

multivariate regression model that incorporates historical load, weather, and customer data. Second, the weather normalized purchased energy forecast is adjusted by a historical loss factor to produce a weather normalized billed energy forecast. Table 3-2 below provides a summary of the weather normalized load and customer/connection forecast used in this Application.

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

Year	Billed Actual (GWh)	Growth (GWh)	Percent Change (%)	Billed Weather Normal (GWh)	Growth (GWh)	Percent Change (%)	Customer / Connection Count	Growth	Percent Change (%)
2016 Board Approved	1,471.21			1,471.21			70,183		
2003 Actual	1,216.90			1,221.80			57,599		
2004 Actual	1,249.74	32.8	2.7%	1,281.46	59.7	4.9%	59,223	1,623.5	2.8%
2005 Actual	1,304.58	54.8	4.4%	1,307.82	26.4	2.1%	60,879	1,656.0	2.8%
2006 Actual	1,326.08	21.5	1.6%	1,339.95	32.1	2.5%	62,116	1,237.0	2.0%
2007 Actual	1,367.53	41.4	3.1%	1,347.31	7.4	0.5%	63,072	956.0	1.5%
2008 Actual	1,370.62	3.1	0.2%	1,372.59	25.3	1.9%	63,995	923.5	1.5%
2009 Actual	1,360.40	(10.2)	-0.7%	1,386.51	13.9	1.0%	64,851	856.0	1.3%
2010 Actual	1,425.61	65.2	4.8%	1,403.97	17.5	1.3%	65,670	818.5	1.3%
2011 Actual	1,437.23	11.6	0.8%	1,423.91	19.9	1.4%	66,440	770.5	1.2%
2012 Actual	1,450.97	13.7	1.0%	1,441.78	17.9	1.3%	67,208	768.0	1.2%
2013 Actual	1,448.57	(2.4)	-0.2%	1,449.42	7.6	0.5%	68,114	905.5	1.3%
2014 Actual	1,447.25	(1.3)	-0.1%	1,457.93	8.5	0.6%	68,794	680.0	1.0%
2015 Actual	1,441.03	(6.2)	-0.4%	1,460.10	2.2	0.1%	69,427	633.0	0.9%
2016 Actual	1,444.46	3.4	0.2%	1,454.44	(5.7)	-0.4%	70,249	822.0	1.2%
2017 Actual	1,409.17	(35.3)	-2.4%	1,448.26	(6.2)	-0.4%	71,361	1,112.0	1.6%
2018 Actual	1,467.27	58.1	4.1%	1,431.97	(16.3)	-1.1%	72,344	983.5	1.4%
2019 Actual	1,438.05	(29.2)	-2.0%	1,432.60	0.6	0.0%	72,887	543.0	0.8%
2020 Bridge - Normalized	1,430.06	(8.0)	-0.6%	1,430.06	(2.5)	-0.2%	73,447	559.7	0.8%
2021 Test - Normalized	1,431.62	1.6	0.1%	1,431.62	1.6	0.1%	74,029	581.9	0.8%

Finally, the forecast of billed energy by rate class is developed based on a forecast of customer numbers and historical usage patterns per customer. For the rate classes that have weather sensitive load their forecasted billed energy is adjusted to ensure that the total billed energy forecast by rate class is equivalent to the total weather normalized billed energy forecast that has been determined from the regression model.

The forecast of customers by rate class was determined using a trend analysis of historical customer additions by rate class from 2004 to 2019 and using it to forecast the

1 number of customers. For those rate classes that use kW for the distribution volumetric
2 billing determinant an adjustment factor is applied to the class energy forecast based on
3 the historical relationship between kW and kWh. Table 3-3 and Table 3-4 below provide
4 a summary of total load, customer/connection count and annual usage per
5 customer/connection. The following will explain the forecasting process in more detail.

1

Table 3-3 Summary of Load and Customer/Connection

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant	Total
Number of Customers/Connections									
2016 Board Approved	49,453	5,642	693	1	563	13,828	1	2	70,183
2003 Actual	39,236	4,967	646	1	459	12,292	-	-	57,599
2004 Actual	40,531	5,001	632	1	490	12,568	-	-	59,223
2005 Actual	41,769	5,062	623	1	491	12,935	-	-	60,879
2006 Actual	42,668	5,119	622	1	530	13,177	-	-	62,116
2007 Actual	43,382	5,151	627	1	554	13,358	-	-	63,072
2008 Actual	44,172	5,184	647	1	534	13,459	-	-	63,995
2009 Actual	44,853	5,253	663	1	534	13,548	-	-	64,851
2010 Actual	45,488	5,343	663	1	537	13,639	-	-	65,670
2011 Actual	46,194	5,402	666	1	499	13,678	1	-	66,440
2012 Actual	46,877	5,454	667	1	472	13,736	1	2	67,208
2013 Actual	47,602	5,503	668	1	496	13,841	1	2	68,114
2014 Actual	48,191	5,547	681	1	519	13,853	1	2	68,794
2015 Actual	48,750	5,623	697	1	530	13,824	1	2	69,427
2016 Actual	49,431	5,700	715	1	536	13,864	1	2	70,250
2017 Actual	50,115	5,782	735	1	550	14,175	1	2	71,361
2018 Actual	50,664	5,838	751	1	543	14,545	1	3	72,346
2019 Actual	51,041	5,867	752	1	530	14,694	1	3	72,889
2020 Bridge - Normalized	51,383	5,924	752	1	535	14,847	1	3	73,446
2021 Test - Normalized	51,719	5,989	771	1	540	15,005	1	3	74,029
Billed Energy (GWh) - Actual									
2016 Board Approved	408.9	196.7	721.7	94.9	3.1	7.6	31.4	6.8	1,471.2
2003 Actual	381.2	178.7	581.1	65.4	3.2	7.2	-	-	1,216.9
2004 Actual	385.1	181.7	606.6	66.1	3.2	7.1	-	-	1,249.7
2005 Actual	408.1	187.4	627.7	70.6	3.2	7.7	-	-	1,304.6
2006 Actual	391.9	189.3	660.3	73.7	3.1	7.7	-	-	1,326.1
2007 Actual	405.1	192.0	682.8	77.1	2.8	7.7	-	-	1,367.5
2008 Actual	405.5	185.0	693.6	76.7	1.8	7.9	-	-	1,370.6
2009 Actual	397.1	179.8	697.1	76.5	1.9	7.9	-	-	1,360.4
2010 Actual	413.3	185.0	734.8	82.6	2.0	8.0	-	-	1,425.6
2011 Actual	408.8	187.1	725.1	84.2	2.0	7.9	22.0	-	1,437.2
2012 Actual	409.9	190.2	716.5	86.7	2.3	9.7	32.1	3.6	1,451.0
2013 Actual	409.4	194.7	705.7	90.2	2.4	7.7	30.7	7.7	1,448.6
2014 Actual	410.1	197.1	699.8	91.2	2.5	7.7	31.7	7.0	1,447.2
2015 Actual	404.7	196.1	696.6	93.0	2.6	7.6	33.5	6.8	1,441.0
2016 Actual	404.4	193.1	701.4	95.2	2.7	7.6	33.5	6.4	1,444.5
2017 Actual	396.8	190.0	678.7	95.1	2.7	5.5	34.2	6.2	1,409.2
2018 Actual	413.7	198.0	706.5	98.4	2.6	3.5	36.0	8.6	1,467.3
2019 Actual	406.4	198.0	683.6	96.2	2.8	3.5	39.0	8.6	1,438.0
2020 Bridge - Normalized	399.5	196.9	679.0	97.4	2.9	3.3	41.9	9.2	1,430.1
2021 Test - Normalized	395.1	195.6	687.9	95.7	2.9	3.3	41.9	9.2	1,431.6
Billed Energy (GWh) - Weather Normal									
2016 Board Approved	408.9	196.7	721.7	94.9	3.1	7.6	31.4	6.8	1,471.2
2003 Actual	382.7	179.5	583.5	65.7	3.2	7.3	-	-	1,221.8
2004 Actual	394.9	186.3	622.0	67.7	3.3	7.3	-	-	1,281.5
2005 Actual	409.1	187.8	629.3	70.7	3.2	7.7	-	-	1,307.8
2006 Actual	396.0	191.3	667.2	74.4	3.2	7.8	-	-	1,339.9
2007 Actual	399.1	189.2	672.7	76.0	2.7	7.6	-	-	1,347.3
2008 Actual	406.1	185.3	694.6	76.8	1.8	7.9	-	-	1,372.6
2009 Actual	404.7	183.2	710.5	78.0	2.0	8.1	-	-	1,386.5
2010 Actual	407.0	182.2	723.6	81.3	2.0	7.8	-	-	1,404.0
2011 Actual	405.0	185.3	718.4	83.5	2.0	7.9	21.8	-	1,423.9
2012 Actual	407.3	189.0	712.0	86.2	2.2	9.7	31.9	3.5	1,441.8
2013 Actual	409.7	194.9	706.2	90.3	2.4	7.7	30.8	7.7	1,449.4
2014 Actual	413.1	198.6	705.0	91.9	2.6	7.8	32.0	7.1	1,457.9
2015 Actual	410.1	198.7	705.9	94.2	2.7	7.7	34.0	6.9	1,460.1
2016 Actual	407.2	194.5	706.2	95.8	2.7	7.7	33.8	6.5	1,454.4
2017 Actual	407.8	195.3	697.5	97.7	2.8	5.7	35.1	6.4	1,448.3
2018 Actual	403.7	193.2	689.5	96.0	2.6	3.4	35.1	8.4	1,432.0
2019 Actual	404.9	197.3	681.0	95.8	2.8	3.5	38.8	8.6	1,432.6
2020 Bridge - Normalized	399.5	196.9	679.0	97.4	2.9	3.3	41.9	9.2	1,430.1
2021 Test - Normalized	395.1	195.6	687.9	95.7	2.9	3.3	41.9	9.2	1,431.6

1 **Table 3-4 Annual Usage per Customer/Connection by Rate Class**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Energy Usage per Customer/Connection (kWh per Customer/Connection) - Actual								
2016 Board Approved	8,268	34,869	1,041,449	94,944,937	5,578	549	31,378,863	3,411,757
2003 Actual	9,715	35,988	899,589	65,433,586	6,987	588		
2004 Actual	9,501	36,324	960,574	66,067,057	6,576	565		
2005 Actual	9,769	37,020	1,008,374	70,553,960	6,495	596		
2006 Actual	9,186	36,977	1,062,474	73,668,918	5,918	585		
2007 Actual	9,337	37,284	1,088,972	77,115,461	5,010	579		
2008 Actual	9,181	35,696	1,072,048	76,733,608	3,332	589		
2009 Actual	8,854	34,230	1,052,265	76,507,951	3,645	585		
2010 Actual	9,085	34,636	1,108,258	82,593,009	3,729	583		
2011 Actual	8,849	34,633	1,088,775	84,249,637	4,096	580	22,030,344	
2012 Actual	8,745	34,875	1,074,199	86,740,767	4,772	709	32,083,013	1,776,270
2013 Actual	8,601	35,388	1,056,493	90,202,679	4,743	556	30,731,900	3,832,373
2014 Actual	8,510	35,535	1,027,669	91,205,251	4,904	557	31,728,985	3,502,412
2015 Actual	8,302	34,874	1,000,214	92,984,875	5,003	550	33,543,395	3,395,204
2016 Actual	8,182	33,883	980,964	95,179,112	5,096	551	33,527,765	3,222,984
2017 Actual	7,918	32,857	923,352	95,093,184	4,872	390	34,185,131	3,115,806
2018 Actual	8,165	33,915	941,394	98,366,842	4,847	241	36,001,231	3,434,213
2019 Actual	7,963	33,755	908,992	96,183,866	5,233	238	38,976,498	2,868,688
Energy Usage per Customer/Connection (kWh per Customer/Connection) - Weather Normal								
2016 Board Approved	8,268	34,869	1,041,449	94,944,937	5,578	549	31,378,863	3,411,757
2003 Actual	9,754	36,133	903,214	65,697,252	7,015	590		
2004 Actual	9,742	37,246	984,958	67,744,182	6,743	580		
2005 Actual	9,794	37,112	1,010,874	70,728,825	6,511	597		
2006 Actual	9,282	37,364	1,073,588	74,439,542	5,979	592		
2007 Actual	9,199	36,733	1,072,876	75,975,634	4,936	570		
2008 Actual	9,194	35,748	1,073,589	76,843,853	3,336	590		
2009 Actual	9,023	34,887	1,072,457	77,976,076	3,715	596		
2010 Actual	8,947	34,110	1,091,430	81,338,878	3,672	574		
2011 Actual	8,767	34,312	1,078,686	83,469,008	4,058	575	21,826,218	
2012 Actual	8,689	34,654	1,067,396	86,191,409	4,742	705	31,879,820	1,765,020
2013 Actual	8,606	35,409	1,057,117	90,255,997	4,746	556	30,750,066	3,834,638
2014 Actual	8,573	35,797	1,035,252	91,878,249	4,940	561	31,963,111	3,528,256
2015 Actual	8,412	35,335	1,013,451	94,215,452	5,069	558	33,987,314	3,440,136
2016 Actual	8,238	34,114	987,743	95,836,833	5,127	555	33,759,453	3,245,256
2017 Actual	8,137	33,769	948,967	97,731,190	5,007	401	35,133,470	3,202,242
2018 Actual	7,969	33,096	918,138	96,000,688	4,726	235	35,135,244	3,351,605
2019 Actual	7,933	33,624	905,552	95,819,924	5,209	237	38,829,019	2,857,833
2020 Bridge - Normalized	7,774	33,234	902,631	97,396,631	5,453	223	41,857,714	3,072,009
2021 Test - Normalized	7,639	32,655	892,202	95,699,867	5,453	223	41,857,714	3,072,009

2 **Purchased kWh Load Forecast**

3

4 An equation to predict total system purchased energy is developed using a multivariate

5 regression model with the following independent variables: weather (heating and cooling

6 degree days), calendar variables (days in month, seasonal, peak hours), WNH's

7 customer count and persistent CDM results. The regression model uses monthly kWh

8 and monthly values of independent variables from January 1996 to December 2019 to

9 determine the monthly regression coefficients.

1 Data for WNH's total system load is available as far back as January 1996. This provides
2 288 monthly data points which are a reasonable data set for use in a multiple regression
3 analysis. The average weather conditions over this period are applied in the prediction
4 formula to determine a weather normalized forecast for 2020 and 2021. This analysis
5 assumes weather normal conditions are based on a ten-year average of weather data.
6 This is consistent with the weather normalization methodology used to calculate weather
7 normal actual historic values in Tables 3-2, 3-3 and 3-4.

8
9 WNH notes that Purchases from the IESO were adjusted by Long-Term Load Transfers
10 (until cessation in 2017), Embedded Generation, Market Participant data and the
11 correction of a Hydro One Networks Inc. (HONI) billing error in which incorrect meters
12 were being attributed to, and purchases were being charged to WNH, by the IESO. The
13 error covered the period February 2001 through April 2006 and totalled 29,439,703 kWh.
14 The error was discovered in 2006 and purchases commencing May 1, 2006 were free
15 of this error.

16
17 The multivariate regression model has determined drivers of year-over-year changes in
18 WNH's load growth are weather, "calendar" factors, customer growth and CDM results.
19 These factors are captured within the multivariate regression model.

20
21 Weather impacts on load are apparent in both the winter heating season, and in the
22 summer cooling season. For that reason, both Heating Degree Days (i.e. a measure of
23 coldness in winter) and Cooling Degree Days (i.e. a measure of summer heat) are
24 modeled.

25
26 The second main factor determining energy use in the monthly model can be classified
27 as "calendar factors". For example, the number of days and peak hours in a particular
28 month will impact energy use. The modeling of purchased energy uses number of days
29 in the month, peak hours and a "flag" variable to capture the typically lower usage in the

1 spring and fall months. This flag variable explains additional reductions in usage beyond
2 what is captured through HDD and CDD.

3
4 Number of Customers has also been used as an input variable for the regression model.
5 This amount is based on historical information from WNHI's billing system. Note that in
6 place of the number of connections for streetlight and unmetered scattered load
7 customers, WNHI has used actual customer counts. The customer count has been
8 forecasted for 2020 and 2021 based on the trend of total customer growth from 2003 to
9 2019 (or earliest data available).

10
11 The Persistent CDM activity variable is an estimated level of monthly activity in
12 Conservation and Demand Management (CDM). For each year, the monthly values
13 grow at a constant value over the year subject to the half-year rule. Please see section
14 2.3.1.3 for more on the handling of CDM program results.

15
16 The following outlines the predication model used by WNH to predict weather normal
17 purchases for 2020 and 2021.

18
19 WNH Monthly Predicted kWh Purchases

20
21 = Heating Degree Days * 27,898
22 + Cooling Degree Days * 218,377
23 + Number of Days in the Month * 2,234,391
24 + Spring Fall Flag * (2,251,156)
25 + Number of Peak Hours * 61,104
26 + Number of Customers * 2,525
27 + Persistent CDM kWh * (1.89)
28 + Constant of (107,313,499).

The following historical monthly data were used as inputs in the regression model:

- Monthly total system purchased energy data from January 1996 to December 2019 from wholesale meter and billing system data;
- Weather data: heating degree-days (HDD) and cooling degree-days (CDD) (WNH uses the degree-days count for the Kitchener/Waterloo International Airport data point as published by Environment Canada which is calculated with respect to a base degree of 18° C);
- Number of days in the month;
- Number of peak hours (16* number of business days in any given month, excluding weekends and holidays based on Ontario's Statutory Holiday calendar);
- Spring fall flag (1 for Spring and Fall, and 0 for Summer and Winter);
- Number of WNH Customers, consistent with Table 3-3 but using actual customer count for Street Lighting and Unmetered Scattered Load classes instead of connection count;
- Persistent CDM kWh (actual verified program results from 2006-2017 and predicted results for 2018-2020 subject to half-year rule as described in detail in 2.3.1.3.

The monthly data used in the regression model and the resulting monthly prediction for the actual and forecasted years are provided in Attachment 3-2.

The prediction formula has the following statistical results (Table 3-5) which generally indicate the formula has a very good fit to the actual data set. Moreover, all of the variable coefficients above have intuitive relationships with purchases.

1

Table 3-5 Statistical Results

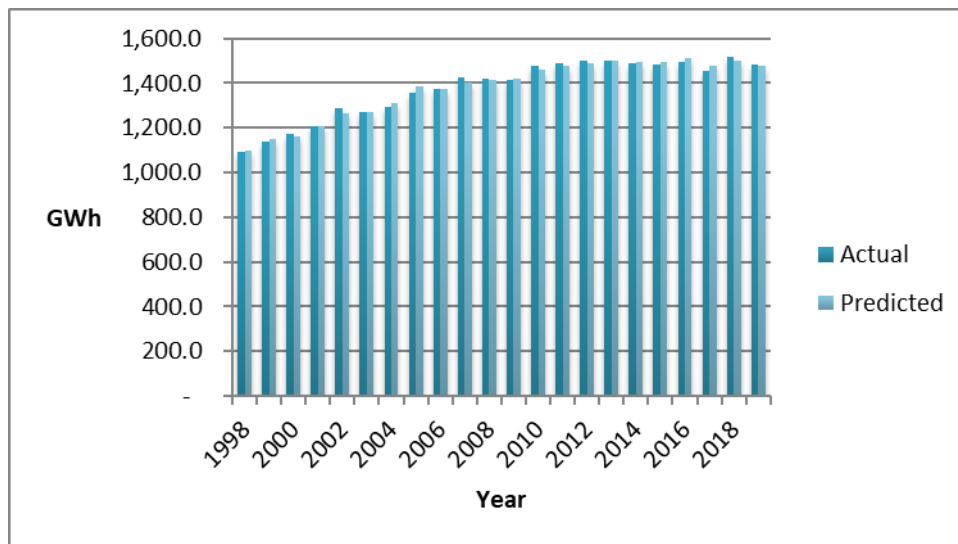
Statistic	Value
R Square	95.7%
Adjusted R Square	95.6%
F Test	888.4
MAPE (monthly)	2.10%
T-stats by Coefficient Intercept	(14.6)
Heating Degree Days	26.0
Cooling Degree Days	20.3
Number of Days in Month	9.1
Spring Fall Flag	(4.9)
Number of Peak Hours	5.1
# of Customers	55.0
Persistent CDM	(16.5)

2 The annual results of the above prediction formula compared to the actual annual
3 purchases from 1998 to 2019 are shown in Figure 3-1 below.

4

5

Figure 3-1 Actual vs Predicted Purchases (Millions of kWhs)



6 Table 3-6 below outlines the data that supports the above chart. In addition, the predicted
7 total system purchases for WNH are provided for 2020 and 2021 on a weather-normalized
8 basis.

1

Table 3-6 Total System Purchases (GWh)

Year	Actual	Predicted	% Difference	Actual Weather Normalized
1998	1,089.9	1,099.9	0.9%	1,109.8
1999	1,136.6	1,148.9	1.1%	1,140.5
2000	1,173.5	1,163.1	-0.9%	1,163.1
2001	1,205.8	1,208.2	0.2%	1,210.7
2002	1,286.4	1,267.3	-1.5%	1,267.3
2003	1,270.0	1,269.6	0.0%	1,275.1
2004	1,294.3	1,309.9	1.2%	1,327.2
2005	1,358.6	1,382.7	1.8%	1,361.9
2006	1,372.5	1,376.6	0.3%	1,386.9
2007	1,423.6	1,403.6	-1.4%	1,402.5
2008	1,421.4	1,415.9	-0.4%	1,423.5
2009	1,411.8	1,417.8	0.4%	1,438.9
2010	1,479.1	1,459.3	-1.3%	1,456.7
2011	1,488.8	1,477.4	-0.8%	1,475.0
2012	1,499.1	1,488.0	-0.7%	1,489.6
2013	1,499.2	1,499.2	0.0%	1,500.1
2014	1,489.9	1,495.2	0.4%	1,500.9
2015	1,485.9	1,497.2	0.8%	1,505.6
2016	1,494.9	1,511.9	1.1%	1,505.2
2017	1,454.4	1,477.0	1.6%	1,494.8
2018	1,518.5	1,501.7	-1.1%	1,482.0
2019	1,483.5	1,474.8	-0.6%	1,477.9
2020 Bridge - Normalized		1,481.1		1,481.1
2021 Test - Normalized		1,482.8		1,482.8
2021 Test - 20 Yr Trend		1,482.3		1,482.3

2 The weather normalized amount for 2021 is determined by using 2021 dependent
3 variables in the prediction formula on a monthly basis along with the 10-year average
4 monthly heating degree days and cooling degree days which have occurred from January
5 2010 to December 2019. The weather normalized amount for 2021 using a 20-year trend
6 of monthly heating degree days and cooling degree days is included for comparison.

7

8 **Billed kWh Load Forecast**

9

10 To determine the total weather normalized energy billed forecast, the total system
11 weather normalized purchases forecast is adjusted by a historical loss factor. The

historical loss factor used is 3.57% which represents the average loss factor from 2003 to 2019 and encompasses all available historical data. This loss factor is slightly different from the loss factor of 3.53% that is calculated in Exhibit 8 Table 8-16 (Board App. 2-R). This is due to a difference in the calculation methodology used in Exhibit 8 which considers wholesale meters points separately and is only based on the previous 5 years. The difference in factors is not material and both are trending similarly. With this average loss factor the total weather normalized billed energy before adjustment discussed below will be 1,430.1 GWh for 2020 and 1,431.6 GWh for 2021 (i.e. Predicted GWh forecast divided by the historical loss factor).

COVID-19 Impact to Load Forecast

During the preparation of this Application, a global pandemic (COVID-19) occurred. It is very difficult to determine at this time what the lasting implications of this pandemic will be on customers, businesses and electricity load however it will have long term impacts. WNH acknowledges that the load forecast prepared prior to COVID-19 and provided in this Application is no longer accurate, however an estimate of a more realistic forecast is not well supported at this time. WNH has prepared an alternative load forecast based on best estimates including:

1. IESO Presentation – An Overview of COVID-19 Impacts on Electricity System Operations (April 23, 2020) included in Attachment 3-3
2. Review of WNH's load trends including both energy and demand – see Table 3-7
3. Discussion with Large User on projected load

In the IESO report it was noted that the demand observations by consumer groups include the following:

- Residential – peak demand increase by 2%, energy consumption increase by 4%

- Small Commercial < 50 kW - peak demand decrease by 14-17%, energy consumption decrease by 8-12%
- Industrial / Commercial Customers (> 50 kW) - peak demand decrease by 17%, energy consumption decrease by 17%

WNH has noted the following trends in total system load for March to May, 2020 as shown in Table 3-7. WNH has also included kW variances for GS > 50 kW and the Large User for the month of April for 2020, 2019 and 2018 in Table 3-8. These customers are billed on a monthly basis in the following month so the information is comparable.

Table 3-7 Total System Load Reductions – March – May, 2020

Year	kW Peak			Variance	
	2020	2019	2018	% change (2020 & 2019)	% change (2020 & 2018)
March	201,667	223,051	207,495	-9.59%	-2.81%
April	174,349	196,470	203,765	-11.26%	-14.44%
May	249,380	186,414	262,416	33.78%	-4.97%

Year	GWh			Variance	
	2020	2019	2018	% change (2020 & 2019)	% change (2020 & 2018)
March	118.82	127.47	125.56	-6.78%	-5.37%
April	101.79	113.31	116.90	-10.17%	-12.93%
May	104.95	108.72	118.87	-3.47%	-11.71%

Table 3-8 kW April Variances for > 50 kW and Large User

April	kW			Variance	
	2020	2019	2018	% change (2020 & 2019)	% change (2020 & 2018)
GS > 50 kW	111,139	132,710	135,856	-16.25%	-18.19%
Large User	9,312	13,048	13,121	-28.63%	-29.03%

Lastly, WNH has discussed load projections with its Large User. They have noted that it is very difficult to predict where they will be by January, 2021 but their load has significantly decreased during the COVID-19 time period.

Based on this information, WNH has prepared a second load forecast that decreases kWh usage by the following: GS < 50kW customers by 10%, GS > 50 by 15% and Large User by 20% in 2021 and customer count decreases as follows: Residential by 1%, GS < 50kW customers by 5% and GS > 50 by 4%. WNH anticipates that several businesses may not run at full capacity, may integrate more work from home practices or may close all together. WNH also anticipates that although residential usage will stay relatively the same, customer count growth will slow due to construction stoppages and the pending recession. WNH has not proceeded with this load forecast for the complete application as it recommends an alternative solution. Acknowledging that the initial load forecast as it stands is incorrect, WNH is requesting that the OEB decide between two options:

1. Allow for a special sub-account for WNH of Account 1509-Impacts Arising from the COVID-19 Emergency which calculates the variance between the load forecast included in this Application and actuals. The details of this sub-account are included in Exhibit 9 of this Application, or
2. Use the revised load forecast included in this Application. WNH has attached the load forecast in live Excel format (Waterloo_Load_Forecast_2021_COVID-19_20200630) in Attachment 3-4. The following Table 3-9 and 3-10 summarize the results.

Table 3-9 – Variance between Original Load Forecast and COVID-19 Adjusted

Year	GWh (Normalized)	GWh (COVID-19)	Variance	Customer/ Connection Count (Original)	Customer/ Connection Count (COVID-19)	Variance
2020 Bridge	1,430.06	1,284.12	(145.94)	73,447	73,162	(285)
2021 Test	1,431.62	1,268.72	(162.90)	74,029	73,249	(779)

Table 3-10 – Variance between Original Load Forecast Customer Count and COVID-19 Adjusted

Class	2020 Bridge (Original)	2020 Bridge (COVID-19)	Variance	2021 Test (Original)	2021 Test (COVID-19)	Variance
Residential	51,383	51,255	(128)	51,719	51,294	(425)
GS < 50 kW	5,924	5,777	(147)	5,989	5,662	(327)
GS > 50 kW	752	743	(9)	771	743	(28)
Large User	1	1	-	1	1	-
Unmetered Scattered Load	535	535	-	540	540	-
Street Lighting	14,847	14,847	-	15,005	15,005	-
Embedded Distributor	1	1	-	1	1	-
Direct Market Participant	3	3	-	3	3	-
Total	73,446	73,162	(284)	74,029	73,249	(780)

2.3.1.2 NORMALIZED AVERAGE USE PER CUSTOMER

Billed kWh Load Forecast and Customer/Connection Forecast by Rate Class

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

The next step in the forecasting process is to determine a customer/connection forecast. The customer/connections forecast is based on reviewing historical customer/connections data that is available as shown in the following Table 3-11. The annual customer/connections data is based on the average count opposed to the end of year count.

1

Table 3-11 Historical Customer/Connection Data

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant	Total
Number of Customers/Connections									
2003	39,236	4,967	646	1	459	12,292	-	-	57,599
2004	40,531	5,001	632	1	490	12,568	-	-	59,223
2005	41,769	5,062	623	1	491	12,935	-	-	60,879
2006	42,668	5,119	622	1	530	13,177	-	-	62,116
2007	43,382	5,151	627	1	554	13,358	-	-	63,072
2008	44,172	5,184	647	1	534	13,459	-	-	63,995
2009	44,853	5,253	663	1	534	13,548	-	-	64,851
2010	45,488	5,343	663	1	537	13,639	-	-	65,670
2011	46,194	5,402	666	1	499	13,678	1	-	66,440
2012	46,877	5,454	667	1	472	13,736	1	2	67,208
2013	47,602	5,503	668	1	496	13,841	1	2	68,114
2014	48,191	5,547	681	1	519	13,853	1	2	68,794
2015	48,750	5,623	697	1	530	13,824	1	2	69,427
2016	49,431	5,700	715	1	536	13,864	1	2	70,250
2017	50,115	5,782	735	1	550	14,175	1	2	71,361
2018	50,664	5,838	751	1	543	14,545	1	3	72,346
2019	51,041	5,867	752	1	530	14,694	1	3	72,889

- 2 From the historical customer/connection data the growth rate in customer/connection can
3 be determined which is provided on the following Table 3-12.

1

Table 3-12 Growth Rate in Customer/Connections

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Growth Rate in Customer/Connections								
2003								
2004	3.3%	0.7%	-2.2%	0.0%	6.9%	2.2%		
2005	3.1%	1.2%	-1.4%	0.0%	0.1%	2.9%		
2006	2.2%	1.1%	-0.2%	0.0%	8.1%	1.9%		
2007	1.7%	0.6%	0.9%	0.0%	4.4%	1.4%		
2008	1.8%	0.6%	3.2%	0.0%	-3.6%	0.7%		
2009	1.5%	1.3%	2.4%	0.0%	0.1%	0.7%		
2010	1.4%	1.7%	0.1%	0.0%	0.5%	0.7%		
2011	1.6%	1.1%	0.5%	0.0%	-7.0%	0.3%		
2012	1.5%	1.0%	0.2%	0.0%	-5.5%	0.4%	0.0%	
2013	1.5%	0.9%	0.1%	0.0%	5.2%	0.8%	0.0%	0.0%
2014	1.2%	0.8%	1.9%	0.0%	4.6%	0.1%	0.0%	0.0%
2015	1.2%	1.4%	2.3%	0.0%	2.0%	-0.2%	0.0%	0.0%
2016	1.4%	1.4%	2.7%	0.0%	1.1%	0.3%	0.0%	0.0%
2017	1.4%	1.4%	2.8%	0.0%	2.7%	2.2%	0.0%	0.0%
2018	1.1%	1.0%	2.1%	0.0%	-1.4%	2.6%	0.0%	50.0%
2019	0.7%	0.5%	0.2%	0.0%	-2.4%	1.0%	0.0%	0.0%
Geo-Mean	1.7%	1.0%	1.0%	0.0%	0.9%	1.1%	0.0%	6.0%
Trend	0.7%	1.1%	2.5%	0.0%	1.1%	1.1%	0.0%	22.1%

2 WNH reviewed historical customer additions in each rate class and analyzed the average
3 growth to determine the forecast of customer/connections in 2020 and 2021. WNH
4 compared the following growth rates:

5

- 6 • Geometric mean from 2004 (or first available year) to 2019 – shown in Table 3-12
- 7 • 5-year geometric mean (2015-2019)
- 8 • 3-year geometric mean (2017-2019)
- 9 • Trend analysis from 2004 (or first available year) to 2019 – shown in Table 3-12

10

11 For most of the rate classes, the geometric means for the more recent historical periods
12 were lower than the geometric mean back to 2004. This was corroborated using the trend
13 analysis, indicating that customer growth across the classes has slowed in recent years.
14 WNH chose to apply the trend growth rate to each customer class to forecast 2020 and
15 2021 customer count. The exception is Direct Market Participant where the customer
16 forecast has been held constant.

1 Table 3-13 outlines the forecast of customers by rate class for 2020 and 2021.

2

3 **Table 3-13 Customer/Connection Forecast**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant	Total
Forecast number of Customers/Connections									
2020 Bridge - Normalized	51,383	5,924	752	1	535	14,847	1	3	73,446
2021 Test - Normalized	51,719	5,989	771	1	540	15,005	1	3	74,029

4 The next step in the process is to review the historical customer/connection usage and to
5 reflect this usage per customer in the forecast. Table 3-14 below provides the average
6 annual usage per customer by rate class from 2003 to 2019 derived from WNH's billing
7 system data.

8

9 **Table 3-14 Historical Annual Usage per Customer**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Energy Usage per Customer/Connection (kWh per Customer/Connection)								
2003 Actual	9,715	35,988	899,589	65,433,586	6,987	588		
2004 Actual	9,501	36,324	960,574	66,067,057	6,576	565		
2005 Actual	9,769	37,020	1,008,374	70,553,960	6,495	596		
2006 Actual	9,186	36,977	1,062,474	73,668,918	5,918	585		
2007 Actual	9,337	37,284	1,088,972	77,115,461	5,010	579		
2008 Actual	9,181	35,696	1,072,048	76,733,608	3,332	589		
2009 Actual	8,854	34,230	1,052,265	76,507,951	3,645	585		
2010 Actual	9,085	34,636	1,108,258	82,593,009	3,729	583		
2011 Actual	8,849	34,633	1,088,775	84,249,637	4,096	580	22,030,344	
2012 Actual	8,745	34,875	1,074,199	86,740,767	4,772	709	32,083,013	1,776,270
2013 Actual	8,601	35,388	1,056,493	90,202,679	4,743	556	30,731,900	3,832,373
2014 Actual	8,510	35,535	1,027,669	91,205,251	4,904	557	31,728,985	3,502,412
2015 Actual	8,302	34,874	1,000,214	92,984,875	5,003	550	33,543,395	3,395,204
2016 Actual	8,182	33,883	980,964	95,179,112	5,096	551	33,527,765	3,222,984
2017 Actual	7,918	32,857	923,352	95,093,184	4,872	390	34,185,131	3,115,806
2018 Actual	8,165	33,915	941,394	98,366,842	4,847	241	36,001,231	3,434,213
2019 Actual	7,963	33,755	908,992	96,183,866	5,233	238	38,976,498	2,868,688

10 From the historical usage per customer/connection data the growth rate in usage per
11 customer/connection can be reviewed which is provided in Table 3-15.

1 **Table 3-15 Growth Rate in Usage per Customer/Connection**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Annual Growth Rate in Usage per Customer / Connection								
2003 Actual								
2004 Actual	-2.2%	0.9%	6.8%	1.0%	-5.9%	-3.8%		
2005 Actual	2.8%	1.9%	5.0%	6.8%	-1.2%	5.3%		
2006 Actual	-6.0%	-0.1%	5.4%	4.4%	-8.9%	-1.7%		
2007 Actual	1.6%	0.8%	2.5%	4.7%	-15.3%	-1.1%		
2008 Actual	-1.7%	-4.3%	-1.6%	-0.5%	-33.5%	1.7%		
2009 Actual	-3.6%	-4.1%	-1.8%	-0.3%	9.4%	-0.7%		
2010 Actual	2.6%	1.2%	5.3%	8.0%	2.3%	-0.3%		
2011 Actual	-2.6%	0.0%	-1.8%	2.0%	9.8%	-0.5%		
2012 Actual	-1.2%	0.7%	-1.3%	3.0%	16.5%	22.2%	45.6%	
2013 Actual	-1.6%	1.5%	-1.6%	4.0%	-0.6%	-21.6%	-4.2%	97.2%
2014 Actual	-1.1%	0.4%	-2.7%	1.1%	3.4%	0.2%	3.2%	-11.4%
2015 Actual	-2.4%	-1.9%	-2.7%	2.0%	2.0%	-1.3%	5.7%	-8.0%
2016 Actual	-1.4%	-2.8%	-1.9%	2.4%	1.9%	0.1%	0.0%	-8.2%
2017 Actual	-3.2%	-3.0%	-5.9%	-0.1%	-4.4%	-29.2%	2.0%	6.6%
2018 Actual	3.1%	3.2%	2.0%	3.4%	-0.5%	-38.4%	5.3%	-7.9%
2019 Actual	-2.5%	-0.5%	-3.4%	-2.2%	8.0%	-1.0%	8.3%	-10.5%

2 The geometric mean (2004-2019) has been applied to determine the forecast
3 consumption per customer/connection. The resulting usage forecast for 2020 and 2021
4 is as follows in Table 3-16.

5
6 **Table 3-16 Forecast Annual kWh Usage per Customer/Connection**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Forecast Annual kWh Usage per Customers/Connections								
2020 Bridge	7,864	33,620	909,583	98,527,751	5,453	223	41,857,714	3,072,009
2021 Test	7,864	33,620	909,583	98,527,751	5,453	223	41,857,714	3,072,009

7 The preceding information is used to determine the non-normalized weather billed energy
8 forecast by applying the forecast number of customer/connection from Table 3-13 by the
9 forecast of annual usage per customer/connection from Table 3-16. The resulting non-
10 normalized weather billed energy forecast is shown in the following Table 3-17.

1 **Table 3-17 Non-Normalized Weather Billed Energy Forecast**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant	Total
Non-Normalized Weather Billed Energy Forecast (GWh)									
2020 Bridge (Not Normalized)	404.1	199.2	684.3	98.5	2.9	3.3	41.9	9.2	1,443.4
2021 Test (Not Normalized)	406.7	201.4	701.3	98.5	2.9	3.3	41.9	9.2	1,465.2

2 The non-normalized amounts are then adjusted based on weather sensitivity factors
3 (Table 3-18) to obtain the weather normalized forecast for 2020 and 2021 displayed in
4 Table 3-19. To determine the weather sensitivity of the various rate classes, WNH utilized
5 the HONI weather sensitivity data prepared in the 2006 Load Profile Study for WNH. This
6 methodology is consistent with WNH's 2016 Cost of Service Application.

7

8 **Table 3-18 Weather Sensitivity by Rate Class**

Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant
Weather Sensitivity							
75.0%	75.0%	49.9%	75.0%	0.0%	0.0%	0.0%	0.0%

9 The difference between the non-normalized and normalized forecast has been allocated
10 based on a pro-rata basis to each rate class based on the above level of weather
11 sensitivity.

12

13 **Table 3-19 Normalized Weather Billed Energy Forecast**

Year	Residential	GS < 50 kW	GS > 50 kW	Large User	Unmetered Scattered Load	Street Lighting	Embedded Distributor	Direct Market Participant	Total
Normalized Weather Billed Energy Forecast (GWh)									
2020 Bridge (Normalized)	399.5	196.9	679.0	97.4	2.9	3.3	41.9	9.2	1,430.1
2021 Test (Normalized)	395.1	195.6	687.9	95.7	2.9	3.3	41.9	9.2	1,431.6

14 The weather normalized values in Table 3-19 are exclusive of CDM programs. The impact
15 and persistence of CDM programs has been included as a variable in the purchases
16 regression model and WNH's methodology is described in more detail in 2.3.1.3.

Billed kW Load Forecast

The volumetric revenue components for General Service <50 kW, Large User, Street Lighting and Embedded Distributor are calculated based on billed kW demand. Since the load forecast is calculated based on kWh, forecasted kW for these classes must be correlated with the forecasted kWh for each class. The following Table 3-20 outlines the historical annual demand units by applicable rate class.

Table 3-20 Historical Annual kW per Applicable Rate Class

Year	GS > 50 kW	Large User	Street Lighting	Embedded Distributor	Direct Market Participant
<i>Billed Annual kW</i>					
2003	1,578,391	120,391	20,126		
2004	1,578,377	136,143	20,541		
2005	1,609,887	138,634	21,198		
2006	1,625,474	144,512	21,493		
2007	1,650,921	147,258	21,703		
2008	1,665,645	145,766	21,921		
2009	1,682,115	144,355	22,078		
2010	1,762,264	155,986	22,212		
2011	1,775,934	160,630	22,237	39,512	
2012	1,801,339	165,061	21,334	71,507	5,848
2013	1,766,195	168,361	21,461	71,174	13,338
2014	1,726,654	166,649	21,568	72,407	12,738
2015	1,734,984	170,151	21,206	75,403	12,035
2016	1,796,641	178,218	21,346	78,348	12,126
2017	1,747,019	177,858	15,685	80,788	11,765
2018	1,795,199	173,376	9,804	85,275	25,177
2019	1,752,761	169,281	9,891	89,358	18,270

The following Table 3-21 shows the historical ratio of kW/kWh as well as the trend ratios used in calculating the forecasted 2020 Bridge and 2021 Test Years.

1

Table 3-21 Historical kW/kWh Ratio per Applicable Rate Class

Year	GS > 50 kW	Large User	Street Lighting	Embedded Distributor	Direct Market Participant
Ratio of kW to kWh					
2003	0.2716%	0.1840%	0.2786%		
2004	0.2602%	0.2061%	0.2891%		
2005	0.2565%	0.1965%	0.2752%		
2006	0.2462%	0.1962%	0.2786%		
2007	0.2418%	0.1910%	0.2806%		
2008	0.2401%	0.1900%	0.2766%		
2009	0.2413%	0.1887%	0.2787%		
2010	0.2398%	0.1889%	0.2792%		
2011	0.2449%	0.1907%	0.2801%	0.1794%	
2012	0.2514%	0.1903%	0.2189%	0.2229%	0.1646%
2013	0.2503%	0.1866%	0.2788%	0.2316%	0.1740%
2014	0.2467%	0.1827%	0.2794%	0.2282%	0.1818%
2015	0.2490%	0.1830%	0.2787%	0.2248%	0.1772%
2016	0.2562%	0.1872%	0.2795%	0.2337%	0.1881%
2017	0.2574%	0.1870%	0.2836%	0.2363%	0.1888%
2018	0.2541%	0.1763%	0.2802%	0.2369%	0.2932%
2019	0.2564%	0.1760%	0.2826%	0.2293%	0.2123%
Ratios used in kW Forecasts					
Trend	0.2532%	0.1769%	0.2779%	0.2462%	0.2490%

2 WNH has utilized the trend of growth to forecast kW for all rate classes. The trend analysis
3 includes all years back to 2003 where possible. This is consistent with the customer count
4 growth. The following Table 3-22 outlines the forecast of kW for the applicable rate
5 classes.

1

Table 3-22 kW Forecast by Applicable Rate Class

Year	GS > 50 kW	Large User	Street Lighting	Embedded Distributor	Direct Market Participant	Total
<i>Predicted Billed kW</i>						
2020 Bridge - Normalized	1,719,145	172,288	9,204	103,033	22,951	2,026,621
2021 Test - Normalized	1,741,685	169,287	9,302	103,033	22,951	2,046,258

2 Table 3-23 provides a summary of the total load forecast on a power purchased and billed
3 level.

1

Table 3-23 Summary of Total Load Forecast

	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test
Actual kWh Purchases	1,494,900,181	1,454,405,279	1,518,504,309	1,483,499,736		
Predicted kWh Purchases	1,511,872,715	1,476,990,377	1,501,723,627	1,474,774,779	1,481,145,611	1,482,761,312
% Difference between Actual and Predicted Purchases	1.1%	1.6%	-1.1%	-0.6%		
Loss Factor					1.0357	1.0357
Total Billed	1,444,462,268	1,409,167,205	1,467,265,689	1,438,045,052	1,430,063,908	1,431,623,886
By Class						
Residential						
Customers	49,431	50,115	50,664	51,041	51,383	51,719
kWh	404,436,333	396,801,470	413,689,291	406,423,263	399,456,598	395,056,934
General Service < 50 kW						
Customers	5,700	5,782	5,838	5,867	5,924	5,989
kWh	193,116,426	189,981,988	197,978,623	198,022,375	196,886,108	195,573,807
General Service > 50 to 4999 kW						
Customers	715	735	751	752	752	771
kWh	701,389,229	678,663,686	706,516,406	683,561,942	679,022,051	687,924,696
kW	1,796,641	1,747,019	1,795,199	1,752,761	1,719,145	1,741,685
Large User						
Customers	1	1	1	1	1	1
kWh	95,179,112	95,093,184	98,366,842	96,183,866	97,396,631	95,699,867
kW	178,218	177,858	173,376	169,281	172,288	169,287
Direct Market Participant						
Customers	2	2	3	3	3	3
kWh	6,445,968	6,231,611	8,585,533	8,606,064	9,216,027	9,216,027
kW	12,126	11,765	25,177	18,270	22,951	22,951
Street Lights						
Connections	13,864	14,175	14,545	14,694	14,847	15,005
kWh	7,638,394	5,530,665	3,498,479	3,499,974	3,312,567	3,347,727
kW	21,346	15,685	9,804	9,891	9,204	9,302
Unmetered Loads						
Connections	536	550	543	530	535	540
kWh	2,729,041	2,679,470	2,629,284	2,771,071	2,916,211	2,947,114
Embedded Distributor						
Customers	1	1	1	1	1	1
kWh	33,527,765	34,185,131	36,001,231	38,976,498	41,857,714	41,857,714
kW	78,348	80,788	85,275	89,358	103,033	103,033
Total						
Customer/Connections	70,249	71,361	72,344	72,887	73,447	74,029
kWh	1,444,462,268	1,409,167,205	1,467,265,689	1,438,045,052	1,430,063,908	1,431,623,886
kW from applicable classes	2,086,679	2,033,115	2,088,831	2,039,562	2,026,622	2,046,258

2.3.1.3 CDM ADJUSTMENT FOR THE LOAD FORECAST FOR DISTRIBUTORS

CDM Adjustment and LRAMVA

The load forecast, which draws on the regression analysis of historical usage inherently includes CDM efforts. The CDM Activity tab of the Load Forecast model (Attachment 3-2) outlines the actual net savings from 2006-2018 CDM programs and the expected net savings from 2019-2020 CDM programs. Savings for programs up to 2017 are based on verified results from the IESO and 2018 program savings are estimated from the IESO Participation and Cost Reports. 2019-2020 program savings are estimated through a combination of the IESO Participation and Cost Reports and expected savings from contracted programs under the IESO's interim framework. Each year of results has been persisted into 2021 and has been adjusted for the half-year rule (see below).

Due to the inclusion of 2019 and 2020 projected net program savings in the Persistent CDM variable used in the regression model, a manual adjustment to the load forecast is not required. CDM results for historical years up to the conclusion of the program in 2019 are inherently included in the actual billed data in Table 3-14. The wind-down of the programs in 2020 is not significant and is sufficiently considered in the forecast usage per customer in Table 3-16.

Furthermore, the calculation of a 2021 threshold for LRAMVA is not necessary due to the lack of new CDM programs. As a result, Appendix 2-I is also not required.

Half-Year Rule

As noted in the Filing Requirements, dated July 18, 2014, although it is recognized that the CDM programs in a year are not in effect for the full year, the CDM results reported by the IESO are annualized. In light of this, WNH is proposing that it is appropriate to use

1 the methodology introduced by Board staff in London Hydro's Cost of Service Application,
2 EB-2012-0146/EB-2012-0380 in order to estimate the impact of CDM on historical load.
3 In its Interrogatories, Board staff proposed a methodology for implementing the half-year
4 rule for London Hydro's CDM variable. WNH has used the methodology proposed by
5 Board staff to estimate the monthly impact of its 2006 to 2020 CDM savings in order to
6 record the impact of CDM to historical load data.

7 8 **2.3.2 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS** 9

10 Table 3-24 provides a summary of the load forecast on a billing determinant basis by rate
11 class. This table is also consistent with Appendix 2-IB which provides a variance analysis
12 between each year and the last Board approved values. The customer count is based on
13 average annual values. Consistent with data provided in Tables 3-3 to 3-6, weather
14 normalized values are based on a 10-year average of heating degree days and cooling
15 degree days.

**Table 3-24 Summary of Billing Determinants and Average Consumption with
Variances of Actual and Forecast Data Consistent with Appendix 2-IB**

	2016 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test
Residential							
# of Customers	49,453	49,431	50,115	50,664	51,041	51,383	51,719
kWh - actuals	408,868,804	404,436,333	396,801,470	413,689,291	406,423,263	399,456,598	395,056,934
kWh - weather normalized	408,868,804	407,231,132	407,809,251	403,738,252	404,885,436	399,456,598	395,056,934
Consumption (kWh) per Customer - actual	8,268	8,182	7,918	8,165	7,963	7,774	7,639
Consumption (kWh) per Customer - weather norm	8,268	8,238	8,137	7,969	7,933	7,774	7,639
Variance Analysis (year-over-year)							
# of Customers		-0.04%	1.38%	1.10%	0.74%	0.67%	0.65%
kWh - actuals		-1.08%	-1.89%	4.26%	-1.76%	-1.71%	-1.10%
kWh - weather normalized		-0.40%	0.14%	-1.00%	0.28%	-1.34%	-1.10%
GS < 50 kW							
# of Customers	5,642	5,700	5,782	5,838	5,867	5,924	5,989
kWh - actuals	196,732,916	193,116,426	189,981,988	197,978,623	198,022,375	196,886,108	195,573,807
kWh - weather normalized	196,732,916	194,450,929	195,252,331	193,216,370	197,273,096	196,886,108	195,573,807
Consumption (kWh) per Customer - actual	34,869	33,883	32,857	33,915	33,755	33,234	32,655
Consumption (kWh) per Customer - weather norm	34,869	34,117	33,769	33,099	33,627	33,234	32,655
Variance Analysis (year-over-year)							
# of Customers		1.02%	1.45%	0.96%	0.50%	0.98%	1.09%
kWh - actuals		-1.84%	-1.62%	4.21%	0.02%	-0.57%	-0.67%
kWh - weather normalized		-1.16%	0.41%	-1.04%	2.10%	-0.20%	-0.67%
GS > 50 kW							
# of Customers	693	715	735	751	752	752	771
kWh - actuals	721,724,020	701,389,229	678,663,686	706,516,406	683,561,942	679,022,051	687,924,696
kWh - weather normalized	721,724,020	706,236,077	697,490,684	689,521,592	680,975,476	679,022,051	687,924,696
kW - actuals	1,774,720	1,796,641	1,747,019	1,795,199	1,752,761	1,719,145	1,741,685
kW - weather normalized	1,774,720	1,809,056	1,795,484	1,752,017	1,746,129	1,719,145	1,741,685
Consumption (kW) per Customer - actual	2,561	2,513	2,377	2,392	2,331	2,285	2,259
Consumption (kW) per Customer - weather norm	2,561	2,530	2,443	2,334	2,322	2,285	2,259
Variance Analysis (year-over-year)							
# of Customers		3.17%	2.80%	2.11%	0.20%	0.04%	2.50%
kWh - actuals		-2.82%	-3.24%	4.10%	-3.25%	-0.66%	1.31%
kWh - weather normalized		-2.15%	-1.24%	-1.14%	-1.24%	-0.29%	1.31%
kW - actuals		1.24%	-2.76%	2.76%	-2.36%	-1.92%	1.31%
kW - weather normalized		1.93%	-0.75%	-2.42%	-0.34%	-1.55%	1.31%

1

	2016 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test
Large User							
# of Customers	1	1	1	1	1	1	1
kWh - actuals	94,944,937	95,179,112	95,093,184	98,366,842	96,183,866	97,396,631	95,699,867
kWh - weather normalized	94,944,937	95,836,833	97,731,190	96,000,688	95,819,924	97,396,631	95,699,867
kW - actuals	173,364	178,218	177,858	173,376	169,281	172,288	169,287
kW - weather normalized	173,364	179,450	182,792	169,205	168,641	172,288	169,287
Consumption (kW) per Customer - actual	173,364	178,218	177,858	173,376	169,281	172,288	169,287
Consumption (kW) per Customer - weather norm	173,364	179,450	182,792	169,205	168,641	172,288	169,287
Variance Analysis (year-over-year)							
# of Customers		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
kWh - actuals		0.25%	-0.09%	3.44%	-2.22%	1.26%	-1.74%
kWh - weather normalized		0.94%	1.98%	-1.77%	-0.19%	1.65%	-1.74%
kW - actuals		2.80%	-0.20%	-2.52%	-2.36%	1.78%	-1.74%
kW - weather normalized		3.51%	1.86%	-7.43%	-0.33%	2.16%	-1.74%
Unmetered Scattered Load							
# of Customers	563	536	550	543	530	535	540
kWh - actuals	3,140,372	2,729,041	2,679,470	2,629,284	2,771,071	2,916,211	2,947,114
kWh - weather normalized	3,140,372	2,747,900	2,753,802	2,566,038	2,760,586	2,916,211	2,947,114
Consumption (kWh) per Customer - actual	5,578	5,096	4,872	4,847	5,233	5,453	5,453
Consumption (kWh) per Customer - weather norm	5,578	5,131	5,007	4,730	5,214	5,453	5,453
Variance Analysis (year-over-year)							
# of Customers		-4.88%	2.71%	-1.36%	-2.40%	1.00%	1.06%
kWh - actuals		-13.10%	-1.82%	-1.87%	5.39%	5.24%	1.06%
kWh - weather normalized		-12.50%	0.21%	-6.82%	7.58%	5.64%	1.06%
Street Lighting							
# of Customers	13,828	13,864	14,175	14,545	14,694	14,847	15,005
kWh - actuals	7,594,660	7,638,394	5,530,665	3,498,479	3,499,974	3,312,567	3,347,727
kWh - weather normalized	7,594,660	7,691,178	5,684,093	3,414,325	3,486,731	3,312,567	3,347,727
kW - actuals	21,115	21,346	15,685	9,804	9,891	9,204	9,302
kW - weather normalized	21,115	21,493	16,120	9,568	9,853	9,204	9,302
Consumption (kW) per Customer - actual	1.53	1.54	1.11	0.67	0.67	0.62	0.62
Consumption (kW) per Customer - weather norm	1.53	1.55	1.14	0.66	0.67	0.62	0.62
Variance Analysis (year-over-year)							
# of Customers		0.26%	2.24%	2.61%	1.02%	1.05%	1.06%
kWh - actuals		0.58%	-27.59%	-36.74%	0.04%	-5.35%	1.06%
kWh - weather normalized		1.27%	-26.10%	-39.93%	2.12%	-5.00%	1.06%
kW - actuals		1.09%	-26.52%	-37.49%	0.89%	-6.94%	1.06%
kW - weather normalized		1.79%	-25.00%	-40.65%	2.98%	-6.58%	1.06%
Embedded Distributor							
# of Customers	1	1	1	1	1	1	1
kWh - actuals	31,378,863	33,527,765	34,185,131	36,001,231	38,976,498	41,857,714	41,857,714
kWh - weather normalized	31,378,863	33,759,453	35,133,470	35,135,244	38,829,019	41,857,714	41,857,714
kW - actuals	71,406	78,348	80,788	85,275	89,358	103,033	103,033
kW - weather normalized	71,406	78,889	83,029	83,224	89,020	103,033	103,033
Consumption (kW) per Customer - actual	71,406	78,348	80,788	85,275	89,358	103,033	103,033
Consumption (kW) per Customer - weather norm	71,406	78,889	83,029	83,224	89,020	103,033	103,033
Variance Analysis (year-over-year)							
# of Customers		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
kWh - actuals		6.85%	1.96%	5.31%	8.26%	7.39%	0.00%
kWh - weather normalized		7.59%	4.07%	0.01%	10.51%	7.80%	0.00%
kW - actuals		9.72%	3.11%	5.55%	4.79%	15.30%	0.00%
kW - weather normalized		10.48%	5.25%	0.23%	6.96%	15.74%	0.00%

1

	2016 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test
Direct Market Participant							
# of Customers	2	2	2	3	3	3	3
kWh - actuals	6,823,514	6,445,968	6,231,611	8,585,533	8,606,064	9,216,027	9,216,027
kWh - weather normalized	6,823,514	6,490,512	6,404,484	8,379,014	8,573,500	9,216,027	9,216,027
kW - actuals	12,620	12,126	11,765	25,177	18,270	22,951	22,951
kW - weather normalized	12,620	12,210	12,092	24,571	18,201	22,951	22,951
Consumption (kW) per Customer - actual	6,310	6,063	5,883	8,392	6,090	7,650	7,650
Consumption (kW) per Customer - weather norm	6,310	6,105	6,046	8,190	6,067	7,650	7,650
Variance Analysis (year-over-year)							
# of Customers		0.00%	0.00%	50.00%	0.00%	0.00%	0.00%
kWh - actuals		-5.53%	-3.33%	37.77%	0.24%	7.09%	0.00%
kWh - weather normalized		-4.88%	-1.33%	30.83%	2.32%	7.49%	0.00%
kW - actuals		-3.91%	-2.98%	113.99%	-27.43%	25.62%	0.00%
kW - weather normalized		-3.25%	-0.97%	103.20%	-25.92%	26.10%	0.00%
Totals							
Customers / Connections	70,183	70,250	71,361	72,346	72,889	73,446	74,029
kWh - actual	1,471,208,086	1,444,462,268	1,409,167,205	1,467,265,689	1,438,045,052	1,430,063,908	1,431,623,886
kWh - weather normalized	1,471,208,086	1,454,444,014	1,448,259,305	1,431,971,524	1,432,603,768	1,430,063,908	1,431,623,886
kW from applicable classes	2,053,224	2,086,679	2,033,115	2,088,831	2,039,562	2,026,622	2,046,258
kW - weather normalized	2,053,224	2,101,098	2,089,516	2,038,585	2,031,845	2,026,622	2,046,258
Totals - Variance (year-over-year)							
Customers / Connections		0.09%	1.58%	1.38%	0.75%	0.77%	0.79%
kWh - actual		-1.82%	-2.44%	4.12%	-1.99%	-0.55%	0.11%
kWh - weather normalized		-1.14%	-0.43%	-1.12%	0.04%	-0.18%	0.11%
kW from applicable classes		1.63%	-2.57%	2.74%	-2.36%	-0.63%	0.97%
kW - weather normalized		2.33%	-0.55%	-2.44%	-0.33%	-0.26%	0.97%

2

Table 3-25 Summary of Distribution Revenue

Description	2016 Board Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge	2021 Test
Distribution Revenues							
Residential	17,976,876	18,020,359	18,233,438	18,947,598	19,042,091	19,761,902	21,315,456
GS < 50 kW	5,225,595	5,082,529	5,223,258	5,469,187	5,521,922	5,646,605	6,055,336
GS > 50 kW	9,406,347	9,641,250	9,572,272	9,855,084	9,621,964	9,905,561	10,774,523
Large User	780,567	799,702	809,626	800,321	783,530	818,993	863,967
Unmetered Scattered Load	113,196	109,155	106,640	104,855	106,553	112,439	120,471
Street Lighting	252,717	252,249	207,078	153,640	154,033	153,401	166,118
Embedded Distributor	1,430	1,564	1,772	1,746	1,826	2,174	2,216
Total Operating Revenue	33,756,728	33,906,808	34,154,084	35,332,431	35,231,919	36,401,075	39,298,087

3 The following discussion provides a year over year variance analysis on WNH's
4 Distribution Revenue, Billing Determinants and Average Consumption per
5 Customer/Connection. The variance analysis will compare 2016 Actual to 2016 Board
6 Approved; 2017 Actual to 2016 Actual; 2018 Actual to 2017 Actual; 2019 Actual to 2018
7 Actual; 2020 Bridge to 2019 and 2021 Test Year to 2020 Bridge Year. The Distribution
8 Revenue variance analysis is based on information provided in Table 3-25. The Billing

Determinant and Average Consumption variance analysis is based on data outlined in Table 3-24. The overall variance analysis has been provided based on WNH's materiality of \$190,000 as calculated in Exhibit 1, Table 1-6 of this Application.

2016 Actual vs 2016 Board Approved

Table 3-26 Distribution Revenue - 2016 Actual vs 2016 Board Approved

Distribution Revenues	2016 Board Approved	2016 Actual	2016 Actual vs 2016 Board Approved
Residential	17,976,876	18,020,359	43,483
GS < 50 kW	5,225,595	5,082,529	(143,066)
GS > 50 kW	9,406,347	9,641,250	234,903
Large User	780,567	799,702	19,135
Unmetered Scattered Load	113,196	109,155	(4,041)
Street Lighting	252,717	252,249	(468)
Embedded Distributor	1,430	1,564	134
Total	33,756,728	33,906,808	150,080

Table 3-26 shows that overall and for each customer class there were no material differences in 2016 from Board Approved except for the GS > 50 kW customer class. This was due to customer count and kW increase.

1 **Table 3-27 Billing Determinants – 2016 Actual vs 2016 Board Approved**

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2016 Board Approved	2016 Actual	Difference	2016 Board Approved	2016 Actual	2016 Board Approved	2016 Actual	
Residential	49,453	49,431	(22)	408,868,804	404,436,333			(4,432,471)
GS < 50 kW	5,642	5,700	58	196,732,916	193,116,426			(3,616,490)
GS > 50 kW	693	715	22			1,774,720	1,796,641	21,921
Large User	1	1	-			173,364	178,218	4,854
Unmetered Scattered Load	563	536	(27)	3,140,372	2,729,041			(411,331)
Street Lighting	13,828	13,864	36			21,115	21,346	231
Embedded Distributor	1	1	-			71,406	78,348	6,942
Direct Market Participant	2	2	-			12,620	12,126	(494)
Total	70,183	70,250	67	608,742,092	600,281,800	2,053,225	2,086,679	

- 2 • Table 3-27 shows that customer count totals for 2016 were relatively close to
3 Board Approved. WNH saw a decrease in Residential and USL rate classes. WNH
4 also had an increase in customer count for GS < 50 kW, GS > 50 kW and street
5 lighting classes.
- 6 • kWh totals were lower in first quarter of 2016 than planned compared to the Board
7 Approved amounts for the applicable rate classes.
- 8 • kW totals were lower in first quarter of 2016 than planned but higher in summer
9 months than planned for the applicable rate classes.

10

11 **Table 3-28 Average Consumption – 2016 Actual vs 2016 Board Approved**

Average Consumption or Demand per Customer/Connection	kWh/kW	2016 Board Approved (Normalized)	2016 Weather-Actual		2016 Weather-Normalized	
			Average	Variance	Average	Variance
Residential	kWh	8,268	8,182	-1.0%	8,238	-0.4%
GS < 50 kW	kWh	34,869	33,883	-2.8%	34,117	-2.2%
GS > 50 kW	kW	2,561	2,513	-1.9%	2,530	-1.2%
Large User	kW	173,364	178,218	2.8%	179,450	3.5%
Unmetered Scattered Load	kWh	5,578	5,096	-8.6%	5,131	-8.0%
Street Lighting	kW	1.53	1.54	0.8%	1.55	1.5%
Embedded Distributor	kW	71,406	78,348	9.7%	78,889	10.5%
Direct Market Participant	kW	6,310	6,063	-3.9%	6,105	-3.2%

- Large User, Embedded Distributor and Direct Market Participant variance analysis per customer is the same as the Billing Determinant analysis since there are very few (or a single) customers in each class.
- Residential, GS <50 kW, GS >50 kW and Unmetered Scattered Load weather-normalized average consumption/demand were all slightly lower compared to Board Approved estimates. Street Lighting is higher than the estimated amount by an immaterial amount.
- Weather-Actual differences from the Board Approved amounts are all in line with Weather-Normalized variances with the exception of slight weather differences as expected.

2017 Actual vs 2016 Actual

Table 3-29 Distribution Revenue - 2017 Actual vs 2016 Actual

Distribution Revenues	2016 Actual	2017 Actual	2017 Actual vs 2016 Actual
Residential	18,020,359	18,233,438	213,079
GS < 50 kW	5,082,529	5,223,258	140,729
GS > 50 kW	9,641,250	9,572,272	(68,978)
Large User	799,702	809,626	9,924
Unmetered Scattered Load	109,155	106,640	(2,515)
Street Lighting	252,249	207,078	(45,171)
Embedded Distributor	1,564	1,772	208
Total	33,906,808	34,154,084	247,276

Table 3-29 shows that for each customer class there were no material differences in 2017 from 2016 except for the residential customer class. The majority of the increase is due to 684 additional residential customers in 2017. As the residential class moved towards a fully fixed charge there was a larger impact on revenue due to customer count and less of an impact from kWh. WNH also received a price cap index adjustment of 1.6%.

1 **Table 3-30 Billing Determinants – 2017 Actual vs 2016 Actual**

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2016 Actual	2017 Actual	Difference	2016 Actual	2017 Actual	2016 Actual	2017 Actual	
Residential	49,431	50,115	684	404,436,333	396,801,470			(7,634,863)
GS < 50 kW	5,700	5,782	82	193,116,426	189,981,988			(3,134,438)
GS > 50 kW	715	735	20			1,796,641	1,747,019	(49,621)
Large User	1	1	-			178,218	177,858	(360)
Unmetered Scattered Load	536	550	14	2,729,041	2,679,470			(49,571)
Street Lighting	13,864	14,175	311			21,346	15,685	(5,661)
Embedded Distributor	1	1	-			78,348	80,788	2,440
Direct Market Participant	2	2	-			12,126	11,765	(361)
Total	70,250	71,361	1,111	600,281,800	589,462,928	2,086,679	2,033,115	

- Table 3-30 shows that customer count totals for all rate classes increased from 2016 to 2017. The largest increase was in residential customers – 684. In 2017, WNH added 116 new customers and gave up 29 customers due to the elimination of long term load transfers.
- kWh totals were lower for all rate classes consistently throughout the year. This indicates that 2017 saw moderate weather trends in both the winter and summer months.
- Similarly, kW totals were lower for all applicable rate classes consistently throughout the year. The only exception was the Embedded Distributor rate class which had an immaterial increase.

13 **Table 3-31 Average Consumption – 2017 Actual vs 2016 Actual**

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather-Actual			Weather-Normalized		
		2016	2017	Variance	2016	2017	Variance
Residential	kWh	8,182	7,918	-3.2%	8,238	8,137	-1.2%
GS < 50 kW	kWh	33,883	32,857	-3.0%	34,117	33,769	-1.0%
GS > 50 kW	kW	2,513	2,377	-5.4%	2,530	2,443	-3.5%
Large User	kW	178,218	177,858	-0.2%	179,450	182,792	1.9%
Unmetered Scattered Load	kWh	5,096	4,872	-4.4%	5,131	5,007	-2.4%
Street Lighting	kW	1.54	1.11	-28.1%	1.55	1.14	-26.6%
Embedded Distributor	kW	78,348	80,788	3.1%	78,889	83,029	5.2%
Direct Market Participant	kW	6,063	5,883	-3.0%	6,105	6,046	-1.0%

- Large User, Embedded Distributor and Direct Market Participant variance analysis per customer is the same as the Billing Determinant analysis since there are very few (or a single) customers in each class.
- Residential, GS < 50 kW, GS > 50 kW and Unmetered Scattered Load weather-normalized average consumption/demand values are all slightly lower for 2017 than 2016. This is largely due to continuing conservation efforts through CDM programs. This downward trend is consistent with results dating back to the mid-2000's.
- Streetlight average demand decreased significantly in 2017 due to the conversion of streetlights to LED bulbs throughout WNH's service territory.
- Since 2017 was a moderate year in terms of weather for both the winter and summer months, all weather-actual averages are lower than the weather-normalized values.

2018 Actual vs 2017 Actual

Table 3-32 Distribution Revenue - 2018 Actual vs 2017 Actual

Distribution Revenues	2017 Actual	2018 Actual	2018 Actual vs 2017 Actual
Residential	18,233,438	18,947,598	714,160
GS < 50 kW	5,223,258	5,469,187	245,929
GS > 50 kW	9,572,272	9,855,084	282,812
Large User	809,626	800,321	(9,305)
Unmetered Scattered Load	106,640	104,855	(1,785)
Street Lighting	207,078	153,640	(53,438)
Embedded Distributor	1,772	1,746	(26)
Total	34,154,084	35,332,431	1,178,347

Table 3-32 shows that there were material revenue variances from the residential, GS < 50 kW and GS > 50 kW rate classes. This was due to three main items, customer count increases for each of the rate classes noted, significant increases in kWh and kW for the applicable rate classes noted and lastly a price cap increase of 0.9%.

Table 3-33 Billing Determinants - 2018 Actual vs 2017 Actual

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2017 Actual	2018 Actual	Difference	2017 Actual	2018 Actual	2017 Actual	2018 Actual	
Residential	50,115	50,664	549	396,801,470	413,689,291			16,887,821
GS < 50 kW	5,782	5,838	56	189,981,988	197,978,623			7,996,635
GS > 50 kW	735	751	16			1,747,019	1,795,199	48,180
Large User	1	1	-			177,858	173,376	(4,482)
Unmetered Scattered Load	550	543	(7)	2,679,470	2,629,284			(50,186)
Street Lighting	14,175	14,545	370			15,685	9,804	(5,881)
Embedded Distributor	1	1	-			80,788	85,275	4,487
Direct Market Participant	2	3	1			11,765	25,177	13,411
Total	71,361	72,346	985	589,462,928	614,297,198	2,033,115	2,088,831	

- Table 3-33 shows that customer count totals for all rate classes increased (or stayed the same) from 2017 to 2018 except a small decrease in Unmetered Scattered Load (USL). The largest increase was in residential customers – 549.
- kWh totals were substantially higher for residential and GS <50 kW customer classes. 2017 was an unusually low consumption year and 2018 was above average. USL kWh was lower than prior year but by an immaterial amount.
- kW totals were higher for GS > 50 kW, Embedded Distributor and the Direct Market Participants (DMP). GS > 50 kW increased due to a warmer weather year. There was an additional DMP in 2018 which accounted for the increase in usage and the change in Embedded Distributor increased by an immaterial amount. The Large Use and Street Lighting rate classes decreased by an immaterial amount.

1 **Table 3-34 Average Consumption – 2018 Actual vs 2017 Actual**

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather-Actual			Weather-Normalized		
		2017	2018	Difference	2017	2018	Difference
Residential	kWh	7,918	8,165	3.1%	8,137	7,969	-2.1%
GS < 50 kW	kWh	32,857	33,915	3.2%	33,769	33,099	-2.0%
GS > 50 kW	kW	2,377	2,392	0.6%	2,443	2,334	-4.4%
Large User	kW	177,858	173,376	-2.5%	182,792	169,205	-7.4%
Unmetered Scattered Load	kWh	4,872	4,847	-0.5%	5,007	4,730	-5.5%
Street Lighting	kW	1.11	0.67	-39.1%	1.14	0.66	-42.2%
Embedded Distributor	kW	80,788	85,275	5.6%	83,029	83,224	0.2%
Direct Market Participant	kW	5,883	8,392	42.7%	6,046	8,190	35.5%

- 2 • Large User, Embedded Distributor and Direct Market Participant variance analysis
3 per customer is the same as the Billing Determinant analysis since there are very
4 few (or a single) customers in each class.
- 5 • Residential, GS < 50 kW, GS > 50 kW and Unmetered Scattered Load weather-
6 normalized average consumption/demand values are all slightly lower for 2018
7 than 2017. This is largely due to continuing conservation efforts through CDM
8 programs. This downward trend is consistent with results dating back to the mid-
9 2000's.
- 10 • Streetlight average demand decreased significantly in 2018 due to the continued
11 conversion of streetlights to LED bulbs throughout WNH's service territory.
- 12 • Since 2018 had a comparatively cold winter and warm summer compared to the
13 10-year average, all weather-actual averages are higher than the weather-
14 normalized values.

2019 Actual vs 2018 Actual

Table 3-35 Distribution Revenue - 2019 Actual vs 2018 Actual

Distribution Revenues	2018 Actual	2019 Actual	2019 Actual vs 2018 Actual
Residential	18,947,598	19,042,091	94,493
GS < 50 kW	5,469,187	5,521,922	52,735
GS > 50 kW	9,855,084	9,621,964	(233,120)
Large User	800,321	783,530	(16,791)
Unmetered Scattered Load	104,855	106,553	1,698
Street Lighting	153,640	154,033	393
Embedded Distributor	1,746	1,826	80
Total	35,332,431	35,231,919	(100,512)

Table 3-35 shows that there was a material revenue variance for GS > 50 kW, which decreased due to the decrease in kW. However, this would have been partially offset by the price cap increase noted above.

Table 3-36 Billing Determinants - 2019 Actual vs 2018 Actual

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2018 Actual	2019 Actual	Difference	2018 Actual	2019 Actual	2018 Actual	2019 Actual	
Residential	50,664	51,041	377	413,689,291	406,423,263			(7,266,028)
GS < 50 kW	5,838	5,867	29	197,978,623	198,022,375			43,752
GS > 50 kW	751	752	1			1,795,199	1,752,761	(42,438)
Large User	1	1	-			173,376	169,281	(4,095)
Unmetered Scattered Load	543	530	(13)	2,629,284	2,771,071			141,787
Street Lighting	14,545	14,694	149			9,804	9,891	87
Embedded Distributor	1	1	-			85,275	89,358	4,083
Direct Market Participant	3	3	-			25,177	18,270	(6,907)
Total	72,346	72,889	543	614,297,198	607,216,709	2,088,831	2,039,561	

- Table 3-36 shows that customer count totals for all rate classes increased (or stayed the same) from 2018 to 2019 except a small decrease in USL. The largest increase was in residential customers – 377. In 2019, residential was 100% fully fixed.

- kWh totals were substantially lower for residential. 2019 was an unusually low consumption year and 2018 was above average. GS < 50 kW and USL kWh were higher than prior year but by an immaterial amount.
- kW totals were lower for GS > 50 kW, Large User and the Direct Market Participants (DMP) by an immaterial amount. The Embedded Distributor and Street Lighting rate classes increased by an immaterial amount.

Table 3-37 Average Consumption – 2019 Actual vs 2018 Actual

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather-Actual			Weather-Normalized		
		2018	2019	Difference	2018	2019	Difference
Residential	kWh	8,165	7,963	-2.5%	7,969	7,933	-0.5%
GS < 50 kW	kWh	33,915	33,755	-0.5%	33,099	33,627	1.6%
GS > 50 kW	kW	2,392	2,331	-2.6%	2,334	2,322	-0.5%
Large User	kW	173,376	169,281	-2.4%	169,205	168,641	-0.3%
Unmetered Scattered Load	kWh	4,847	5,233	8.0%	4,730	5,214	10.2%
Street Lighting	kW	0.67	0.67	-0.1%	0.66	0.67	1.9%
Embedded Distributor	kW	85,275	89,358	4.8%	83,224	89,020	7.0%
Direct Market Participant	kW	8,392	6,090	-27.4%	8,190	6,067	-25.9%

- Large User, Embedded Distributor and Direct Market Participant variance analysis per customer is the same as the Billing Determinant analysis since there are very few (or a single) customers in each class.
- Residential and GS > 50 kW weather-normalized average consumption/demand values are all slightly lower for 2019 than 2018. This is largely due to continuing conservation efforts through CDM programs. This downward trend is consistent with results dating back to the mid-2000's.
- Streetlight weather-normalized average demand is level between 2019 and 2018 due to the completion of the conversion of street lights to LED bulbs in 2018.
- GS < 50 kW weather-normalized average consumption increased in 2019 by an immaterial amount.

- In 2019, the Light Rail Transit (LRT) system went live and several bus stops that were previously unmetered, low-consumption connections were removed from service, causing the average consumption per connection to increase.
- Since 2018 had a comparatively cold winter and warm summer compared to the 10-year average, all weather-actual averages in 2019 are lower than the weather-normalized values.

2020 Bridge Year vs 2019 Actual

Table 3-38 Distribution Revenue – 2020 Bridge vs 2019 Actual

Distribution Revenues	2019 Actual	2020 Bridge	2019 Actual vs 2020 Bridge
Residential	19,042,091	19,761,902	719,811
GS < 50 kW	5,521,922	5,646,605	124,683
GS > 50 kW	9,621,964	9,905,561	283,597
Large User	783,530	818,993	35,463
Unmetered Scattered Load	106,553	112,439	5,886
Street Lighting	154,033	153,401	(632)
Embedded Distributor	1,826	2,174	348
Total	35,231,919	36,401,075	1,169,156

Table 3-38 shows that there were material revenue variances from the residential and GS > 50 kW rate classes. The Residential rate class increased due to the increase in customer count as well as the price cap increase of 1.7%. WNH anticipates a load decrease for GS > 50 kW however this is offset by the price cap increase of 1.7%.

1 **Table 3-39 Billing Determinants – 2020 Bridge vs 2019 Actual**

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2019 Actual	2020 Bridge	Difference	2019 Actual	2020 Bridge	2019 Actual	2020 Bridge	
Residential	51,041	51,383	342	406,423,263	399,456,598			(6,966,665)
GS < 50 kW	5,867	5,924	57	198,022,375	196,886,108			(1,136,267)
GS > 50 kW	752	752	-			1,752,761	1,719,145	(33,616)
Large User	1	1	-			169,281	172,288	3,007
Unmetered Scattered Load	530	535	5	2,771,071	2,916,211			145,140
Street Lighting	14,694	14,847	153			9,891	9,204	(687)
Embedded Distributor	1	1	-			89,358	103,033	13,675
Direct Market Participant	3	3	-			18,270	22,951	4,681
Total	72,889	73,446	557	607,216,709	599,258,917	2,039,561	2,026,621	

- 2 • Table 3-39 shows that customer count totals for all rate classes increased (or
3 stayed the same) from 2019 to 2020. The largest increase was in residential
4 customers – 342.
- 5 • The 2020 Bridge Year consumption is weather normalized; the results are from
6 WNH's Load Forecast Model used in this Application. The difference is apparent
7 in the Residential and GS < 50 kW rate class whereby the load was weather
8 sensitive and the weather normalized results are lower than the 2019 Actual
9 results.
- 10 • The variance in other classes are immaterial amounts.

11
12 **Table 3-40 Average Consumption – 2020 Bridge vs 2019 Actual**

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather-Actual			Weather-Normalized		
		2019	2020 (W-N)	Difference	2019	2020	Difference
Residential	kWh	7,963	7,774	-2.4%	7,933	7,774	-2.0%
GS < 50 kW	kWh	33,755	33,234	-1.5%	33,627	33,234	-1.2%
GS > 50 kW	kW	2,331	2,285	-2.0%	2,322	2,285	-1.6%
Large User	kW	169,281	172,288	1.8%	168,641	172,288	2.2%
Unmetered Scattered Load	kWh	5,233	5,453	4.2%	5,214	5,453	4.6%
Street Lighting	kW	0.67	0.62	-7.9%	0.67	0.62	-7.6%
Embedded Distributor	kW	89,358	103,033	15.3%	89,020	103,033	15.7%
Direct Market Participant	kW	6,090	7,650	25.6%	6,067	7,650	26.1%

- Large User, Embedded Distributor and Direct Market Participant variance analysis per customer is the same as the Billing Determinant analysis since there are very few (or a single) customers in each class.
- As described in 2.3.1.2 (Table 3-15), the geometric mean of growth in consumption per customer was applied to determine the non-normalized forecast for the 2020 Bridge year. Weather sensitivity factors by rate class were applied per Table 3-18. kWh/kW relationships trends were applied to obtain kW forecasts where applicable. This resulted in average decreases for Residential, GS < 50 kW, GS > 50 kW and Street Lighting classes with increases for all other classes. This is consistent with the trends in weather-normalized average consumption/demand per customer/connection in historical years above.
- 2020 weather-normalized differences from the 2019 weather-actual amounts are all in line with weather-normalized variances with the exception of slight weather-caused differences in 2019 as expected.

2021 Test Year vs 2020 Bridge Year

Table 3-41 Distribution Revenue – 2021 Test vs 2020 Bridge

Distribution Revenues	2020 Bridge	2021 Test	2020 Bridge vs 2021 Test
Residential	19,761,902	21,315,456	1,553,554
GS < 50 kW	5,646,605	6,055,336	408,731
GS > 50 kW	9,905,561	10,774,523	868,962
Large User	818,993	863,967	44,974
Unmetered Scattered Load	112,439	120,471	8,032
Street Lighting	153,401	166,118	12,717
Embedded Distributor	2,174	2,216	42
Total	36,401,075	39,298,087	2,897,012

Table 3-41 shows that there were material revenue variances from the residential, GS < 50 kW and GS > 50 kW rate classes. The main increases are due to the impact of rebasing with the remaining being due to an increase in customer count.

1 **Table 3-42 Billing Determinants – 2021 Test vs 2020 Bridge**

Billing Determinants	Customer/Connections			kWh		kW		Volumetric Difference
	2020 Bridge	2021 Test	Difference	2020 Bridge	2021 Test	2020 Bridge	2021 Test	
Residential	51,383	51,719	336	399,456,598	395,056,934			(4,399,664)
GS < 50 kW	5,924	5,989	65	196,886,108	195,573,807			(1,312,301)
GS > 50 kW	752	771	19			1,719,145	1,741,685	22,540
Large User	1	1	-			172,288	169,287	(3,001)
Unmetered Scattered Load	535	540	5	2,916,211	2,947,114			30,903
Street Lighting	14,847	15,005	158			9,204	9,302	98
Embedded Distributor	1	1	-			103,033	103,033	-
Direct Market Participant	3	3	-			22,951	22,951	-
Total	73,446	74,029	583	599,258,917	593,577,855	2,026,621	2,046,258	

- 2 • Table 3-42 shows that customer count totals for all rate classes increased (or
3 stayed the same) from 2020 to 2021. The largest increase was in residential
4 customers – 336.
- 5 • Year over year changes are a result of the inputs to the Load Forecast Model,
6 which is explained in detail above. Flat growth rates, minimal decreases to kWh,
7 and a flat level of kW are appropriate on a go forward basis for rate setting
8 purposes, as shown in Table 3-42.

9
10 **Table 3-43 Average Consumption – 2021 Test vs 2020 Bridge**

Average Consumption or Demand per Customer/Connection	kWh/kW	Weather-Actual			Weather-Normalized		
		2020	2021	Difference	2020	2021	Difference
Residential	kWh				7,774	7,639	-1.7%
GS < 50 kW	kWh				33,234	32,655	-1.7%
GS > 50 kW	kW				2,285	2,259	-1.2%
Large User	kW				172,288	169,287	-1.7%
Unmetered Scattered Load	kWh				5,453	5,453	0.0%
Street Lighting	kW				0.62	0.62	0.0%
Embedded Distributor	kW				103,033	103,033	0.0%
Direct Market Participant	kW				7,650	7,650	0.0%

- 11 • When determining the billed energy forecast as described in 2.3.1.2, non-
12 normalized consumption per customer/connection was held constant between
13 2020 and 2021. Moreover, the same 10-year averages for Heating Degree Days

(HDD) and Cooling Degree Days (CDD) were used in the regression model. Therefore, the only differences between 2020 and 2021 forecasted average consumption per customer/connection occur due to the other regression variables, namely the calendar and persistent CDM. This results in slightly lower consumption/demand per customer for Residential, GS <50 kW, GS > 50kW and Large User classes.

2.3.3 OTHER REVENUE

Other Distribution Revenues are revenues that are distribution related but are sourced from means other than distribution rates. For this reason, other revenues are deducted from WNH's proposed Revenue Requirement.

Other Distribution Revenues includes:

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

As a part of the review of Customer Service Rules (EB-2017-0183), WNH has taken into Consideration the proposed amendments to the Distribution System Code, Standard Supply Service Code, Unit Submetering Code, and Gas Distribution Access Rule. In light of these proposed amendments, WNH has adjusted its budgeted revenue for the proposed changes.

WNH has not proposed any new specific service charges or incorporated new rates or rules that would impact Other Revenue. In Exhibit 8, WNH is requesting new Specific Service Charges for Owner Requested Disconnection and Reconnection however these would be used as an offset to OM&A expenses instead of included in Other Revenue.

1 Also the changes to Customer Service Rules that were implemented in 2019 and 2020,
2 did not impact Other Revenue and again were an offset to OM&A expenses.

3
4 Table 3-44 below provides details on the Other Revenue included in WNH's Operating
5 Revenue which is consistent with the Other Revenue data provided in Table 3-1. Each
6 variance that is above the materiality threshold of \$190,000 as calculated in Exhibit 1,
7 Table 1-6, is highlighted in grey and an explanation for this variance is provided below in
8 Tables 3-45 to 3-50.

9
10 WNH notes that in the tables below and in Appendix 2-H, revenue and expenses from
11 affiliate transactions are recorded appropriately in Account 4375 and 4380, respectively.
12 These balances have been reconciled to Appendix 2-N – Shared Services and Corporate
13 Cost Allocation.

14
15 WNH confirms that microFIT charges are recorded as a revenue off-set in Account 4235
16 – Miscellaneous Service Revenue.

17
18 WNH does not deviate from Article 340 of the APH in any of the following disclosures.

19
20 WNH confirms that there are no discrete customer groups that will be materially impacted
21 by changes to other rates and charges.

1

Table 3-44 Other Revenue with Variance

USoA	Other Revenue	2016 Board Approved	2016 Actual	2016 Actual vs 2016 Board Approved	2017 Actual	2017 Actual vs. 2016 Actual	2018 Actual	2018 Actual vs. 2017 Actual	2019 Actual	2019 Actual vs. 2018 Actual	2020 Bridge	2020 Bridge Year vs. 2019 Actual	2021 Test	2021 Test vs. 2020 Bridge
4086	SSS Administration Charge Revenue	156,000	160,364	4,364	160,567	203	168,054	7,487	170,109	2,055	170,624	515	172,012	1,388
4082	Retail Services Revenue	29,000	56,603	27,603	48,776	(7,827)	54,417	5,641	57,302	2,885	57,302	-	36,000	(21,302)
4084	Service Transaction Requests (STR) Revenues		(28,866)	(28,866)	(25,036)	3,830	(26,457)	(1,421)	(28,651)	(2,194)	(28,651)	-	(18,000)	10,651
4210	Rent from Electric Property	256,383	259,370	2,987	264,430	5,060	277,568	13,138	284,725	7,157	268,517	(16,208)	520,319	251,802
4220	Other Electric Revenues	4,300		(4,300)	-	-	2	2	23	21		(23)		-
4225	Late Payment Charges	242,900	271,402	28,502	149,436	(121,966)	139,850	(9,586)	139,736	(114)	144,453	4,717	144,453	-
4235	Miscellaneous Service Revenues	355,500	372,400	16,900	359,970	(12,430)	403,891	43,921	325,427	(78,464)	378,376	52,949	382,269	3,893
4245	Government and other assistance directly credited to income		482,437	482,437	598,687	116,250	673,002	74,315	725,656	52,654	779,815	54,159	847,613	67,798
4305	Regulatory Debits	-	-	-		-	-	-		-		-	-	-
4310	Regulatory Credits	9,766		(9,766)		-	-	-		-		-	-	-
4335	Instrument Hedges	-	963,028	963,028	2,485,079	1,522,051	429,267	(2,055,812)	(1,493,869)	(1,923,136)		1,493,869		-
4355	Gain on Disposition of Utility and Other Property	-	(29,382)	(29,382)	8,592	37,974	72,578	63,986		(72,578)		-		-
4360	Loss on Disposition of Utility and Other Property	(10,987)	(14,796)	(3,809)	(13,675)	1,121	-	13,675	(54,685)	(54,685)		54,685	-	-
4375	Revenues for Non-Utility Operations	3,058,784	3,872,183	813,399	6,419,050	2,546,867	8,666,881	2,247,831	11,420,249	2,753,368	728,145	(10,692,104)	872,882	144,737
4380	Expenses for Non-Utility Operations	(3,010,050)	(3,809,120)	(799,070)	(6,355,377)	(2,546,257)	(8,064,916)	(1,709,539)	(11,385,858)	(3,320,942)	(695,526)	10,690,332	(857,809)	(162,283)
4390	Miscellaneous Non-Operating Income	125,000	188,802	63,802	124,925	(63,877)	104,609	(20,316)	78,149	(26,460)	103,178	25,029	95,929	(7,249)
4405	Interest and Dividend Income	7,000	71,229	64,229	51,816	(19,413)	173,898	122,082	133,723	(40,175)	55,000	(78,723)	55,000	-
Other Revenue		1,223,596	2,815,654	1,592,058	4,277,240	1,461,586	3,072,644	(1,204,596)	372,036	(2,700,608)	1,961,233	1,589,197	2,250,668	289,435

Variance Analysis of Other Revenue

2016 Actual vs 2016 Board Approved

Table 3-45 Other Revenue - 2016 Actual vs 2016 Board Approved

USoA	Other Revenue	2016 Board Approved	2016 Actual	2016 Actual vs 2016 Board Approved
4245	Government and other assistance directly credited to income	-	482,437	482,437
4335	Profits and Losses from Financial Instrument Hedges	-	963,028	963,028
4375	Revenues for Non-Utility Operations	3,058,784	3,872,183	813,399
4380	Expenses for Non-Utility Operations	(3,010,050)	(3,809,120)	(799,070)

The material changes include the following:

- In 2016 WNH included the amortization of deferred revenue in account 4245. This was implemented after the last COS and the change to MIFRS.
- Due to the changes in IFRS, WNH is required to record the profits and losses from Financial Instrument Hedges in account 4335. In 2016 there was a non-cash gain of \$963,028.
- Increases in both accounts 4375 and 4380 are due to higher CDM activity than projected. The increase in revenue is offset by the increase in cost.

2017 Actual vs 2016 Actual

Table 3-46 Other Revenue - 2017 Actual vs 2016 Actual

USoA	Other Revenue	2016 Actual	2017 Actual	2017 Actual vs. 2016 Actual
4335	Profits and Losses from Financial Instrument Hedges	963,028	2,485,079	1,522,051
4375	Revenues for Non-Utility Operations	3,872,183	6,419,050	2,546,867
4380	Expenses for Non-Utility Operations	(3,809,120)	(6,355,377)	(2,546,257)

The material changes include the following:

- In 2017 there was an increase in profit from Financial Instrument Hedges by \$1,522,051. This is a non-cash gain.
- Increases in both accounts 4375 and 4380 are due to higher CDM activity than 2016. The increase in revenue is offset by the increase in cost.

2018 Actual vs 2017 Actual

Table 3-47 Other Revenue - 2018 Actual vs 2017 Actual

USoA	Other Revenue	2017 Actual	2018 Actual	2018 Actual vs. 2017 Actual
4335	Profits and Losses from Financial Instrument Hedges	2,485,079	429,267	(2,055,812)
4375	Revenues for Non-Utility Operations	6,419,050	8,666,881	2,247,831
4380	Expenses for Non-Utility Operations	(6,355,377)	(8,064,916)	(1,709,539)

The material changes include the following:

- In 2018 there was a substantial decrease in profit from Financial Instrument Hedges by \$2,055,812. This is a non-cash loss.
- Increases in both accounts 4375 and 4380 are due to higher CDM activity than 2017. The increase in revenue is offset by the increase in cost. Additionally, WNH

received \$536,753 for the Conservation First Framework's mid-term incentive.
This was included in account 4375.

2019 Actual vs 2018 Actual

Table 3-48 Other Revenue - 2019 Actual vs 2018 Actual

USoA	Other Revenue	2018 Actual	2019 Actual	2019 Actual vs. 2018 Actual
4335	Profits and Losses from Financial Instrument Hedges	429,267	(1,493,869)	(1,923,136)
4375	Revenues for Non-Utility Operations	8,666,881	11,420,249	2,753,368
4380	Expenses for Non-Utility Operations	(8,064,916)	(11,385,858)	(3,320,942)

The material changes include the following:

- In 2019 there was a substantial loss recorded from Financial Instrument Hedges in the amount of \$1,923,136. This is a non-cash loss.
- Increases in both accounts 4375 and 4380 are due to CDM activity. The increase in revenue is offset by the increase in cost. The difference between the variances of accounts 4375 and 4380 is the mid-term incentive received in 2018. This was a one-time incentive and it was not received in 2019.

2020 Bridge Year vs 2019 Actual

Table 3-49 Distribution Revenue – 2020 Bridge vs 2019 Actual

USoA	Other Revenue	2019 Actual	2020 Bridge	2020 Bridge vs. 2019 Actual
4335	Profits and Losses from Financial Instrument Hedges	(1,493,869)	-	1,493,869
4375	Revenues for Non-Utility Operations	11,420,249	728,145	(10,692,104)
4380	Expenses for Non-Utility Operations	(11,385,858)	(695,526)	10,690,332

The material change includes the following:

- Final profit and losses from Financial Instrument Hedges are not predicted for 2020 Bridge as the year-end value is volatile and difficult to predict.
- Substantial decrease in accounts 4375 and 4380 because of the cancellation of the CDM program. Programs were still in effect up until 2019 however no program revenue or expenses have been projected for 2020.

2021 Test Year vs 2020 Bridge Year

Table 3-50 Other Revenue – 2021 Test vs 2020 Bridge

USoA	Other Revenue	2020 Bridge	2021 Test	2021 Test vs. 2020 Bridge
4210	Rent from Electric Property	268,517	520,319	251,802

The material change includes the following:

- Increase in revenue from pole attachment rates. In the OEB's Report on Wireline Pole Attachment Charges (EB-2015-0304) dated March 22, 2018 the OEB approved an increase to the Single Provincial Pole Attachment Charge however the increase in the attachment rate was held in a deferral account. In this Cost of Service Application, the updated pole attachment rate has been included in revenue. This increased other revenue by \$251,802.



ATTACHMENT 3-1

REQUIRED OEB APPENDICES

Note: Add all applicable accounts listed above to the table and include all relevant information.

Account Breakdown Details

For each "Other Operating Revenue" and "Other Income or Deductions" Account, a detailed breakdown of the account components is required. See the example below for Account 4405, Interest and Dividend Income. Tables for the detailed breakdowns will be generated after cell B89 is

Example: Account 4405 - Interest and Dividend Income

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Short-term Investment Interest						
Bank Deposit Interest						
Miscellaneous Interest Revenue						
etc. ¹						
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes:

- 1 List and specify any other interest revenue.
- 2 For applicants rebasing under IFRS for the first time, in the transition year (2014) to IFRS, the applicant is to present information in both MIFRS and CGAAP. In column N, present CGAAP transition year information.

Enter the number of "Other Operating Revenue" and "Other Income or Deductions" Accounts that require a detailed breakdown of the account components.

13

4082 - Retail Services Revenue						
	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Retail Service Revenue	-\$ 56,603	-\$ 48,776	-\$ 54,417	-\$ 57,302	-\$ 57,302	-\$ 36,000
Total	-\$ 56,603	-\$ 48,776	-\$ 54,417	-\$ 57,302	-\$ 57,302	-\$ 36,000

4084 - Service Transaction Requests (STR)						
	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
STR Revenue	\$ 28,866	\$ 25,036	\$ 26,457	\$ 28,651	\$ 28,651	\$ 18,000
Total	\$ 28,866	\$ 25,036	\$ 26,457	\$ 28,651	\$ 28,651	\$ 18,000

4086 - SSS Administration Revenue

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Residential	-\$ 143,298	-\$ 143,539	-\$ 150,115	-\$ 152,252	-\$ 152,153	-\$ 153,245
GS < 50 kW	-\$ 15,317	-\$ 15,215	-\$ 16,047	-\$ 15,966	-\$ 16,549	-\$ 16,784
GS > 50 kW	-\$ 1,763	-\$ 1,792	-\$ 1,870	-\$ 1,870	-\$ 1,902	-\$ 1,962
Embedded Distributor	-\$ 3	-\$ 3	-\$ 3	-\$ 3	-\$ 3	-\$ 3
Large User	\$ 3	-\$ 3	-\$ 3	-\$ 3	-\$ 3	-\$ 3
Streetlighting	\$ 15	-\$ 15	-\$ 15	-\$ 15	-\$ 15	-\$ 15
Total	-\$ 160,364	-\$ 160,567	-\$ 168,054	-\$ 170,109	-\$ 170,624	-\$ 172,012

4210 - Rent from Electric Property

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Rental Property	-\$ 4,639	-\$ 4,828	-\$ 4,992	-\$ 4,906	-\$ 5,181	-\$ 5,979
Rental Pole	-\$ 254,731	-\$ 259,602	-\$ 272,576	-\$ 279,819	-\$ 263,336	-\$ 514,340
Total	-\$ 259,370	-\$ 264,430	-\$ 277,568	-\$ 284,725	-\$ 268,517	-\$ 520,319

4220 - Other Electric Revenues

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Electric Car Charging			-\$ 2	-\$ 23		
Total	\$ -	\$ -	-\$ 2	-\$ 23	\$ -	\$ -

4245 - Government and Other Assistance D

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Deferred Revenue Amortization	-\$ 482,437	-\$ 598,687	-\$ 673,002	-\$ 725,656	-\$ 779,815	-\$ 847,613
Total	-\$ 482,437	-\$ 598,687	-\$ 673,002	-\$ 725,656	-\$ 779,815	-\$ 847,613

4335 - Profits and Losses from Financial Ins

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Unrealized gain/loss / Derivatives	-\$ 963,028	-\$ 2,485,079	-\$ 429,267	\$ 1,493,869	\$ -	\$ -
Total	-\$ 963,028	-\$ 2,485,079	-\$ 429,267	\$ 1,493,869	\$ -	\$ -

4355 - Gain on Disposition of Utility and Oth

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Disposition of Property	\$ 29,382	\$ 35,495	-\$ 72,578			
Disposition of Pooled Assets	\$ -	-\$ 44,087				
Total	\$ 29,382	-\$ 8,592	-\$ 72,578	\$ -	\$ -	\$ -

4360 - Loss on Disposition of Utility and Oth

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Disposition of Property	\$ 14,796	\$ 13,675	\$ -	\$ 54,685		
Disposition of Pooled Assets						
Total	\$ 14,796	\$ 13,675	\$ -	\$ 54,685	\$ -	\$ -

4375 - Revenues from Non Rate-Regulated

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Streetlight Cons. & Maint. - Affiliate	-\$ 760,703	-\$ 994,599	-\$ 754,902	-\$ 436,533	-\$ 670,015	-\$ 831,143
Streetlight Cons. & Maint. - Non-Affiliate	-\$ 113,570	\$ 97,577	\$ 29,362	-\$ 110,262	\$ -	\$ -
CDM Revenue	-\$ 2,892,973	-\$ 5,427,526	-\$ 7,716,662	-\$ 10,813,509	\$ -	\$ -
AFT Revenue			-\$ 125,493			
Other	-\$ 104,937	-\$ 94,502	-\$ 99,186	-\$ 59,945	-\$ 58,130	-\$ 41,739
Total	-\$ 3,872,183	-\$ 6,419,050	-\$ 8,666,881	-\$ 11,420,249	-\$ 728,145	-\$ 872,882

4380 - Expenses of Non Rate-Regulated Util

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Streetlight Cons. & Maint. - Affiliate	\$ 760,703	\$ 994,599	\$ 754,902	\$ 436,533	\$ 670,015	\$ 831,143
Streetlight Cons. & Maint. - Non-Affiliate	\$ 113,570	-\$ 97,577	-\$ 29,362	\$ 110,262	\$ -	\$ -
CDM Revenue	\$ 2,892,973	\$ 5,427,526	\$ 7,179,908	\$ 10,813,509	\$ -	\$ -
AFT Revenue	\$ -	\$ -	\$ 125,493		\$ -	\$ -
Other	\$ 41,875	\$ 30,830	\$ 33,975	\$ 25,554	\$ 25,511	\$ 26,666
Total	\$ 3,809,120	\$ 6,355,377	\$ 8,064,916	\$ 11,385,858	\$ 695,526	\$ 857,809

4390 - Miscellaneous Non-Operating Income

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Sale of Scrap	-\$ 188,802	-\$ 124,925	-\$ 104,609	-\$ 78,149	-\$ 103,178	-\$ 95,929
Total	-\$ 188,802	-\$ 124,925	-\$ 104,609	-\$ 78,149	-\$ 103,178	-\$ 95,929

4405 - Interest and Dividend Income

	2016 Actual ²	2017 Actual ²	2018 Actual ²	2019 Actual	Bridge Year	Test Year
	2016	2017	2018	2019	2020	2021
Reporting Basis						
Bank Interest	-\$ 8,443	-\$ 30,977	-\$ 81,751	-\$ 52,708	-\$ 30,000	-\$ 30,000
Other	-\$ 62,786	-\$ 20,840	-\$ 92,147	-\$ 81,015	-\$ 25,000	-\$ 25,000
Total	-\$ 71,229	-\$ 51,816	-\$ 173,898	-\$ 133,723	-\$ 55,000	-\$ 55,000

Appendix 2-IB

Customer, Connections, Load Forecast and Revenues Data and Analysis

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

Color coding for Cells:

	Data input		Drop-down List
	No data entry required		Blank or calculated value

Distribution System (Total)

	Calendar Year (for 2021 Cost of Service)		Consumption (kWh) ⁽³⁾			
				Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2015		Actual	1,441,031,603	1,460,102,447	
Historical	2016		Actual	1,444,462,268	1,454,444,014	
Historical	2017		Actual	1,409,167,205	1,448,259,305	
Historical	2018		Actual	1,467,265,689	1,431,971,524	
Historical	2019		Actual	1,438,045,052	1,432,603,768	
Bridge Year	2020		Forecast		1,430,063,908	
Test Year	2021		Forecast		1,431,623,886	

Variance Analysis	Year	Year-over-year		Versus OEB- approved
	2015			
	2016	0.2%	-0.4%	
	2017	-2.4%	-0.4%	
	2018	4.1%	-1.1%	
	2019	-2.0%	0.0%	
	2020		-0.2%	
	2021		0.1%	-3.7%
	Geometric Mean	-0.1%	-0.4%	-0.9%

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

1 Customer Class: Residential

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

kWh

	Calendar Year (for 2021 Cost of Service)	Customers				Consumption (kWh) ⁽⁵⁾				Consumption (kWh) per Customer			
							Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2015	Actual	48,750	OEB-approved	49,453	Actual	404,728,026	410,084,262	OEB-approved	408,868,804	Actual	8,302.11	8,411.98
Historical	2016	Actual	49,431			Actual	404,436,333	407,231,132			Actual	8,181.84	8,238.38
Historical	2017	Actual	50,115			Actual	396,801,470	407,809,251			Actual	7,917.82	8,137.47
Historical	2018	Actual	50,664			Actual	413,689,291	403,738,252			Actual	8,165.35	7,968.94
Historical	2019	Actual	51,041			Actual	406,423,263	404,885,436			Actual	7,962.76	7,932.63
Bridge Year	2020	Forecast	51,383			Forecast	399,456,598	399,456,598			Forecast	0.00	7,774.10
Test Year	2021	Forecast	51,719			Forecast	395,056,934	395,056,934			Forecast	0.00	7,638.53

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	1.4%		2016	-0.1%		2016	-1.4%	
	2017	1.4%		2017	-1.9%		2017	-3.2%	
	2018	1.1%		2018	4.3%		2018	3.1%	
	2019	0.7%		2019	-1.8%		2019	-2.5%	
	2020	0.7%	4.6%	2020	-1.3%	-3.4%	2020	-2.0%	-7.6%
	2021	0.7%		2021	-1.1%		2021	-1.7%	
	Geometric Mean	1.2%	1.1%	Geometric Mean	0.1%	-0.9%	Geometric Mean	-1.4%	-2.0%

	Calendar Year (for 2021 Cost of Service)	Revenues			
Historical	2015	Actual	\$ 18,031,469	OEB-approved	\$18,111,250
Historical	2016	Actual	\$ 18,020,359		
Historical	2017	Actual	\$ 18,233,438		
Historical	2018	Actual	\$ 18,947,598		
Historical	2019	Actual	\$ 19,042,091		
Bridge Year (Forecast)	2020	Forecast	\$ 19,761,902		
Test Year (Forecast)	2021	Forecast	\$ 21,315,457		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved
	2015		
	2016	-0.1%	
	2017	1.2%	
	2018	3.9%	
	2019	0.5%	
	2020	3.8%	17.7%
	2021	7.9%	
	Geometric Mean	3.4%	4.2%

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

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

kWh

	Calendar Year (for 2021 Cost of Service)	Customers				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer			
						Actual (Weather actual)		Weather- normalized		Actual (Weather actual)		Weather- normalized	
Historical	2015	Actual	5,623	OEB-approved	5,642	Actual	196,078,596	198,673,532	OEB-approved	Actual	34,873.92	35,335.44	OEB-approved 34,869.36
Historical	2016	Actual	5,700			Actual	193,116,426	194,450,929		Actual	33,883.05	34,117.19	
Historical	2017	Actual	5,782			Actual	189,981,988	195,252,331		Actual	32,857.49	33,769.00	
Historical	2018	Actual	5,838			Actual	197,978,623	193,216,370		Actual	33,914.97	33,099.16	
Historical	2019	Actual	5,867			Actual	198,022,375	197,273,096		Actual	33,754.77	33,627.05	
Bridge Year	2020	Forecast	5,924			Forecast		196,886,108		Forecast	0.00	33,233.94	
Test Year	2021	Forecast	5,989			Forecast		195,573,807		Forecast	0.00	32,654.96	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	1.4%		2016	-1.5%	-2.1%	2016	-2.8%	-3.4%
	2017	1.4%		2017	-1.6%	0.4%	2017	-3.0%	-1.0%
	2018	1.0%		2018	4.2%	-1.0%	2018	3.2%	-2.0%
	2019	0.5%		2019	0.0%	2.1%	2019	-0.5%	1.6%
	2020	1.0%		2020		-0.2%	2020		-1.2%
	2021	1.1%	6.2%	2021		-0.7%	2021		-1.7%
	Geometric Mean	1.3%	1.5%	Geometric Mean	0.3%	-0.3%	Geometric Mean	-1.1%	-1.6%
						-0.6%			-6.4%
					-0.1%			-1.6%	

	Calendar Year (for 2021 Cost of Service)	Revenues			
		Actual		OEB-approved	
Historical	2015	\$ 5,363,402	OEB-approved	\$5,265,016	
Historical	2016	\$ 5,082,529			
Historical	2017	\$ 5,223,258			
Historical	2018	\$ 5,469,187			
Historical	2019	\$ 5,521,922			
Bridge Year (Forecast)	2020	\$ 5,646,605			
Test Year (Forecast)	2021	\$ 6,055,336			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	-5.2%	
	2017	2.8%	
	2018	4.7%	
	2019	1.0%	
	2020	2.3%	
	2021	7.2%	
	Geometric Mean	2.5%	3.6%

3 Customer Class: **GS > 50 kW (including DMP)**

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

kW

	Calendar Year (for 2021 Cost of Service)	Customers				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer			
		Actual				Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	699	OEB-approved	695	Actual	703,439,409	712,748,840	OEB-approved	Actual	1,006,351.09	1,019,669.30	OEB-approved
Historical	2016	Actual	717			Actual	707,835,197	712,726,590		Actual	987,217.85	994,039.87	
Historical	2017	Actual	737			Actual	684,895,297	703,895,168		Actual	929,301.62	955,081.64	
Historical	2018	Actual	754			Actual	715,101,939	697,900,606		Actual	948,411.06	925,597.62	
Historical	2019	Actual	755			Actual	692,168,006	689,548,976		Actual	916,778.82	913,309.90	
Bridge Year	2020	Forecast	755			Forecast		688,238,078		Forecast	0.00	911,573.61	
Test Year	2021	Forecast	774			Forecast		697,140,723		Forecast	0.00	900,698.61	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	2.6%		2016	0.6%		2016	-1.9%	
	2017	2.8%		2017	-3.2%		2017	-5.9%	
	2018	2.3%		2018	4.4%		2018	2.1%	
	2019	0.1%		2019	-3.2%		2019	-3.3%	
	2020	0.0%		2020	-0.2%		2020	-0.2%	
	2021	2.5%		2021	1.3%		2021	-1.2%	
	Geometric Mean	2.1%	11.4%	Geometric Mean	-0.5%	-4.3%	Geometric Mean	-3.1%	-14.1%
			2.7%		-0.4%	-1.1%		-2.5%	-3.7%

	Calendar Year (for 2021 Cost of Service)	Revenues				Demand (kW)				Demand (kW) per Customer			
		Actual				Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	\$ 9,068,209	OEB-approved	\$9,477,308	Actual	1,747,019	1,770,139	OEB-approved	Actual	2,499.3119	2,532.3876	OEB-approved
Historical	2016	Actual	\$ 9,641,250			Actual	1,808,767	1,821,266		Actual	2,522.6876	2,540.1202	
Historical	2017	Actual	\$ 9,572,272			Actual	1,758,784	1,807,576		Actual	2,386.4098	2,452.6127	
Historical	2018	Actual	\$ 9,855,084			Actual	1,820,376	1,776,588		Actual	2,414.2918	2,356.2175	
Historical	2019	Actual	\$ 9,621,964			Actual	1,771,031	1,764,330		Actual	2,345.7364	2,336.8608	
Bridge Year (Forecast)	2020	Forecast	\$ 9,905,561			Forecast		1,742,096		Forecast		2,307.4119	
Test Year (Forecast)	2021	Forecast	\$ 10,774,523			Forecast		1,764,636		Forecast		2,279.8915	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	6.3%		2016	3.5%		2016	0.9%	
	2017	-0.7%		2017	-2.8%		2017	-5.4%	
	2018	3.0%		2018	3.5%		2018	1.2%	
	2019	-2.4%		2019	-2.7%		2019	-2.8%	
	2020	2.9%		2020	-1.3%		2020	-1.3%	
	2021	8.8%		2021	1.3%		2021	-1.2%	
	Geometric Mean	3.5%	13.7%	Geometric Mean	0.3%	-1.3%	Geometric Mean	-1.6%	-11.3%
			3.3%		-0.1%	-0.3%		-1.7%	-2.4%

4 Customer Class: Large Use > 5M

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

kW

	Calendar Year (for 2021 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer			
		Actual			Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	1	OEB-approved		92,984,875	94,215,452	OEB-approved	Actual	92,984,875.48	94,215,452.26	OEB-approved 94,944,937.00
Historical	2016	Actual	1			95,179,112	95,836,833		Actual	95,179,111.57	95,836,832.91	
Historical	2017	Actual	1			95,093,184	97,731,190		Actual	95,093,183.78	97,731,190.31	
Historical	2018	Actual	1			98,366,842	96,000,688		Actual	98,366,841.70	96,000,688.38	
Historical	2019	Actual	1			96,183,866	95,819,924		Actual	96,183,865.58	95,819,924.49	
Bridge Year	2020	Forecast	1			Forecast	97,396,631		Forecast	0.00	97,396,630.70	
Test Year	2021	Forecast	1			Forecast	95,699,867		Forecast	0.00	95,699,867.26	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	0.0%		2016	2.4%	1.7%	2016	2.4%	1.7%
	2017	0.0%		2017	-0.1%	2.0%	2017	-0.1%	2.0%
	2018	0.0%		2018	3.4%	-1.8%	2018	3.4%	-1.8%
	2019	0.0%		2019	-2.2%	-0.2%	2019	-2.2%	-0.2%
	2020	0.0%		2020		1.6%	2020		1.6%
	2021	0.0%	0.0%	2021		-1.7%	2021		-1.7%
	Geometric Mean	0.0%	0.0%	Geometric Mean	1.1%	0.3%	Geometric Mean	1.1%	0.3%

	Calendar Year (for 2021 Cost of Service)	Revenues			Demand (kW)				Demand (kW) per Customer			
		Actual			Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	\$ 703,652	OEB-approved	Actual	170,151	172,402	OEB-approved	Actual	170,150.6000	172,402.4004	OEB-approved 173364.0000
Historical	2016	Actual	\$ 799,702		Actual	178,218	179,450		Actual	178,218.1500	179,449.7005	
Historical	2017	Actual	\$ 809,626		Actual	177,858	182,792		Actual	177,858.1936	182,792.2074	
Historical	2018	Actual	\$ 800,321		Actual	173,376	169,205		Actual	173,375.9088	169,205.4589	
Historical	2019	Actual	\$ 783,530		Actual	169,281	168,641		Actual	169,281.4464	168,640.9182	
Bridge Year (Forecast)	2020	Forecast	\$ 818,993		Forecast		172,288		Forecast		172,288.3209	
Test Year (Forecast)	2021	Forecast	\$ 863,967		Forecast		169,287		Forecast		169,286.8564	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	13.7%		2016	4.7%	4.1%	2016	4.7%	4.1%
	2017	1.2%		2017	-0.2%	1.9%	2017	-0.2%	1.9%
	2018	-1.1%		2018	-2.5%	-7.4%	2018	-2.5%	-7.4%
	2019	-2.1%		2019	-2.4%	-0.3%	2019	-2.4%	-0.3%
	2020	4.5%		2020		2.2%	2020		2.2%
	2021	5.5%	9.8%	2021		-1.7%	2021		-1.7%
	Geometric Mean	4.2%	2.4%	Geometric Mean	-0.1%	-0.3%	Geometric Mean	-0.1%	-0.3%

5 Customer Class: Street Lighting

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

kW

	Calendar Year (for 2021 Cost of Service)	Connections				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Connection			
							Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2015	Actual	13,824	OEB-approved	13,828	Actual	7,608,120	7,708,807	OEB-approved	7,594,660	Actual	550.36	557.64
Historical	2016	Actual	13,864			Actual	7,638,394	7,691,178			Actual	550.97	554.78
Historical	2017	Actual	14,175			Actual	5,530,665	5,684,093			Actual	390.18	401.01
Historical	2018	Actual	14,545			Actual	3,498,479	3,414,325			Actual	240.53	234.74
Historical	2019	Actual	14,694			Actual	3,499,974	3,486,731			Actual	238.20	237.30
Bridge Year	2020	Forecast	14,847			Forecast		3,312,567			Forecast	0.00	223.11
Test Year	2021	Forecast	15,005			Forecast		3,347,727			Forecast	0.00	223.11

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved
	2015			2015			2015		
	2016	0.3%		2016	0.4%	-0.2%	2016	0.1%	-0.5%
	2017	2.2%		2017	-27.6%	-26.1%	2017	-29.2%	-27.7%
	2018	2.6%		2018	-36.7%	-39.9%	2018	-38.4%	-41.5%
	2019	1.0%		2019	0.0%	2.1%	2019	-1.0%	1.1%
	2020	1.0%		2020		-5.0%	2020		-6.0%
	2021	1.1%	8.5%	2021		1.1%	2021		0.0%
	Geometric Mean	1.7%	2.1%	Geometric Mean	-22.8%	-15.4%	Geometric Mean	-24.4%	-16.7%
					-55.9%			-59.4%	
					-18.5%			-20.2%	

	Calendar Year (for 2021 Cost of Service)	Revenues				Demand (kW)				Demand (kW) per Connection			
							Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2015	Actual	\$ 236,996	OEB-approved	\$255,006	Actual	21,206	21,487	OEB-approved	21,115	Actual	1.5340	1.5543
Historical	2016	Actual	\$ 252,249			Actual	21,346	21,493			Actual	1.5397	1.5504
Historical	2017	Actual	\$ 207,078			Actual	15,685	16,120			Actual	1.1065	1.1372
Historical	2018	Actual	\$ 153,640			Actual	9,804	9,568			Actual	0.6740	0.6578
Historical	2019	Actual	\$ 154,033			Actual	9,891	9,853			Actual	0.6731	0.6706
Bridge Year (Forecast)	2020	Forecast	\$ 153,401			Forecast		9,204			Forecast		0.6199
Test Year (Forecast)	2021	Forecast	\$ 166,118			Forecast		9,302			Forecast		0.6199

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved
	2015			2015			2015		
	2016	6.4%		2016	0.7%	0.0%	2016	0.4%	-0.3%
	2017	-17.9%		2017	-26.5%	-25.0%	2017	-28.1%	-26.6%
	2018	-25.8%		2018	-37.5%	-40.6%	2018	-39.1%	-42.2%
	2019	0.3%		2019	0.9%	3.0%	2019	-0.1%	1.9%
	2020	-0.4%		2020		-6.6%	2020		-7.6%
	2021	8.3%		2021		1.1%	2021		0.0%
	Geometric Mean	-6.9%		Geometric Mean	-17.4%	-13.0%	Geometric Mean	-18.6%	-14.2%
			-34.9%			-55.9%			-59.4%
		-10.2%			-15.1%			-16.5%	

6 Customer Class: Unmetered Scattered Load

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

kWh

	Calendar Year (for 2021 Cost of Service)	Connections				Consumption (kWh) ⁽³⁾				Consumption (kWh) per Connection			
							Actual (Weather actual)	Weather- normalized	Weather- normalized		Actual (Weather actual)	Weather- normalized	Weather- normalized
Historical	2015	Actual	530	OEB-approved	563	Actual	2,649,180	2,684,240	OEB-approved	3,140,372	Actual	5,003.17	5,069.39
Historical	2016	Actual	536			Actual	2,729,041	2,747,900			Actual	5,096.25	5,131.47
Historical	2017	Actual	550			Actual	2,679,470	2,753,802			Actual	4,871.76	5,006.91
Historical	2018	Actual	543			Actual	2,629,284	2,566,038			Actual	4,846.61	4,730.02
Historical	2019	Actual	530			Actual	2,771,071	2,760,586			Actual	5,233.37	5,213.57
Bridge Year	2020	Forecast	535			Forecast		2,916,211			Forecast	0.00	5,452.71
Test Year	2021	Forecast	540			Forecast		2,947,114			Forecast	0.00	5,452.71

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	1.1%		2016	3.0%	2.4%	2016	1.9%	1.2%
	2017	2.7%		2017	-1.8%	0.2%	2017	-4.4%	-2.4%
	2018	-1.4%		2018	-1.9%	-6.8%	2018	-0.5%	-5.5%
	2019	-2.4%		2019	5.4%	7.6%	2019	8.0%	10.2%
	2020	1.0%		2020		5.6%	2020		4.6%
	2021	1.1%	-4.0%	2021		1.1%	2021		0.0%
	Geometric Mean	0.4%	-1.0%	Geometric Mean	1.5%	1.9%	Geometric Mean	1.5%	1.5%
						-1.6%			-0.6%

	Calendar Year (for 2021 Cost of Service)	Revenues			
Historical	2015	Actual	\$ 153,590	OEB-approved	\$114,167
Historical	2016	Actual	\$ 109,155		
Historical	2017	Actual	\$ 106,640		
Historical	2018	Actual	\$ 104,855		
Historical	2019	Actual	\$ 106,553		
Bridge Year (Forecast)	2020	Forecast	\$ 112,439		
Test Year (Forecast)	2021	Forecast	\$ 120,471		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved
	2015		
	2016	-28.9%	
	2017	-2.3%	
	2018	-1.7%	
	2019	1.6%	
	2020	5.5%	
	2021	7.1%	5.5%
	Geometric Mean	-4.7%	1.4%

7 Customer Class: **Embedded Distributor**

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

kW

	Calendar Year (for 2021 Cost of Service)	Customers			Consumption (kWh) ⁽³⁾				Consumption (kWh) per Customer			
		Actual			Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	1	OEB-approved	1	Actual	33,543,395	33,987,314	Actual	33,543,395.27	33,987,313.95	OEB-approved 31,378,863.00
Historical	2016	Actual	1			Actual	33,527,765	33,759,453	Actual	33,527,764.78	33,759,453.50	
Historical	2017	Actual	1			Actual	34,185,131	35,133,470	Actual	34,185,131.10	35,133,470.36	
Historical	2018	Actual	1			Actual	36,001,231	35,135,244	Actual	36,001,231.44	35,135,244.17	
Historical	2019	Actual	1			Actual	38,976,498	38,829,019	Actual	38,976,498.05	38,829,018.54	
Bridge Year	2020	Forecast	1			Forecast		41,857,714	Forecast	0.00	41,857,714.19	
Test Year	2021	Forecast	1			Forecast		41,857,714	Forecast	0.00	41,857,714.19	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	0.0%		2016	0.0%		2016	0.0%	
	2017	0.0%		2017	2.0%		2017	2.0%	
	2018	0.0%		2018	5.3%		2018	5.3%	
	2019	0.0%		2019	8.3%		2019	8.3%	
	2020	0.0%		2020	7.8%		2020	7.8%	
	2021	0.0%		2021	0.0%		2021	0.0%	
	Geometric Mean	0.0%	0.0%	Geometric Mean	5.1%	7.5%	Geometric Mean	5.1%	7.5%

	Calendar Year (for 2021 Cost of Service)	Revenues			Demand (kW)				Demand (kW) per Customer			
		Actual			Actual (Weather actual)	Weather- normalized		Weather- normalized	Actual (Weather actual)	Weather- normalized		Weather- normalized
Historical	2015	Actual	\$ 945	OEB-approved	\$1,437	Actual	75,403	76,401	Actual	75,403.4300	76,401.3311	OEB-approved 71406.0000
Historical	2016	Actual	\$ 1,564			Actual	78,348	78,889	Actual	78,347.7700	78,889.1808	
Historical	2017	Actual	\$ 1,772			Actual	80,788	83,029	Actual	80,787.8100	83,028.9672	
Historical	2018	Actual	\$ 1,746			Actual	85,275	83,224	Actual	85,275.3019	83,224.0574	
Historical	2019	Actual	\$ 1,826			Actual	89,358	89,020	Actual	89,358.4336	89,020.3186	
Bridge Year (Forecast)	2020	Forecast	\$ 2,174			Forecast		103,033	Forecast		103,033.3324	
Test Year (Forecast)	2021	Forecast	\$ 2,216			Forecast		103,033	Forecast		103,033.3324	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved	Year	Year-over-year	Test Year Versus OEB- approved
	2015			2015			2015		
	2016	65.5%		2016	3.9%		2016	3.9%	
	2017	13.3%		2017	3.1%		2017	3.1%	
	2018	-1.5%		2018	5.6%		2018	5.6%	
	2019	4.6%		2019	4.8%		2019	4.8%	
	2020	19.1%		2020	15.7%		2020	15.7%	
	2021	1.9%		2021	0.0%		2021	0.0%	
	Geometric Mean	18.6%	11.4%	Geometric Mean	4.3%	7.6%	Geometric Mean	4.3%	7.6%



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LOAD FORECAST

	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Weather Normal	2021 Weather Normal
Actual kWh Purchases	1,269,973,824	1,294,310,410	1,358,556,813	1,372,533,120	1,423,569,039	1,421,429,683	1,411,764,680	1,479,129,865	1,488,841,981	1,499,089,218	1,499,180,241	1,489,942,245	1,485,911,225	1,494,900,181	1,454,056,279	1,518,504,309	1,483,499,736		
Predicted kWh Purchases	1,269,647,330	1,309,934,927	1,382,738,344	1,376,587,499	1,403,612,103	1,415,940,928	1,417,829,607	1,459,251,936	1,477,829,607	1,487,080,479	1,499,189,177	1,495,163,736	1,497,170,188	1,511,872,715	1,476,990,377	1,474,774,779			
% Difference	0.0%	1.2%	1.8%	0.3%	-1.4%	-0.4%	0.4%	-1.3%	-0.8%	-0.7%	0.0%	0.4%	0.8%	1.1%	1.6%	-1.1%	-0.6%	1,481,145,611	1,482,761,312
Billed kWh	1,216,900,996	1,249,737,840	1,304,584,908	1,326,077,776	1,367,527,466	1,370,617,488	1,360,402,644	1,425,614,249	1,437,226,191	1,450,973,841	1,448,566,259	1,447,248,320	1,441,031,603	1,444,462,268	1,409,167,205	1,467,265,689	1,438,045,052	1,430,063,908	1,431,623,886
By Class																			
Residential Customers	39,236	40,531	41,769	42,668	43,382	44,172	44,853	45,488	46,194	46,877	47,602	48,191	48,750	49,431	50,115	50,664	51,041	51,383	51,718
kWh	381,172,838	385,085,949	408,053,981	391,947,395	405,071,612	405,533,476	397,106,489	413,251,129	408,768,579	409,922,519	409,442,945	410,104,642	404,728,026	404,436,333	396,801,470	413,689,291	406,423,263	399,456,598	395,056,934
General Service < 50 kW Customers	4,967	5,001	5,062	5,119	5,151	5,184	5,253	5,343	5,407	5,454	5,503	5,547	5,623	5,700	5,782	5,838	5,867	5,924	5,989
kWh	178,733,409	181,654,718	187,375,742	189,284,333	192,047,825	185,031,934	179,794,279	185,040,278	187,070,265	190,189,482	194,737,949	197,096,102	196,078,596	193,116,426	189,981,988	197,978,623	198,022,375	196,886,108	195,573,807
General Service > 50 to 4999 kW Customers	646	632	623	622	627	647	663	663	666	667	668	681	697	715	735	751	752	752	771
kWh	581,134,405	606,602,563	627,713,059	660,327,538	682,785,512	693,615,296	697,125,703	734,775,051	725,123,828	716,491,037	705,737,128	699,842,688	696,649,002	701,389,229	678,663,686	706,516,406	683,561,942	679,022,051	687,924,696
kW	1,578,391	1,578,377	1,609,887	1,625,474	1,650,921	1,665,645	1,682,115	1,762,264	1,775,934	1,801,339	1,726,195	1,726,654	1,734,984	1,796,641	1,747,019	1,795,199	1,752,761	1,719,145	1,764,636
Large User Customers	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
kWh	65,433,586	66,067,057	70,553,960	73,668,918	77,115,461	76,733,608	76,507,951	82,593,009	84,249,637	86,740,767	90,202,679	91,205,251	92,984,875	95,179,112	95,093,184	98,366,842	96,183,866	97,396,631	95,699,867
kW	120,391	136,143	138,634	144,512	147,258	145,766	144,355	155,986	160,630	165,061	168,361	166,649	170,151	178,218	177,858	173,376	169,281	172,288	169,287
Direct Market Participant Customers	0	0	0	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	3
kWh	0	0																	

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-96	104,439,190				484,331	103,954,859	789.4	0	31	0	352	36,997	-	98,902,810	-5,052,049	-4.9%	4.9%
Feb-96	97,116,320				450,371	96,665,949	712.6	0	29	0	336	37,049	-	91,444,445	-5,221,504	-5.4%	5.4%
Mar-96	93,206,737				432,241	92,774,496	670.4	0	31	1	336	37,100	-	92,615,432	-159,064	-0.2%	0.2%
Apr-96	84,435,799				391,566	84,044,233	421.9	0	30	1	336	37,152	-	83,578,976	-465,257	-0.6%	0.6%
May-96	79,585,420				369,073	79,216,347	216.1	10	31	1	352	37,204	-	83,363,988	4,147,641	5.2%	5.2%
Jun-96	80,505,911				373,341	80,132,570	29.4	38.6	30	0	320	37,256	-	82,593,052	2,460,483	3.1%	3.1%
Jul-96	82,378,016				382,023	81,995,993	18.9	41.9	31	0	352	37,307	-	87,341,149	5,345,156	6.5%	6.5%
Aug-96	86,219,874				399,840	85,820,034	6.2	55.2	31	0	336	37,359	-	89,044,258	3,224,224	3.8%	3.8%
Sep-96	81,006,662				375,664	80,630,998	102.2	12.6	30	1	320	37,411	-	77,087,117	-3,543,881	-4.4%	4.4%
Oct-96	84,736,264				392,959	84,343,305	301.4	0	31	1	352	37,463	-	84,213,307	-129,997	-0.2%	0.2%
Nov-96	91,599,265				424,786	91,174,479	548.1	0	30	1	320	37,514	-	87,036,784	-4,137,695	-4.5%	4.5%
Dec-96	94,268,053				437,163	93,830,890	596.5	0	31	0	320	37,566	-	93,003,282	-827,608	-0.9%	0.9%
Jan-97	105,017,710				453,613	104,564,098	777.9	0	31	0	352	37,653	-	100,238,833	-4,325,264	-4.1%	4.1%
Feb-97	91,033,887				393,211	90,640,676	615	0	28	0	320	37,740	-	87,255,165	-3,385,511	-3.7%	3.7%
Mar-97	95,075,286				410,668	94,664,618	619.1	0	31	1	304	37,827	-	91,063,373	-3,601,245	-3.8%	3.8%
Apr-97	85,363,047				368,717	84,994,330	391.9	0	30	1	352	37,914	-	85,642,934	648,604	0.8%	0.8%
May-97	81,823,270				353,427	81,469,843	289	0	31	1	336	38,001	-	84,248,394	2,778,551	3.4%	3.4%
Jun-97	85,276,289				368,342	84,907,947	30.4	50.4	30	0	336	38,088	-	88,276,298	3,368,351	4.0%	4.0%
Jul-97	88,667,230				382,989	88,284,242	22.1	59.8	31	0	352	38,174	-	93,529,004	5,244,762	5.9%	5.9%
Aug-97	82,986,440				358,451	82,627,988	49.4	21.9	31	0	320	38,261	-	84,278,301	1,650,313	2.0%	2.0%
Sep-97	82,339,214				355,655	81,983,559	115.2	5.4	30	1	336	38,348	-	79,222,381	-2,761,178	-3.4%	3.4%
Oct-97	87,421,436				377,608	87,043,828	288.9	1.6	31	1	352	38,435	-	86,670,013	-373,815	-0.4%	0.4%
Nov-97	91,084,451				393,430	90,691,021	471.4	0	30	1	304	38,522	-	86,464,150	-4,226,872	-4.7%	4.7%
Dec-97	95,971,206				414,537	95,556,669	630.7	0	31	0	336	38,609	-	97,568,695	2,012,026	2.1%	2.1%
Jan-98	99,755,427				369,728	99,385,699	652.8	0	31	0	336	38,689	-	98,404,640	-981,059	-1.0%	1.0%
Feb-98	88,298,732				327,266	87,971,466	547.1	0	28	0	320	38,769	-	87,951,324	-20,142	0.0%	0.0%
Mar-98	96,142,109				356,336	95,785,773	505.1	0	31	1	352	38,849	-	93,391,173	-2,394,600	-2.5%	2.5%
Apr-98	82,977,188				307,542	82,669,646	312	0	30	1	336	38,929	-	85,013,787	2,344,141	2.8%	2.8%
May-98	85,056,523				315,249	84,741,274	77.1	16.8	31	1	320	39,009	-	83,568,164	-1,173,110	-1.4%	1.4%
Jun-98	90,611,662				335,838	90,275,824	66.7	63.7	30	0	352	39,089	-	95,703,542	5,427,719	6.0%	6.0%
Jul-98	93,536,614				346,679	93,189,935	6.9	64.8	31	0	352	39,168	-	96,701,356	3,511,421	3.8%	3.8%
Aug-98	94,443,253				350,040	94,093,214	12.1	83.1	31	0	320	39,248	-	99,089,677	4,996,464	5.3%	5.3%
Sep-98	87,162,869				323,056	86,839,813	63	26	30	1	336	39,328	-	84,753,860	-2,085,952	-2.4%	2.4%
Oct-98	87,958,219				326,004	87,632,215	257.6	0	31	1	336	39,408	-	86,944,203	-688,012	-0.8%	0.8%
Nov-98	91,550,898				339,319	91,211,579	440.1	0	30	1	336	39,488	-	90,000,119	-1,211,460	-1.3%	1.3%
Dec-98	96,499,820				357,662	96,142,158	572.1	0	31	0	336	39,568	-	98,372,974	2,230,816	2.3%	2.3%
Jan-99	106,347,680				391,586	105,956,094	789.6	0	31	0	320	39,656	-	103,663,340	-2,292,755	-2.2%	2.2%
Feb-99	92,242,601				339,649	91,902,952	578.4	0	28	0	320	39,744	-	91,287,729	-615,223	-0.7%	0.7%
Mar-99	99,528,299				366,476	99,161,823	592.5	0	31	1	368	39,833	-	99,313,654	151,832	0.2%	0.2%
Apr-99	85,709,380				315,593	85,393,787	332.6	0	30	1	336	39,921	-	88,093,343	2,699,555	3.2%	3.2%
May-99	85,001,059				312,985	84,688,074	126.7	10.5	31	1	320	40,009	-	86,101,831	1,413,756	1.7%	1.7%
Jun-99	96,876,658				356,712	96,519,946	44.4	76.5	30	0	352	40,097	-	100,423,143	3,903,198	4.0%	4.0%
Jul-99	102,363,582				376,916	101,986,666	3.2	138.9	31	0	336	40,185	-	114,392,496	12,405,830	12.2%	12.2%
Aug-99	92,128,742				339,230	91,789,512	28.8	30.9	31	0	336	40,273	-	91,744,647	-44,865	0.0%	0.0%
Sep-99	90,659,575				333,820	90,325,755	88.9	27.7	30	1	336	40,362	-	88,456,676	-1,869,079	-2.1%	2.1%
Oct-99	91,210,638				335,849	90,874,789	319	0	31	1	320	40,450	-	90,286,853	-587,935	-0.6%	0.6%
Nov-99	95,821,859				352,828	95,469,031	405.1	0	30	1	352	40,538	-	92,642,234	-2,826,796	-3.0%	3.0%
Dec-99	102,947,032				379,064	102,567,968	623.7	0	31	0	336	40,626	-	102,484,032	-83,936	-0.1%	0.1%
Jan-00	108,597,914				359,435	108,238,479	773	0	31	0	320	40,716	-	105,875,098	-2,363,381	-2.2%	2.2%
Feb-00	99,596,964				329,644	99,267,320	643.8	0	29	0	336	40,805	-	99,020,657	-246,662	-0.2%	0.2%
Mar-00	99,214,146				328,377	98,885,769	446.9	0	31	1	368	40,895	-	97,933,260	-952,509	-1.0%	1.0%
Apr-00	89,981,305				297,819	89,683,486	358.3	0	30	1	304	40,984	-	89,515,535	-167,951	-0.2%	0.2%
May-00	91,415,321				302,565	91,112,756	152.4	18.7	31	1	352	41,074	-	93,252,678	2,139,923	2.3%	2.3%
Jun-00	95,569,835				316,315	95,253,519	41.1	35.4	30	0	352	41,163	-	94,047,505	-1,206,014	-1.3%	1.3%
Jul-00	95,254,773				315,273	94,939,500	18.6	44.8	31	0	320	41,253	-	95,967,816	1,028,316	1.1%	1.1%
Aug-00	97,935,080				324,144	97,610,937	29.7	46.3	31	0	352	41,342	-	98,785,879	1,174,942	1.2%	1.2%
Sep-00	93,176,991				308,396	92,868,596	134	23.8	30	1	320	41,432	-	90,553,147	-2,315,449	-2.5%	2.5%
Oct-00	94,348,313				312,272	94,036,040	251.6	0	31	1	336	41,521	-	92,111,825	-1,924,216	-2.0%	2.0%
Nov-00	100,873,405				333,869	100,539,536	470.9	0	30	1	352	41,611	-	97,186,483	-3,353,053	-3.3%	3.3%
Dec-00	111,445,741				368,861	111,076,880	826.5	0	31	0	304	41,700	-	108,898,884	-2,177,995	-2.0%	2.0%

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-01	112,581,869				441,337	112,140,533	715	0	31	0	352	41,817	-	108,993,172	-3,147,360	-2.8%	2.8%
Feb-01	99,788,048	104,864			390,772	99,292,412	620.2	0	28	0	320	41,934	-	97,982,899	-1,309,513	-1.3%	1.3%
Mar-01	106,623,824	36,280			417,838	106,169,706	618.7	0	31	1	352	42,051	-	104,646,268	-1,523,439	-1.4%	1.4%
Apr-01	91,412,386	30,916			358,228	91,023,242	324.6	0	30	1	320	42,168	-	92,532,907	1,509,665	1.7%	1.7%
May-01	91,851,848	77,020			359,770	91,415,058	140.3	7.7	31	1	352	42,285	-	93,572,065	2,157,007	2.4%	2.4%
Jun-01	100,764,701	366,214			393,576	100,004,911	47	62.4	30	0	336	42,402	-	102,268,926	2,264,014	2.3%	2.3%
Jul-01	101,480,960	460,998			396,012	100,623,949	22.3	65.7	31	0	336	42,519	-	104,833,235	4,209,285	4.2%	4.2%
Aug-01	108,715,738	470,719			424,335	107,820,684	2.3	94.2	31	0	352	42,636	-	111,749,119	3,928,435	3.6%	3.6%
Sep-01	94,386,426	432,816			368,311	93,585,299	118.8	19.2	30	1	304	42,753	-	91,493,529	-2,091,770	-2.2%	2.2%
Oct-01	99,648,193	450,486			388,869	98,808,837	276.7	0	31	1	352	42,870	-	97,173,053	-1,635,784	-1.7%	1.7%
Nov-01	101,041,156	461,530			394,286	100,185,339	370.8	0	30	1	352	42,987	-	97,869,592	-2,315,748	-2.3%	2.3%
Dec-01	105,627,132	437,328			412,359	104,777,445	563.3	0	31	0	304	43,104	-	105,101,213	323,768	0.3%	0.3%
Jan-02	113,024,588	462,984			105,964	112,455,640	625.7	0	31	0	352	43,198	-	109,989,998	-2,465,642	-2.2%	2.2%
Feb-02	102,515,395	411,477			96,119	102,007,798	592	0	28	0	320	43,293	-	100,627,289	-1,380,509	-1.4%	1.4%
Mar-02	109,462,737	484,062			102,591	108,876,083	581.2	0	31	1	320	43,387	-	105,019,344	-3,856,739	-3.5%	3.5%
Apr-02	101,175,171	484,651			94,789	100,595,731	356.2	6.6	30	1	352	43,482	-	100,152,620	-443,111	-0.4%	0.4%
May-02	99,710,889	473,869			93,420	99,143,600	266.8	5.3	31	1	352	43,576	-	99,837,152	693,552	0.7%	0.7%
Jun-02	104,229,282	414,660			97,730	103,716,893	53.1	54.5	30	0	320	43,671	-	102,905,077	-811,815	-0.8%	0.8%
Jul-02	118,623,870	434,817			111,262	118,077,792	4.7	129	31	0	352	43,765	-	122,266,152	4,188,360	3.5%	3.5%
Aug-02	111,583,120	449,451			104,620	111,029,049	11	72.3	31	0	336	43,859	-	109,343,679	-1,685,370	-1.5%	1.5%
Sep-02	105,982,565	448,586			99,348	105,434,631	50.2	47	30	1	320	43,954	-	99,650,412	-5,784,219	-5.5%	5.5%
Oct-02	105,094,244	468,666			98,493	104,527,084	349.3	1	31	1	352	44,048	-	102,391,779	-2,135,305	-2.0%	2.0%
Nov-02	107,844,017	482,077			101,069	107,260,871	486.4	0	30	1	336	44,143	-	103,044,661	-4,216,210	-3.9%	3.9%
Dec-02	113,855,250	475,040			106,735	113,273,476	675.6	0	31	0	320	44,237	-	112,049,766	-1,223,710	-1.1%	1.1%
Jan-03	122,281,722	568,885			197,928	121,514,909	868.4	0	31	0	352	44,367	-	117,185,764	-4,329,145	-3.6%	3.6%
Feb-03	110,139,892	488,139			178,314	109,473,438	755.9	0	28	0	320	43,629	-	106,049,506	-3,423,933	-3.1%	3.1%
Mar-03	112,160,711	521,553			181,546	111,457,612	638.7	0	31	1	336	43,892	-	108,898,166	-2,559,446	-2.3%	2.3%
Apr-03	101,765,882	504,137			164,670	101,097,074	397.4	0.7	30	1	336	44,155	-	100,745,083	-351,991	-0.3%	0.3%
May-03	96,091,846	517,449			155,422	95,418,975	217	0	31	1	336	44,417	-	98,459,931	3,040,955	3.2%	3.2%
Jun-03	100,440,873	476,664			162,560	99,801,649	65.3	25.5	30	0	336	44,680	-	100,473,435	671,786	0.7%	0.7%
Jul-03	109,723,172	519,355			177,586	109,026,232	12.5	50.1	31	0	352	44,793	-	107,848,546	-1,177,686	-1.1%	1.1%
Aug-03	104,089,100	498,723			168,457	103,421,920	18.9	72.4	31	0	320	44,948	-	111,334,704	7,912,784	7.7%	7.7%
Sep-03	98,681,486	477,821			159,697	98,043,968	104.1	6	30	1	336	45,072	-	96,036,210	-2,007,758	-2.0%	2.0%
Oct-03	104,199,872	511,790			168,616	103,519,466	331.9	0	31	1	352	45,204	-	104,606,509	1,087,044	1.1%	1.1%
Nov-03	105,671,242	481,980			171,057	105,018,205	434.4	0	30	1	320	45,375	-	103,693,982	-1,324,223	-1.3%	1.3%
Dec-03	112,870,231	507,132			182,723	112,180,376	610	0	31	0	336	45,463	-	114,315,495	2,135,119	1.9%	1.9%
Jan-04	123,356,627	491,163			216,044	122,649,421	879.2	0	31	0	336	45,553	-	122,053,824	-595,597	-0.5%	0.5%
Feb-04	110,886,761	454,979			194,180	110,237,601	699.2	0	29	0	320	45,665	-	111,858,979	1,621,378	1.5%	1.5%
Mar-04	114,371,810	479,037			200,266	113,692,507	540.9	0	31	1	368	45,790	-	112,917,090	-775,417	-0.7%	0.7%
Apr-04	100,778,720	497,337			176,332	100,105,050	354.1	0	30	1	336	45,875	-	103,728,150	3,623,100	3.6%	3.6%
May-04	99,917,690	502,450			174,809	99,240,430	196.2	6.7	31	1	320	45,923	-	102,144,505	2,904,075	2.9%	2.9%
Jun-04	101,500,696	522,271			177,558	100,800,868	92.5	16.3	30	0	352	46,112	-	103,806,963	3,006,095	3.0%	3.0%
Jul-04	106,988,465	546,336			187,165	106,254,964	21.3	49.3	31	0	336	46,202	-	110,523,722	4,268,759	4.0%	4.0%
Aug-04	105,697,735	523,277			184,936	104,989,522	55	30.6	31	0	336	46,332	-	107,708,510	2,718,989	2.6%	2.6%
Sep-04	105,959,836	531,322			185,383	105,243,131	71.3	13.7	30	1	336	46,496	-	100,399,158	-4,843,973	-4.6%	4.6%
Oct-04	104,738,230	546,994			183,207	104,008,029	287.5	0	31	1	320	46,661	-	105,091,146	1,083,117	1.0%	1.0%
Nov-04	109,633,798	550,188			191,810	108,891,801	432.9	0	30	1	352	46,825	-	109,293,223	401,422	0.4%	0.4%
Dec-04	118,965,070	559,782			208,201	118,197,088	700.1	0	31	0	336	46,881	-	120,409,657	2,212,569	1.9%	1.9%
Jan-05	125,529,169	560,017			169,527	124,799,625	814.7	0	31	0	320	46,961	-	122,808,662	-1,990,963	-1.6%	1.6%
Feb-05	110,018,389	494,481	1,891		148,575	109,377,224	683.5	0	28	0	320	47,060	-	112,692,274	3,315,050	3.0%	3.0%
Mar-05	117,480,987	561,215	993		158,607	116,762,158	680.5	0	31	1	352	47,156	-	119,260,769	2,498,611	2.1%	2.1%
Apr-05	102,655,932	533,776	611		138,534	101,984,233	354.6	0	30	1	336	47,057	-	106,726,710	4,742,477	4.7%	4.7%
May-05	101,003,739	540,499	1,260		136,283	100,328,217	244.9	0	31	1	336	47,180	-	106,214,168	5,885,950	5.9%	5.9%
Jun-05	120,806,868	529,091	1,538		163,163	120,116,153	27.3	104.8	30	0	352	47,430	-	124,642,336	4,526,183	3.8%	3.8%
Jul-05	121,659,153	513,321	846		164,340	120,982,338	6.8	105.4	31	0	320	47,565	-	124,811,619	3,829,282	3.2%	3.2%
Aug-05	118,714,206	531,068	976		160,321	118,023,792	11.9	67.9	31	0	352	47,605	-	118,820,615	796,823	0.7%	0.7%
Sep-05	107,398,525	513,110	1,756		144,995	106,742,175	63.4	13.7	30	1	336	47,806	-	103,485,736	-3,256,439	-3.1%	3.1%
Oct-05	108,114,071	569,069	2,427		145,890	107,401,539	259.9	2.6	31	1	320	47,911	-	108,046,086	644,547	0.6%	0.6%
Nov-05	112,273,619	544,498	536		151,566	111,578,091	433.1	0	30	1	352	48,010	-	112,290,988	712,896	0.6%	0.6%
Dec-05	121,150,930	531,516	5,480		163,626	120,461,267	721.6	0	31	0	320	48,041	-	122,938,382	2,477,114	2.1%	2.1%

Month	Purchased kWh - Utilismart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-06	120,719,775	495,201	3,630		196,929	120,031,274	590.6	0	31	0	336	48,141	23,545	120,491,716	460,442	0.4%	0.4%
Feb-06	111,241,852	462,157	4,968		181,458	110,603,205	651.2	0	28	0	320	48,205	47,090	114,593,066	3,989,862	3.6%	3.6%
Mar-06	118,804,708	502,980	3,065		193,780	118,111,013	562.4	0	31	1	368	48,263	70,635	119,627,444	1,516,430	1.3%	1.3%
Apr-06	101,928,394	459,428	2,611		166,207	101,305,369	322.5	0	30	1	304	48,272	94,179	106,740,797	5,435,427	5.4%	5.4%
May-06	109,352,162		2,275		179,120	109,175,317	177.8	17.7	31	1	352	48,222	117,724	111,570,060	2,394,743	2.2%	2.2%
Jun-06	114,158,685		1,302		186,993	113,972,994	44.1	32.2	30	0	352	48,352	141,269	111,317,163	-2,655,831	-2.3%	2.3%
Jul-06	126,395,645		1,987		207,038	126,190,594	6.5	117.2	31	0	320	48,357	164,814	129,067,475	2,876,881	2.3%	2.3%
Aug-06	119,390,829		1,149		195,564	119,196,414	27.5	45.5	31	0	352	48,485	188,359	116,229,143	-2,967,272	-2.5%	2.5%
Sep-06	106,375,052		2,095		174,244	106,202,903	130.3	2.3	30	1	320	48,589	211,904	103,426,144	-2,776,759	-2.6%	2.6%
Oct-06	113,289,697		4,051		185,570	113,108,178	335.1	0	31	1	336	48,653	235,448	112,003,628	-1,104,550	-1.0%	1.0%
Nov-06	115,282,364		2,083		188,834	115,095,613	415.9	0	30	1	352	48,727	258,993	113,130,591	-1,965,022	-1.7%	1.7%
Dec-06	119,730,905		5,460		196,121	119,540,244	545.2	0	31	0	304	48,779	282,538	118,390,273	-1,149,972	-1.0%	1.0%
Jan-07	127,521,206		3,907		220,176	127,304,937	698.3	0	31	0	352	48,826	303,088	125,650,749	-1,654,188	-1.3%	1.3%
Feb-07	121,012,861		4,243		208,939	120,808,165	785.1	0	28	0	320	48,864	323,637	119,468,377	-1,339,789	-1.1%	1.1%
Mar-07	122,882,865	-	-		212,167	122,670,698	582	0	31	1	352	48,982	344,186	120,471,008	-2,199,690	-1.8%	1.8%
Apr-07	110,585,850	-	-		190,935	110,394,915	403	0	30	1	320	48,695	364,736	110,509,667	114,752	0.1%	0.1%
May-07	110,694,689	437			191,123	110,504,003	166.4	11.2	31	1	352	48,892	385,285	111,017,106	513,103	0.5%	0.5%
Jun-07	119,622,506	2,419			206,538	119,418,387	35.5	51.2	30	0	336	48,942	405,834	115,246,717	-4,171,670	-3.5%	3.5%
Jul-07	118,464,242	1,419			204,538	118,261,123	28	53.8	31	0	336	49,055	426,384	118,088,956	-172,167	-0.1%	0.1%
Aug-07	122,840,707	1,451			212,094	122,630,064	19.7	65.1	31	0	352	49,140	446,933	121,455,413	-1,174,650	-1.0%	1.0%
Sep-07	112,981,597	5,240			195,072	112,791,765	74.7	28	30	1	304	49,319	467,483	107,878,143	-4,913,622	-4.4%	4.4%
Oct-07	115,330,216	8,370			199,127	115,139,459	184.7	10.9	31	1	352	49,435	488,032	112,638,445	-2,501,014	-2.2%	2.2%
Nov-07	118,785,032	9,857			205,092	118,589,797	511.8	0	30	1	352	49,527	508,581	117,352,907	-1,236,890	-1.0%	1.0%
Dec-07	125,267,404	4,607			216,284	125,055,727	686.6	0	31	0	304	49,558	529,131	123,834,616	-1,221,111	-1.0%	1.0%
Jan-08	129,540,752	22,682			180,694	129,382,740	676.8	0	31	0	352	49,631	541,495	126,636,998	-2,745,742	-2.1%	2.1%
Feb-08	121,546,289	12,657			169,543	121,389,403	651.2	0	29	0	320	49,649	553,860	119,520,704	-1,868,699	-1.5%	1.5%
Mar-08	123,025,577	11,617			171,606	122,865,588	686.1	0	31	1	304	49,699	566,224	121,837,132	-1,028,456	-0.8%	0.8%
Apr-08	110,354,711	8,264			153,932	110,209,043	297.9	0	30	1	352	49,603	578,589	111,439,746	1,230,703	1.1%	1.1%
May-08	107,757,169	8,874			150,309	107,615,734	243.1	0.7	31	1	336	49,718	590,953	111,587,450	3,971,715	3.7%	3.7%
Jun-08	115,141,214	6,366			160,608	114,986,972	40.6	53	30	0	336	49,781	603,318	117,511,534	2,524,563	2.2%	2.2%
Jul-08	125,482,805	4,505			175,034	125,312,276	7.6	75.8	31	0	352	49,843	615,683	124,915,041	-397,235	-0.3%	0.3%
Aug-08	116,642,720	3,345			162,703	116,483,362	36.2	29.5	31	0	320	49,932	628,047	113,848,062	-2,635,300	-2.3%	2.3%
Sep-08	113,785,450	3,183			158,717	113,629,916	93.2	12	30	1	336	50,197	640,412	108,754,488	-4,875,428	-4.3%	4.3%
Oct-08	114,890,260	8,696			160,258	114,738,698	325.7	0	31	1	352	50,286	652,776	116,033,674	1,294,976	1.1%	1.1%
Nov-08	117,556,400	7,348			163,977	117,399,771	499.7	0	30	1	304	50,341	665,141	115,836,045	-1,563,726	-1.3%	1.3%
Dec-08	127,583,980	10,165			177,965	127,416,180	694	0	31	0	336	50,478	677,505	128,020,054	603,874	0.5%	0.5%
Jan-09	133,644,440	5,405			201,794	133,448,051	891.8	0	31	0	336	50,522	712,239	133,583,599	135,547	0.1%	0.1%
Feb-09	116,396,740	7,542			175,751	116,228,531	649.6	0	28	0	304	50,567	746,972	118,215,902	1,987,371	1.7%	1.7%
Mar-09	122,514,006	7,052			184,988	122,336,070	562.6	0	31	1	352	50,570	781,706	123,115,476	779,406	0.6%	0.6%
Apr-09	109,450,364	9,944			165,262	109,295,046	341.5	3.2	30	1	320	50,379	816,439	112,908,111	3,613,065	3.3%	3.3%
May-09	106,688,597	7,866			161,092	106,535,371	192.8	2.3	31	1	320	50,556	851,173	111,178,566	4,643,195	4.4%	4.4%
Jun-09	112,029,484	3,162			169,157	111,863,489	75.7	26.2	30	0	352	50,618	885,906	115,193,664	3,330,175	3.0%	3.0%
Jul-09	113,742,745	3,355			171,744	113,574,356	37.6	14.5	31	0	352	50,688	920,640	113,921,028	346,672	0.3%	0.3%
Aug-09	121,976,829	3,504			184,177	121,796,156	18.2	57.3	31	0	320	50,788	955,373	120,957,651	-838,505	-0.7%	0.7%
Sep-09	113,325,953	3,212			171,114	113,158,051	88.8	5.5	30	1	336	50,947	990,107	108,443,115	-4,714,936	-4.2%	4.2%
Oct-09	117,459,966	4,686			177,356	117,287,295	329.1	0	31	1	336	51,006	1,024,840	116,263,534	-1,023,761	-0.9%	0.9%
Nov-09	117,285,789	2,430			177,093	117,111,126	396.5	0	30	1	320	51,052	1,059,574	114,982,133	-2,128,993	-1.8%	1.8%
Dec-09	129,320,400	6,003			195,265	129,131,138	669.5	0	31	0	352	51,089	1,094,307	129,066,829	-64,310	0.0%	0.0%
Jan-10	133,979,177	7,401			251,570	133,735,007	721.1	0	31	0	320	51,151	1,103,679	128,689,846	-5,045,162	-3.8%	3.8%
Feb-10	119,946,771	5,836			225,222	119,727,385	644.7	0	28	0	304	51,173	1,113,050	118,915,361	-812,024	-0.7%	0.7%
Mar-10	123,452,454	5,029			231,804	123,225,678	470.9	0	31	1	368	51,218	1,122,421	122,525,156	-700,522	-0.6%	0.6%
Apr-10	109,614,094	7,763			205,820	109,416,037	260.6	0	30	1	320	51,206	1,131,793	111,442,692	2,026,655	1.9%	1.9%
May-10	117,656,799	7,341			220,922	117,443,218	144.7	21	31	1	320	51,250	1,141,164	115,122,910	-2,320,308	-2.0%	2.0%
Jun-10	120,954,770	5,298			227,114	120,732,954	37.7	32.6	30	0	352	51,383	1,150,536	116,961,110	-3,771,844	-3.1%	3.1%
Jul-10	135,775,256	2,288			254,943	135,522,601	6.7	106.6	31	0	336	51,449	1,159,907	133,661,746	-1,860,855	-1.4%	1.4%
Aug-10	122,798,939	31,996			249,354	132,581,581	14.2	85.3	31	0	336	51,540	1,169,278	129,431,575	-3,150,006	-2.4%	2.4%
Sep-10	116,946,781	21,552			219,589	116,748,744	122.7	23	30	1	336	51,730	1,178,650	114,830,128	-1,918,616	-1.6%	1.6%
Oct-10	116,794,004	33,695			219,302	116,608,398	284.6	0	31	1	320	51,802	1,188,021	115,744,974	-863,423	-0.7%	0.7%
Nov-10	121,142,765	26,467			227,467	120,941,764	424.1	0	30	1	336	51,876	1,197,393	118,549,150	-2,392,615	-2.0%	2.0%
Dec-10	132,686,798	8,843			249,143	132,446,497	719.4	0	31	0	368	51,942	1,206,764	133,377,287	930,790	0.7%	0.7%

Month	Purchased kWh - Utilismart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-11	136,994,789		17,067		62,828	136,949,028	822	0	31	0	336	51,912	1,230,960	134,162,710	-2,786,318	-2.0%	2.0%
Feb-11	122,135,594		32,587		56,014	122,112,167	689.3	0	28	0	304	51,951	1,255,156	121,854,708	-257,459	-0.2%	0.2%
Mar-11	130,238,805		68,579		59,730	130,247,654	622.3	0	31	1	368	52,013	1,279,352	128,458,866	-1,788,789	-1.4%	1.4%
Apr-11	114,649,106		88,855		52,580	114,685,381	349.6	0	30	1	320	51,974	1,303,549	115,539,264	853,883	0.7%	0.7%
May-11	115,314,928		92,813		52,886	115,354,856	156.7	13.2	31	1	336	51,904	1,327,745	116,029,673	674,817	0.6%	0.6%
Jun-11	119,042,433		166,962		54,595	119,154,800	48.5	21.6	30	0	352	52,117	1,351,941	116,331,828	-2,822,972	-2.4%	2.4%
Jul-11	138,200,903		177,168		63,381	138,314,689	0.8	129.7	31	0	320	52,228	1,376,137	139,121,063	806,374	0.6%	0.6%
Aug-11	129,680,676		212,743		59,474	129,833,945	6.9	60.1	31	0	352	52,272	1,400,333	126,112,787	-3,721,159	-2.9%	2.9%
Sep-11	118,359,468		149,718		54,282	118,454,904	98.4	19.7	30	1	336	52,370	1,424,529	114,581,444	-3,873,460	-3.3%	3.3%
Oct-11	117,222,379		125,527		53,760	117,294,146	279.9	0	31	1	320	52,540	1,448,725	116,983,090	-311,056	-0.3%	0.3%
Nov-11	119,814,510		107,276		54,949	119,866,836	382.4	0	30	1	352	52,585	1,472,922	119,631,357	-235,479	-0.2%	0.2%
Dec-11	126,569,739		61,882		58,047	126,573,574	574.8	0	31	0	336	52,626	1,497,118	128,564,539	1,990,964	1.6%	1.6%
Jan-12	133,054,012		90,401		78,254	133,066,159	657.3	0	31	0	336	52,669	1,545,001	130,883,950	-2,182,209	-1.6%	1.6%
Feb-12	120,941,249		141,343		71,133	121,011,459	573	0	29	0	320	52,705	1,592,885	123,085,799	-2,074,340	-1.7%	1.7%
Mar-12	123,000,174		223,986		72,348	123,151,812	370.1	0	31	1	352	52,764	1,640,768	121,656,375	-1,495,436	-1.2%	1.2%
Apr-12	112,691,603		259,168		66,288	112,884,483	365.3	0	30	1	320	52,792	1,688,651	117,312,671	-4,428,188	-3.9%	3.9%
May-12	119,335,240		411,774		70,251	119,676,763	105.8	18.2	31	1	352	52,765	1,736,535	118,078,267	-1,598,496	-1.3%	1.3%
Jun-12	125,981,960		351,651	156,552	74,123	126,416,040	42.1	61.2	30	0	336	52,838	1,784,418	124,823,989	-1,592,051	-1.3%	1.3%
Jul-12	142,079,563		366,752	830,328	83,591	143,193,052	0	128.2	31	0	336	52,881	1,832,302	140,532,891	-2,660,161	-1.9%	1.9%
Aug-12	130,563,176		347,063	746,851	76,825	131,580,265	19.4	59.1	31	0	352	52,971	1,880,185	127,098,434	-4,481,831	-3.4%	3.4%
Sep-12	117,194,518		351,467	704,059	68,995	118,181,049	125.4	16.4	30	1	304	53,174	1,928,068	113,734,250	-4,446,799	-3.8%	3.8%
Oct-12	119,510,341		182,984	627,856	70,320	120,250,862	279.2	0	31	1	352	53,346	1,975,952	119,954,545	-296,317	-0.2%	0.2%
Nov-12	122,632,477		157,709	630,415	72,148	123,348,454	483.6	0	30	1	352	53,452	2,023,835	123,599,451	250,997	0.2%	0.2%
Dec-12	125,695,219		89,827	617,717	73,943	126,328,820	565.5	0	31	0	304	53,402	2,071,719	127,219,856	891,036	0.7%	0.7%
Jan-13	133,527,422		136,114	524,897	102,862	134,085,572	681.3	0	31	0	352	53,502	2,116,838	133,550,436	-535,136	-0.4%	0.4%
Feb-13	121,236,985		123,472	580,824	93,388	121,847,893	697.9	0	28	0	304	53,528	2,161,957	124,357,501	2,509,608	2.1%	2.1%
Mar-13	127,539,935		308,773	576,251	98,291	128,326,668	612	0	31	1	320	53,536	2,207,077	127,325,376	-1,001,292	-0.8%	0.8%
Apr-13	116,521,544		352,455	648,361	89,816	117,432,544	384.7	0	30	1	352	53,508	2,252,196	120,548,776	3,116,232	2.7%	2.7%
May-13	116,582,497		494,155	652,219	89,893	117,638,977	152.1	19.6	31	1	352	53,565	2,297,315	120,632,585	2,993,608	2.5%	2.5%
Jun-13	120,362,903		431,928	699,684	92,778	121,401,737	52.6	31.3	30	0	320	53,760	2,342,435	118,879,994	-2,521,743	-2.1%	2.1%
Jul-13	135,783,425		475,818	695,737	104,677	136,850,304	15.1	86.5	31	0	352	53,909	2,387,554	134,368,604	-2,481,700	-1.8%	1.8%
Aug-13	126,492,702		509,730	637,368	97,538	127,542,262	32.7	42.1	31	0	336	54,009	2,432,673	124,352,999	-3,189,263	-2.5%	2.5%
Sep-13	117,625,579		424,343	617,906	90,691	118,577,136	128.1	20.5	30	1	320	54,040	2,477,793	116,827,094	-1,750,042	-1.5%	1.5%
Oct-13	119,218,591		309,218	566,636	91,888	120,002,557	262.1	0	31	1	352	54,113	2,522,912	120,377,257	374,700	0.3%	0.3%
Nov-13	123,170,572		222,932	591,294	94,917	123,889,882	517.7	0	30	1	336	54,156	2,568,031	124,319,057	429,176	0.3%	0.3%
Dec-13	130,983,697		112,430	589,493	100,909	131,584,711	727.3	0	31	0	320	54,180	2,613,150	133,649,498	2,064,787	1.6%	1.6%
Jan-14	141,106,088		163,375	524,192	143,311	141,650,345	865.9	0	31	0	352	54,216	2,667,285	139,459,804	-2,190,541	-1.5%	1.5%
Feb-14	125,257,309		151,109	578,734	127,225	125,859,926	831.2	0	28	0	304	54,225	2,721,419	128,775,668	2,915,743	2.3%	2.3%
Mar-14	133,125,383		492,909	565,100	135,575	134,047,817	757	0	31	1	336	54,242	2,775,553	133,053,250	-994,567	-0.7%	0.7%
Apr-14	114,620,651		543,976	631,838	116,908	115,679,557	389.9	0	30	1	320	54,213	2,829,687	119,423,862	-3,744,304	-3.2%	3.2%
May-14	114,044,889		695,153	664,536	116,526	115,288,052	168.9	9	31	1	336	54,183	2,883,821	118,257,391	2,969,339	2.6%	2.6%
Jun-14	121,444,961		756,506	676,098	123,901	122,753,664	37.3	44.3	30	0	336	54,246	2,937,955	122,367,878	-385,786	-0.3%	0.3%
Jul-14	123,954,209		735,821	679,187	126,406	125,242,812	36.8	38.8	31	0	352	54,253	2,992,090	124,279,957	-962,855	-0.8%	0.8%
Aug-14	120,437,156		1,761,479	629,395	124,816	122,703,214	31.1	28.5	31	0	320	54,296	3,046,224	119,922,282	-2,780,932	-2.3%	2.3%
Sep-14	116,189,300		1,477,828	607,775	119,627	118,155,276	117.7	11.4	30	1	336	54,497	3,100,358	115,501,059	-2,654,217	-2.2%	2.2%
Oct-14	115,219,055		1,428,424	558,747	118,525	117,087,701	257.1	0	31	1	352	54,599	3,154,492	120,267,573	3,179,873	2.7%	2.7%
Nov-14	121,370,699		1,164,888	580,527	124,434	122,991,680	529.9	0	30	1	304	54,669	3,208,626	122,784,988	-206,693	-0.2%	0.2%
Dec-14	126,395,819		1,624,797	591,688	130,103	128,482,201	597.6	0	31	0	336	54,692	3,262,760	131,070,024	2,587,823	2.0%	2.0%
Jan-15	136,069,001		1,640,686	524,680	124,023	138,110,344	800.8	0	31	0	336	54,798	3,341,794	136,856,788	-1,253,556	-0.9%	0.9%
Feb-15	126,839,323		1,299,790	593,761	115,380	128,617,494	917.5	0	28	0	304	54,813	3,420,827	131,342,068	2,724,574	2.1%	2.1%
Mar-15	127,155,193		2,415,035	589,701	116,725	130,043,204	538	0	31	1	352	54,851	3,499,860	128,085,771	-1,957,434	-1.5%	1.5%
Apr-15	110,931,008		2,428,305	666,705	102,184	113,923,834	359	0	30	1	336	54,842	3,578,894	119,707,356	5,783,522	5.1%	5.1%
May-15	114,125,838		2,618,860	627,433	105,289	117,266,841	116.2	29.8	31	1	320	54,836	3,657,927	120,533,008	3,266,167	2.8%	2.8%
Jun-15	116,243,975		2,221,967	655,440	106,798	119,014,584	54.7	15	30	0	352	54,885	3,736,960	117,531,270	-1,483,314	-1.2%	1.2%
Jul-15	128,559,158		2,704,739	641,714	118,299	131,787,311	19.3	57.7	31	0	352	54,995	3,815,994	128,230,662	-3,556,649	-2.7%	2.7%
Aug-15	122,276,966		2,398,601	614,038	122,379	125,177,226	29.5	47.9	31	0	320	54,992	3,895,027	124,262,403	-914,823	-0.7%	0.7%
Sep-15	122,189,743		2,377,177	573,065	112,257	125,027,728	58.2	45.3	30	1	336	55,342	3,974,060	121,721,354	-3,306,374	-2.6%	2.6%
Oct-15	113,821,112		2,471,686	544,987	104,800	116,732,985	290.1	0	31	1	336	55,399	4,053,094	120,527,005	3,794,020	3.3%	3.3%
Nov-15	114,918,428		2,273,329	556,116	105,581	117,642,292	391.1	0	30	1	320	55,471	4,132,127	120,164,654	2,522,362	2.1%	2.1%
Dec-15	120,146,924		1,984,796	545,683	110,021	122,567,382	453	0	31	0	352	55,481	4,211,160	128,207,849	5,640,468	4.6%	4.6%

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-16	129,653,336		1,935,235	508,638	147,119	131,950,090	717.8	0	31	0	320	55,520	4,311,367	133,548,509	1,598,419	1.2%	1.2%
Feb-16	119,612,277		2,180,336	547,914	136,171	122,204,356	627.4	0	29	0	320	55,545	4,411,573	126,430,869	4,226,513	3.5%	3.5%
Mar-16	120,079,404		2,728,253	531,797	137,345	123,202,109	492.6	0	31	1	352	55,580	4,511,779	126,741,526	3,539,417	2.9%	2.9%
Apr-16	111,544,560		2,986,523	466,188	128,113	114,869,158	431.8	0	30	1	336	55,679	4,611,985	121,893,260	7,024,102	6.1%	6.1%
May-16	112,996,489		3,280,151	611,452	129,983	116,758,109	174.6	18.4	31	1	336	55,676	4,712,192	120,772,780	4,014,670	3.4%	3.4%
Jun-16	118,112,991		3,308,476	670,708	135,873	121,956,302	51.2	34.3	30	0	352	55,710	4,812,398	121,692,618	-263,684	-0.2%	0.2%
Jul-16	132,759,092		3,078,626	628,637	151,990	136,314,365	4.8	101.2	31	0	320	55,811	4,912,604	135,351,653	-962,711	-0.7%	0.7%
Aug-16	136,846,966		3,163,200	603,676	156,589	140,457,253	2.1	105	31	0	352	55,592	5,012,810	137,318,523	-3,138,730	-2.2%	2.2%
Sep-16	120,474,539		2,927,609	584,672	138,070	123,848,750	68.6	26.6	30	1	336	55,903	5,113,017	117,185,145	-6,663,605	-5.4%	5.4%
Oct-16	114,277,151		2,742,054	543,215	130,942	117,431,479	242.1	1.9	31	1	320	56,053	5,213,223	118,077,118	645,639	0.5%	0.5%
Nov-16	114,905,950		2,513,270	538,539	131,341	117,826,419	388.2	0	30	1	336	56,155	5,313,429	120,549,001	2,722,583	2.3%	2.3%
Dec-16	125,678,936		2,009,571	536,054	142,769	128,081,792	647.8	0	31	0	336	56,244	5,413,635	132,311,713	4,229,921	3.3%	3.3%
Jan-17	128,734,997		2,046,970	462,300	195,310	131,048,958	635.1	0	31	0	336	56,330	5,557,618	131,901,593	852,635	0.7%	0.7%
Feb-17	112,440,233		2,032,461	508,232	170,943	114,809,982	537.9	0	28	0	304	56,380	5,701,601	120,384,663	5,574,682	4.9%	4.9%
Mar-17	123,679,832		2,753,230	513,594	188,801	126,757,855	597.6	0	31	1	368	56,429	5,845,583	130,263,621	3,505,766	2.8%	2.8%
Apr-17	105,359,960		3,042,376	543,909	161,992	108,784,253	281.6	0	30	1	304	56,520	5,989,566	115,259,521	6,475,268	6.0%	6.0%
May-17	109,395,984		3,050,515	572,876	168,052	112,851,324	214.4	2.7	31	1	352	56,568	6,133,548	118,989,983	6,138,659	5.4%	5.4%
Jun-17	116,088,139		3,340,849	614,956	178,480	119,865,463	45.2	43	30	0	352	56,601	6,277,531	122,897,286	3,031,823	2.5%	2.5%
Jul-17	124,635,650		3,427,769	585,427	191,385	128,457,461	3.2	58.5	31	0	320	56,737	6,421,514	125,459,902	-2,997,559	-2.3%	2.3%
Aug-17	120,712,024		3,323,668	576,573	185,350	124,426,914	34.5	28.6	31	0	352	56,788	6,565,496	121,614,795	-2,812,119	-2.3%	2.3%
Sep-17	117,905,219		2,933,822	558,640	180,583	121,217,097	81.1	36.3	30	1	320	56,822	6,709,479	117,968,372	-3,248,726	-2.7%	2.7%
Oct-17	113,217,919		2,616,870	507,996	173,113	116,169,673	208.9	3.2	31	1	336	56,855	6,853,461	117,327,928	1,158,255	1.0%	1.0%
Nov-17	118,361,036		2,024,980	505,924	179,806	120,712,135	480	0	30	1	352	56,903	6,997,444	122,783,869	2,071,734	1.7%	1.7%
Dec-17	127,458,754		1,531,242	506,768	192,600	129,304,165	755.7	0	31	0	304	57,055	7,141,427	132,138,845	2,834,680	2.2%	2.2%
Jan-18	135,059,211		1,849,473	497,800	-	137,406,483	791.1	0	31	0	352	57,069	7,229,731	135,927,372	-1,479,112	-1.1%	1.1%
Feb-18	115,541,198		2,220,305	722,686	-	118,484,189	594.9	0	28	0	304	57,081	7,318,036	120,680,449	2,196,260	1.9%	1.9%
Mar-18	123,856,864		2,153,545	689,190	-	126,699,599	591.1	0	31	1	336	57,107	7,406,340	126,880,017	180,418	0.1%	0.1%
Apr-18	115,296,340		2,168,050	778,766	-	118,243,156	474.8	0	30	1	336	57,120	7,494,645	121,266,465	3,023,309	2.6%	2.6%
May-18	116,495,073		3,234,440	786,335	-	120,515,848	95.2	32.5	31	1	352	57,140	7,582,950	120,868,639	352,791	0.3%	0.3%
Jun-18	120,027,635		3,505,931	829,844	-	124,363,410	41	41.5	30	0	336	57,291	7,671,254	120,574,914	-3,788,496	-3.0%	3.0%
Jul-18	137,353,067		3,173,242	873,989	-	141,400,298	3.6	89.3	31	0	336	57,318	7,759,559	132,105,075	-9,295,223	-6.6%	6.6%
Aug-18	134,389,410		3,192,687	794,971	-	138,377,067	6.6	93.9	31	0	352	57,346	7,847,864	134,074,255	-4,302,812	-3.1%	3.1%
Sep-18	121,313,741		2,979,765	779,327	-	125,072,833	77.2	48.8	30	1	304	57,391	7,936,168	118,722,778	-6,350,055	-5.1%	5.1%
Oct-18	115,731,856		2,546,635	710,638	-	118,989,128	317.5	5.2	31	1	352	57,428	8,024,473	120,998,922	2,009,794	1.7%	1.7%
Nov-18	120,612,008		1,881,520	694,713	-	123,188,241	538.6	0	30	1	336	57,458	8,112,777	122,727,974	-460,267	-0.4%	0.4%
Dec-18	123,360,801		1,690,550	712,705	-	125,764,056	600.8	0	31	0	304	57,486	8,201,082	126,896,766	1,132,711	0.9%	0.9%
Jan-19	133,959,322		2,282,582	655,830	-	136,897,734	802.1	0	31	0	352	57,551	8,233,226	135,548,876	-1,348,858	-1.0%	1.0%
Feb-19	118,721,343		2,237,328	755,072	-	121,713,743	659.8	0	28	0	304	57,548	8,265,370	121,874,268	160,525	0.1%	0.1%
Mar-19	124,916,909		3,113,195	681,120	-	128,711,223	636.5	0	31	1	336	57,554	8,297,514	127,585,789	-1,125,434	-0.9%	0.9%
Apr-19	110,833,583		2,992,063	624,024	-	114,449,671	386.8	0	30	1	336	57,554	8,329,658	118,324,243	3,874,573	3.4%	3.4%
May-19	108,883,231		3,253,830	773,488	-	112,910,548	207.5	0	31	1	352	57,572	8,361,802	116,518,636	3,608,088	3.2%	3.2%
Jun-19	112,262,654		3,542,039	868,028	-	116,672,721	53.6	15.7	30	0	320	57,603	8,393,946	113,732,373	-2,940,348	-2.5%	2.5%
Jul-19	138,247,186		3,744,318	869,659	-	142,861,163	2.2	100.1	31	0	352	57,646	8,426,090	134,966,736	-7,894,427	-5.5%	5.5%
Aug-19	124,752,141		3,631,089	814,180	-	129,197,410	16.9	48.3	31	0	336	57,685	8,458,234	123,124,809	-6,072,601	-4.7%	4.7%
Sep-19	112,510,968		2,962,855	758,359	-	116,232,182	89.6	13.8	30	1	320	57,724	8,490,378	112,193,354	-4,038,828	-3.5%	3.5%
Oct-19	112,105,909		2,652,141	722,666	-	115,480,716	294.1	3.5	31	1	352	57,762	8,522,522	119,874,012	4,393,296	3.8%	3.8%
Nov-19	119,457,295		2,045,991	653,237	-	122,156,523	556.9	0	30	1	320	57,804	8,554,666	122,296,775	140,252	0.1%	0.1%
Dec-19	123,554,820		1,948,576	712,705	-	126,216,102	623.1	0	31	0	320	57,870	8,586,810	128,734,907	2,518,805	2.0%	2.0%

Month	Purchased kWh - Utilismart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
Jan-20							755.7	0.0	31	0	336	57,902	8,655,739	133,362,291			2.10%
Feb-20							677.4	0.0	29	0	304	57,937	8,724,668	124,710,049			
Mar-20							581.3	0.0	31	1	352	57,972	8,793,598	127,137,330			
Apr-20							368.4	0.0	30	1	352	58,007	8,862,527	118,922,477			
May-20							153.6	16.4	31	1	320	58,042	8,931,456	116,756,792			
Jun-20							46.4	34.1	30	0	352	58,077	9,000,385	119,551,851			
Jul-20							9.3	89.8	31	0	352	58,112	9,069,314	132,880,108			
Aug-20							19.4	59.9	31	0	336	58,147	9,138,243	125,600,472			
Sep-20							96.7	26.2	30	1	336	58,182	9,207,172	115,870,153			
Oct-20							272.0	1.4	31	1	336	58,217	9,276,101	117,537,919			
Nov-20							469.3	0.0	30	1	304	58,252	9,345,030	118,506,654			
Dec-20							627.9	0.0	31	0	352	58,287	9,413,959	130,309,515			
Jan-21							755.7	0.0	31	0	304	58,322	9,409,048	131,039,346			
Feb-21							677.4	0.0	28	0	304	58,357	9,404,137	122,248,024			
Mar-21							581.3	0.0	31	1	368	58,392	9,399,226	128,027,346			
Apr-21							368.4	0.0	30	1	352	58,427	9,394,315	118,974,819			
May-21							153.6	16.4	31	1	320	58,462	9,389,404	116,949,123			
Jun-21							46.4	34.1	30	0	352	58,497	9,384,493	119,884,169			
Jul-21							9.3	89.8	31	0	336	58,532	9,379,582	132,374,753			
Aug-21							19.4	59.9	31	0	352	58,567	9,374,671	127,190,429			
Sep-21							96.7	26.2	30	1	336	58,602	9,369,760	116,622,436			
Oct-21							272.0	1.4	31	1	320	58,637	9,364,849	117,452,529			
Nov-21							469.3	0.0	30	1	320	58,672	9,359,938	120,516,575			
Dec-21							627.9	0.0	31	0	352	58,707	9,355,027	131,481,763			
								Weather Normal						33,309,113,472			
1996						1,054,584,153								1,050,224,600	(4,359,553)	-0.4%	0.4%
1997						1,067,428,819								1,064,457,543	(2,971,276)	-0.3%	0.3%
1998						1,089,938,594								1,099,894,820	9,956,226	0.9%	0.9%
1999						1,136,636,397								1,148,889,979	12,253,582	1.1%	1.1%
2000						1,173,512,817								1,163,148,767	(10,364,050)	-0.9%	0.9%
2001						1,205,847,416								1,208,215,977	2,368,560	0.2%	0.2%
2002						1,286,398,647								1,267,277,928	(19,120,719)	-1.5%	1.5%
2003						1,269,973,824								1,269,647,330	(326,494)	0.0%	0.0%
2004						1,294,310,410								1,309,934,927	15,624,517	1.2%	1.2%
2005						1,358,556,813								1,382,738,344	24,181,531	1.8%	1.8%
2006						1,372,533,120								1,376,587,499	4,054,378	0.3%	0.3%
2007						1,423,569,039								1,403,612,103	(19,956,936)	-1.4%	1.4%
2008						1,421,429,683								1,415,940,928	(5,488,755)	-0.4%	0.4%
2009						1,411,764,680								1,417,829,607	6,064,927	0.4%	0.4%
2010						1,479,129,865								1,459,251,936	(19,877,929)	-1.3%	1.3%
2011						1,488,841,981								1,477,371,327	(11,470,653)	-0.8%	0.8%
2012						1,499,089,218								1,487,980,479	(11,108,739)	-0.7%	0.7%
2013						1,499,180,241								1,499,189,177	8,936	0.0%	0.0%
2014						1,489,942,245								1,495,163,736	5,221,491	0.4%	0.4%
2015						1,485,911,225								1,497,170,188	11,258,963	0.8%	0.8%
2016						1,494,900,181								1,511,872,715	16,972,534	1.1%	1.1%
2017						1,454,405,279								1,476,990,377	22,585,098	1.6%	1.6%
2018						1,518,504,309								1,501,723,627	(16,780,682)	-1.1%	1.1%
2019						1,483,499,736								1,474,774,779	(8,724,957)	-0.6%	0.6%
2020														1,481,145,611			
2021														1,482,761,312			
Total to 2019						32,459,888,693								32,459,888,693	0		
														33,309,113,472	0		

Month	Purchased kWh - Utilisrsmart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	Direct Market Participant	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)
						10 Year Average											
							755.7	0.0	31	0	333						
							677.4	0.0	28	0	323						
							581.3	0.0	31	1	346						
							368.4	0.0	30	1	326						
							153.6	16.4	31	1	341						
							46.4	34.1	30	0	331						
							9.3	89.8	31	0	342						
							19.4	59.9	31	0	338						
							96.7	26.2	30	1	331						
							272.0	1.4	31	1	341						
							469.3	0.0	30	1	334						
							627.9	0.0	31	0	331						
						20 Year Trend											
							762.2	0.0	31	0	333						
							678.8	0.0	28	0	323						
							603.6	0.0	31	1	346						
							382.0	-0.3	30	1	326						
							152.3	16.8	31	1	341						
							46.3	30.2	30	0	331						
							8.4	87.2	31	0	342						
							19.8	56.9	31	0	338						
							88.2	27.8	30	1	331						
							268.8	2.4	31	1	341						
							489.0	0.0	30	1	334						
							613.9	0.0	31	0	331						

SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.978220385								
R Square	0.956915123								
Adjusted R Square	0.955838001								
Standard Error	3051688.467								
Observations	288								
ANOVA									
	df	SS	MS	F	Significance F				
Regression	7	5.79145E+16	8.27349E+15	888.3999944	4.1232E-187				
Residual	280	2.60758E+15	9.3128E+12						
Total	287	6.0522E+16							
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept	-107313498.6	7344255.788	-14.61189557	2.50562E-36	-121770464.2	-92856533.06	-121770464.2	-92856533.06	
Heating Degree Days	27898.33733	1073.563274	25.98667262	1.36382E-76	25785.05754	30011.61711	25785.05754	30011.61711	
Cooling Degree Days	218376.5926	10743.27813	20.3268118	4.71014E-57	197228.7451	239524.4402	197228.7451	239524.4402	
Number of Days in Month	2234391.356	245225.5956	9.111574798	1.60329E-17	1751671.515	2717111.197	1751671.515	2717111.197	
Spring Fall Flag	-2251156.443	464000.1688	-4.851628499	2.03571E-06	-3164528.015	-1337784.87	-3164528.015	-1337784.87	
Number of Peak Hours	61103.86363	11898.99439	5.13521241	5.28518E-07	37681.02041	84526.70685	37681.02041	84526.70685	
# of Customers	2525.050692	45.92953865	54.97661779	4.5974E-152	2434.639658	2615.461725	2434.639658	2615.461725	
Persistent CDM	-1.895826284	0.114593601	-16.54391059	2.36045E-43	-2.121400636	-1.670251932	-2.121400636	-1.670251932	
CORRELATION - Includes Employment & Unemployment variables not used in the regression model.									
	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Employment Kitchener-Waterloo- Cambridge (000's)	Unemployment Kitchener-Waterloo- Cambridge (000's)
Heating Degree Days	1								
Cooling Degree Days	-0.686046707	1							
Number of Days in Month	-0.187010704	0.192341347	1						
Spring Fall Flag	-0.057092039	-0.408906972	0.076771802	1					
Number of Peak Hours	-0.156587756	0.106015524	0.387761451	0.087142858	1				
# of Customers	-0.009563821	0.017037282	0.004340325	0.006349557	-0.042998356	1			
Persistent CDM	-0.011586831	0.019700183	0.006513838	0.006841546	-0.043122691	0.77419916	1		
Employment Kitchener-Waterloo-Cambridge (000's)	-0.028870317	0.055136197	0.021433612	-0.018069697	-0.037496763	0.980594295	0.778133971	1	
Unemployment Kitchener-Waterloo-Cambridge (000's)	-0.222954502	0.106329431	0.002665952	0.047256545	-0.004431963	0.285466825	0.017690465	0.161847623	1
		Evidence of correlation (close to 1), should not be used together in model.							

						Actual Billed								
	Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service ≤ 50 kW	General Service ≥ 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Unmetered Loads	Embedded Distributors - #1
Weather Normal Projection														
1998	1,089,938,594	1,099,894,820	9,956,226	0.9%										
1999	1,136,636,397	1,148,889,979	12,253,582	1.1%										
2000	1,173,512,817	1,163,148,767	(10,364,050)	-0.9%										
2001	1,205,847,416	1,208,215,977	2,368,560	0.2%										
2002	1,286,398,647	1,267,277,928	(19,120,719)	-1.5%										
2003	1,269,973,824	1,269,647,330	(326,494)	0.0%	1.0436	1,216,900,996	381,172,838	178,733,409	581,134,405	65,433,586		7,223,381	3,203,377	
2004	1,294,310,410	1,309,934,927	15,624,517	1.2%	1.0357	1,249,737,840	385,085,949	181,654,718	606,602,563	66,067,057		7,105,157	3,222,396	
2005	1,358,556,813	1,382,738,344	24,181,531	1.8%	1.0414	1,304,584,908	408,053,981	187,375,742	627,713,059	70,553,960		7,702,553	3,185,614	
2006	1,372,533,120	1,376,587,499	4,054,378	0.3%	1.0350	1,326,077,776	391,947,395	189,284,333	660,327,538	73,668,918		7,713,288	3,136,305	
2007	1,423,569,039	1,403,612,103	(19,956,936)	-1.4%	1.0410	1,367,527,466	405,071,612	192,047,825	682,785,512	77,115,461		7,734,113	2,772,944	
2008	1,421,429,683	1,415,940,928	(5,488,755)	-0.4%	1.0371	1,370,617,488	405,533,476	185,031,934	693,615,296	76,733,608		7,925,793	1,777,380	
2009	1,411,764,680	1,417,829,607	6,064,927	0.4%	1.0378	1,360,402,644	397,106,489	179,794,279	697,125,703	76,507,951		7,921,734	1,946,487	
2010	1,479,129,865	1,459,251,936	(19,877,929)	-1.3%	1.0375	1,425,614,249	413,251,129	185,040,278	734,775,051	82,593,009		7,954,315	2,000,468	
2011	1,488,841,981	1,477,371,327	(11,470,653)	-0.8%	1.0359	1,437,226,191	408,768,579	187,070,265	725,123,828	84,249,637	3,552,539	7,939,684	2,043,853	22,030,344
2012	1,499,089,218	1,487,980,479	(11,108,739)	-0.7%	1.0332	1,450,973,841	409,922,519	190,189,482	716,491,037	86,740,767	7,664,745	9,744,477	2,250,008	32,083,013
2013	1,499,180,241	1,499,189,177	8,936	0.0%	1.0349	1,448,566,259	409,442,945	194,737,949	705,737,128	90,202,679	7,696,319	9,744,477	2,352,596	30,731,900
2014	1,489,942,245	1,495,163,736	5,221,491	0.4%	1.0295	1,447,248,320	410,104,642	197,096,102	699,842,688	91,205,251	7,004,823	7,720,857	2,544,974	31,728,985
2015	1,485,911,225	1,497,170,188	11,258,963	0.8%	1.0311	1,441,031,603	404,728,026	196,078,596	696,649,002	92,984,875	6,790,407	7,608,120	2,649,180	33,543,395
2016	1,494,900,181	1,511,872,715	16,972,534	1.1%	1.0349	1,444,462,268	404,436,333	193,116,426	701,389,229	95,179,112	6,445,968	7,638,394	2,729,041	33,527,765
2017	1,454,405,279	1,476,990,377	22,585,098	1.6%	1.0321	1,409,167,205	396,801,470	189,981,988	678,663,686	95,093,184	6,231,611	5,530,665	2,679,470	34,185,131
2018	1,518,504,309	1,501,723,627	(16,780,682)	-1.1%	1.0349	1,467,265,689	413,689,291	197,978,623	706,516,406	98,366,842	8,585,533	3,498,479	2,629,284	36,001,231
2019	1,483,499,736	1,474,774,779	(8,724,957)	-0.6%	1.0316	1,438,045,052	406,423,263	198,022,375	683,561,942	96,183,866	8,606,064	3,499,974	2,771,071	38,976,498
2020	0	1,481,145,611				1,430,063,908								
2021	0	1,482,761,312				1,431,623,886								
Average					1.0357									

							Actual Billed							
	Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service ≤ 50 kW	General Service > 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Unmetered Loads	Embedded Distributors - #1
Usage Per Customer														
	2002						#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
	2003						9,715	35,988	899,589	65,433,586				
	2004						9,501	36,324	960,574	66,067,057		565		
	2005						9,769	37,020	1,008,374	70,553,960		596		
	2006						9,186	36,977	1,062,474	73,668,918		585		
	2007						9,337	37,284	1,088,972	77,115,461		579		
	2008						9,181	35,696	1,072,048	76,733,608		589	3,332	
	2009						8,854	34,230	1,052,265	76,507,951		585	3,645	
	2010						9,085	34,636	1,108,258	82,593,009		583	3,729	
	2011						8,849	34,633	1,088,775	84,249,637		580	4,096	22,030,344
	2012						8,745	34,875	1,074,199	86,740,767	1,776,270	709	4,772	32,083,013
	2013						8,601	35,388	1,056,493	90,202,679	3,832,373	556	4,743	30,731,900
	2014						8,510	35,535	1,027,669	91,205,251	3,502,412	557	4,904	31,728,985
	2015						8,302	34,874	1,000,214	92,984,875	3,395,204	550	5,003	33,543,395
	2016						8,182	33,883	980,964	95,179,112	3,222,984	551	5,096	33,527,765
	2017						7,918	32,857	923,352	95,093,184	3,115,806	390	4,872	34,185,131
	2018						8,165	33,915	941,394	98,366,842	3,434,213	241	4,847	36,001,231
	2019						7,963	33,755	908,992	96,183,866	2,868,688	238	5,233	38,976,498
	2020						7,864	33,620	909,583	98,527,751	3,072,009	223	5,453	41,857,714
	2021						7,864	33,620	909,583	98,527,751	3,072,009	223	5,453	41,857,714
	2002													
	2003													
	2004						0.9780	1.0093	1.0678	1.0097				
	2005						1.0282	1.0192	1.0498	1.0679				
	2006						0.9403	0.9988	1.0537	1.0442		0.9830		
	2007						1.0165	1.0083	1.0249	1.0468		0.9891		
	2008						0.9832	0.9574	0.9845	0.9950		1.0171		
	2009						0.9643	0.9589	0.9815	0.9971		0.9929	1.0941	
	2010						1.0261	1.0118	1.0532	1.0795		0.9974	1.0229	
	2011						0.9740	0.9999	0.9824	1.0201		0.9953	1.0985	
	2012						0.9882	1.0070	0.9866	1.0296		1.2221	1.1651	1.4563
	2013						0.9836	1.0147	0.9835	1.0399	2.1575	0.7838	0.9939	0.9579
	2014						0.9894	1.0042	0.9727	1.0111	0.9139	1.0023	1.0338	1.0324
	2015						0.9756	0.9814	0.9733	1.0195	0.9694	0.9874	1.0203	1.0572
	2016						0.9855	0.9716	0.9808	1.0236	0.9493	1.0011	1.0186	0.9995
	2017						0.9677	0.9697	0.9413	0.9991	0.9667	0.7082	0.9560	1.0196
	2018						1.0313	1.0322	1.0195	1.0344	1.1022	0.6164	0.9948	1.0531
	2019						0.9752	0.9953	0.9656	0.9778	0.8353	0.9903	1.0798	1.0826
Used							0.9876	0.9960	1.0007	1.0244	1.0709	0.9366	1.0419	1.0739
Geomean							0.9876	0.9960	1.0007	1.0244	1.0709	0.9366	1.0419	1.0739
Non Weather Corrected Forecast														
2020						1,443,350,608	404,095,708	199,172,655	684,251,974	98,527,751	9,216,027	3,312,567	2,916,211	41,857,714
2021						1,465,306,075	406,730,672	201,352,917	701,326,151	98,527,751	9,216,027	3,347,727	2,947,114	41,857,714
Weather Corrected Forecast														
2020						1,430,063,908	399,456,598	196,886,108	679,022,051	97,396,631	9,216,027	3,312,567	2,916,211	41,857,714
2021						1,431,623,886	395,056,934	195,573,807	687,924,696	95,699,867	9,216,027	3,347,727	2,947,114	41,857,714
Total														
% Weather Sensitive														
							75.0%	75.0%	49.9%	75.0%	0%	0%	0%	0%
2020						-13,286,700	302,869,733	149,279,905	341,441,735	73,846,550	0	0	0	867,437,922
2021						-33,682,188	304,844,639	150,914,011	349,961,749	73,846,550	0	0	0	879,566,949
Allocation of Weather Sensitive Amount														
2020							-4,639,109	-2,286,547	-5,229,923	-1,131,121	0	0	0	-13,286,700
2021							-11,673,739	-5,779,110	-13,401,456	-2,827,884	0	0	0	-33,682,188

Weather Normalized - 10-year Average weather actuals in predicted purchases model

	<u>Residential</u>	General Service <u>< 50 kW</u>	General Service <u>> 50 to 4999 kW</u>	Large User	Direct Market Participant	<u>Street Lights</u>	<u>Unmetered Loads</u>	Embedded <u>Distributors - #1</u>	Total	GS>50 + DMP
1998										
1999										
2000										
2001										
2002										
2003	382,708,783	179,453,620	583,476,101	65,697,252	0	7,252,488	3,216,285	0	1,221,804,530	583,476,101
2004	394,861,429	186,266,057	622,001,283	67,744,182	0	7,285,522	3,304,197	0	1,281,462,671	622,001,283
2005	409,065,325	187,840,144	629,268,818	70,728,825	0	7,721,643	3,193,509	0	1,307,818,265	629,268,818
2006	396,047,417	191,264,369	667,234,989	74,439,542	0	7,793,973	3,169,113	0	1,339,949,404	667,234,989
2007	399,084,340	189,209,209	672,693,415	75,975,634	0	7,619,797	2,731,958	0	1,347,314,354	672,693,415
2008	406,116,120	185,297,776	694,611,837	76,843,853	0	7,937,180	1,779,934	0	1,372,586,700	694,611,837
2009	404,726,638	183,244,384	710,502,975	77,976,076	0	8,073,745	1,983,838	0	1,386,507,657	710,502,975
2010	406,976,127	182,230,538	723,617,876	81,338,878	0	7,833,533	1,970,092	0	1,403,967,043	723,617,876
2011	404,981,069	185,336,936	718,405,077	83,469,008	0	7,866,118	2,024,916	21,826,218	1,423,909,342	718,405,077
2012	407,326,343	188,984,949	711,953,260	86,191,409	3,530,040	9,682,762	2,235,758	31,879,820	1,441,784,341	715,483,300
2013	409,684,963	194,853,057	706,154,284	90,255,997	7,669,276	7,700,868	2,353,986	30,750,066	1,449,422,496	713,823,559
2014	413,130,779	198,550,461	705,006,783	91,878,249	7,056,511	7,777,828	2,563,753	31,963,111	1,457,927,476	712,063,295
2015	410,084,262	198,673,532	705,868,567	94,215,452	6,880,272	7,708,807	2,684,240	33,987,314	1,460,102,447	712,748,840
2016	407,231,132	194,450,929	706,236,077	95,836,833	6,490,512	7,691,178	2,747,900	33,759,453	1,454,444,014	712,726,590
2017	407,809,251	195,252,331	697,490,684	97,731,190	6,404,484	5,684,093	2,753,802	35,133,470	1,448,259,305	703,895,168
2018	403,738,252	193,216,370	689,521,592	96,000,688	8,379,014	3,414,325	2,566,038	35,135,244	1,431,971,524	697,900,606
2019	404,885,436	197,273,096	680,975,476	95,819,924	8,573,500	3,486,731	2,760,586	38,829,019	1,432,603,768	689,548,976
2020										
2021										

Average

Usage Per Customer

2002										
2003	9,754	36,133	903,214	65,697,252		590	7,015			
2004	9,742	37,246	984,958	67,744,182		580	6,743			
2005	9,794	37,112	1,010,874	70,728,825		597	6,511			
2006	9,282	37,364	1,073,588	74,439,542		592	5,979			
2007	9,199	36,733	1,072,876	75,975,634		570	4,936			
2008	9,194	35,748	1,073,589	76,843,853		590	3,336			
2009	9,023	34,887	1,072,457	77,976,076		596	3,715			
2010	8,947	34,110	1,091,430	81,338,878		574	3,672			
2011	8,767	34,312	1,078,686	83,469,008		575	4,058	21,826,218		
2012	8,689	34,654	1,067,396	86,191,409	1,765,020	705	4,742	31,879,820		
2013	8,606	35,409	1,057,117	90,255,997	3,834,638	556	4,746	30,750,066		
2014	8,573	35,797	1,035,252	91,878,249	3,528,256	561	4,940	31,963,111		
2015	8,412	35,335	1,013,451	94,215,452	3,440,136	558	5,069	33,987,314		
2016	8,238	34,117	987,743	95,836,833	3,245,256	555	5,131	33,759,453		
2017	8,137	33,769	948,967	97,731,190	3,202,242	401	5,007	35,133,470		
2018	7,969	33,099	918,750	96,000,688	3,351,605	235	4,730	35,135,244		
2019	7,933	33,627	905,552	95,819,924	2,857,833	237	5,214	38,829,019		

Weather Normalized - 20-year Trend weather actuals in predicted purchases model

	<u>Residential</u>	<u>General Service</u> <u>< 50 kW</u>	<u>General Service</u> <u>> 50 to 4999 kW</u>	<u>Large User</u>	<u>Direct Market</u> <u>Participant</u>	<u>Street Lights</u>	<u>Unmetered</u> <u>Loads</u>	<u>Embedded</u> <u>Distributors - #1</u>	<u>Total</u>	<u>GS>50 + DMP</u>
1998										
1999										
2000										
2001										
2002										
2003	382,565,074	179,386,234	583,257,002	65,672,582	0	7,249,765	3,215,077	0	1,221,345,734	583,257,002
2004	394,718,973	186,198,857	621,776,882	67,719,742	0	7,282,894	3,303,005	0	1,281,000,354	621,776,882
2005	408,921,511	187,774,106	629,047,589	70,703,959	0	7,718,929	3,192,387	0	1,307,358,481	629,047,589
2006	395,910,687	191,198,338	667,004,635	74,413,843	0	7,791,283	3,168,019	0	1,339,486,804	667,004,635
2007	398,948,098	189,144,616	672,463,766	75,949,697	0	7,617,196	2,731,025	0	1,346,854,398	672,463,766
2008	405,979,517	185,235,448	694,378,194	76,818,006	0	7,934,510	1,779,335	0	1,372,125,011	694,378,194
2009	404,591,958	183,183,406	710,266,542	77,950,128	0	8,071,059	1,983,178	0	1,386,046,272	710,266,542
2010	406,842,354	182,170,639	723,380,024	81,312,142	0	7,830,958	1,969,444	0	1,403,505,561	723,380,024
2011	404,849,611	185,276,775	718,171,880	83,441,914	0	7,863,564	2,024,258	21,819,133	1,423,447,136	718,171,880
2012	407,195,415	188,924,203	711,724,415	86,163,704	3,528,905	9,679,650	2,235,040	31,869,573	1,441,320,904	715,253,320
2013	409,554,196	194,790,862	705,928,887	90,227,188	7,666,828	7,698,410	2,353,235	30,740,251	1,448,959,856	713,595,714
2014	412,998,988	198,487,123	704,781,883	91,848,939	7,054,260	7,775,347	2,562,935	31,952,914	1,457,462,391	711,836,143
2015	409,953,847	198,610,349	705,644,086	94,185,490	6,878,084	7,706,356	2,683,386	33,976,505	1,459,638,103	712,522,170
2016	407,101,594	194,389,075	706,011,427	95,806,348	6,488,448	7,688,731	2,747,026	33,748,715	1,453,981,363	712,499,875
2017	407,678,619	195,189,787	697,267,261	97,699,885	6,402,432	5,682,272	2,752,920	35,122,216	1,447,795,393	703,669,694
2018	403,607,810	193,153,945	689,298,818	95,969,672	8,376,307	3,413,222	2,565,209	35,123,892	1,431,508,875	697,675,124
2019	404,754,262	197,209,184	680,754,853	95,788,881	8,570,722	3,485,601	2,759,691	38,816,439	1,432,139,634	689,325,576

	<u>Residential</u>	<u>General Service</u> <u>< 50 kW</u>	<u>General Service > 50</u> <u>to 4999 kW</u>	<u>Large User</u>	<u>Direct Market</u> <u>Participant</u>	<u>Street Lights</u>	<u>Unmetered</u> <u>Loads</u>	<u>Embedded</u> <u>Distributors -</u> <u>#1</u>	<u>Total</u>
2002									
2003	39,236	4,967	646	1	0	12,292	459	0	57,599
2004	40,531	5,001	632	1	0	12,568	490	0	59,223
2005	41,769	5,062	623	1	0	12,935	491	0	60,879
2006	42,668	5,119	622	1	0	13,177	530	0	62,116
2007	43,382	5,151	627	1	0	13,358	554	0	63,072
2008	44,172	5,184	647	1	0	13,459	534	0	63,995
2009	44,853	5,253	663	1	0	13,548	534	0	64,851
2010	45,488	5,343	663	1	0	13,639	537	0	65,670
2011	46,194	5,402	666	1	0	13,678	499	1	66,440
2012	46,877	5,454	667	1	2	13,736	472	1	67,208
2013	47,602	5,503	668	1	2	13,841	496	1	68,114
2014	48,191	5,547	681	1	2	13,853	519	1	68,794
2015	48,750	5,623	697	1	2	13,824	530	1	69,427
2016	49,431	5,700	715	1	2	13,864	536	1	70,249
2017	50,115	5,782	735	1	2	14,175	550	1	71,361
2018	50,664	5,838	751	1	3	14,545	543	1	72,344
2019	51,041	5,867	752	1	3	14,694	530	1	72,887
2020	51,383	5,924	752	1	3	14,847	535	1	73,447
2021	51,718	5,989	771	1	3	15,005	540	1	74,029

Growth Rate in Customer Numbers

2002								
2003								
2004	1.0330	1.0069	0.9776	1.0000				
2005	1.0305	1.0121	0.9857	1.0000				
2006	1.0215	1.0114	0.9984	1.0000		1.0187		
2007	1.0167	1.0063	1.0088	1.0000		1.0137		
2008	1.0182	1.0063	1.0319	1.0000		1.0076		
2009	1.0154	1.0133	1.0240	1.0000		1.0067	1.0009	
2010	1.0142	1.0171	1.0008	1.0000		1.0067	1.0047	
2011	1.0155	1.0110	1.0045	1.0000		1.0029	0.9301	
2012	1.0148	1.0096	1.0015	1.0000		1.0042	0.9449	1.0000
2013	1.0155	1.0091	1.0015	1.0000	1.0000	1.0076	1.0520	1.0000
2014	1.0124	1.0079	1.0195	1.0000	1.0000	1.0009	1.0464	1.0000
2015	1.0116	1.0137	1.0228	1.0000	1.0000	0.9979	1.0202	1.0000
2016	1.0140	1.0137	1.0266	1.0000	1.0000	1.0029	1.0113	1.0000
2017	1.0138	1.0145	1.0280	1.0000	1.0000	1.0224	1.0271	1.0000
2018	1.0110	1.0096	1.0211	1.0000	1.2500	1.0261	0.9864	1.0000
2019	1.0074	1.0050	1.0020	1.0000	1.2000	1.0102	0.9760	1.0000



	<u>Residential</u>	<u>General Service</u> <u>< 50 kW</u>	<u>General Service > 50</u> <u>to 4999 kW</u>	<u>Large User</u>	<u>Direct Market</u> <u>Participant</u>	<u>Street Lights</u>	<u>Unmetered</u> <u>Loads</u>	<u>Embedded</u> <u>Distributors -</u> <u>#1</u>	Total
Used	1.0065	1.0109	1.0250	1.0000	1.0000	1.0106	1.0106	1.0000	
Geomean	1.0166	1.0105	1.0095	1.0000	1.0596	1.0091	0.9993	1.0000	
Geomean 5-yr	1.0116	1.0113	1.0200	1.0000	1.0845	1.0119	1.0040	1.0000	
Geomean 3-yr	1.0107	1.0097	1.0170	1.0000	1.1447	1.0196	0.9963	1.0000	
Trend	1.0065	1.0109	1.0250	1.0000	1.2214	1.0106	1.0106	1.0000	
	0.0166	0.0105	0.0095	0.0000	0.0596	0.0091	-0.0007	0.0000	

									USL Customer Count	Total
1997										
1998										
1999										
2000										
2001										
2002	38,624	4,956	655	1		12,238	432			44,236
2003	39,847	4,977	637	1		12,345	485			45,462
2004	41,215	5,025	626	1		12,791	495			46,867
2005	42,322	5,098	619	1		13,078	486			48,040
2006	43,013	5,140	624	1		13,275	574			48,778
2007	43,750	5,162	630	1		13,440	533		15	49,558
2008	44,593	5,205	664	1		13,477	534		15	50,478
2009	45,113	5,300	661	1		13,619	534		14	51,089
2010	45,863	5,385	665	1		13,658	539		14	51,928
2011	46,525	5,418	667	1		13,697	459	1	14	52,626
2012	47,228	5,489	667	1	2	13,774	484	1	14	53,402
2013	47,976	5,517	669	1	2	13,907	508	1	14	54,180
2014	48,405	5,576	693	1	2	13,798	530	1	14	54,692
2015	49,095	5,669	700	1	2	13,850	529	1	13	55,481
2016	49,767	5,730	730	1	2	13,877	542	1	13	56,244
2017	50,463	5,834	740	1	2	14,472	558	1	14	57,055
2018	50,865	5,841	761	1	3	14,618	527	1	14	57,486
2019	51,216	5,892	743	1	3	14,769	532	1	14	57,870
2020	51,550	5,956	762	1	3	14,926	538	1	14	58,287
2021	51,886	6,022	781	1	3	15,084	543	1	14	58,707

Actual Billed and Forecast

	General Service > 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Embedded Distributors	Total
2001						
2002						0
2003	1,578,391	120,391		20,126		1,718,908
2004	1,578,377	136,143		20,541		1,735,061
2005	1,609,887	138,634		21,198		1,769,719
2006	1,625,474	144,512		21,493		1,791,479
2007	1,650,921	147,258		21,703		1,819,881
2008	1,665,645	145,766		21,921		1,833,333
2009	1,682,115	144,355		22,078		1,848,549
2010	1,762,264	155,986		22,212		1,940,462
2011	1,775,934	160,630		22,237	39,512	1,998,313
2012	1,801,339	165,061	5,848	21,334	71,507	2,065,089
2013	1,766,195	168,361	13,338	21,461	71,174	2,040,528
2014	1,726,654	166,649	12,738	21,568	72,407	2,000,016
2015	1,734,984	170,151	12,035	21,206	75,403	2,013,779
2016	1,796,641	178,218	12,126	21,346	78,348	2,086,679
2017	1,747,019	177,858	11,765	15,685	80,788	2,033,115
2018	1,795,199	173,376	25,177	9,804	85,275	2,088,831
2019	1,752,761	169,281	18,270	9,891	89,358	2,039,562
2020	1,719,145	172,288	22,951	9,204	103,033	2,026,622
2021	1,741,685	169,287	22,951	9,302	103,033	2,046,258

kw/kWh

2001					
2002					
2003	0.2716%	0.1840%		0.2786%	
2004	0.2602%	0.2061%		0.2891%	
2005	0.2565%	0.1965%		0.2752%	
2006	0.2462%	0.1962%		0.2786%	
2007	0.2418%	0.1910%		0.2806%	
2008	0.2401%	0.1900%		0.2766%	
2009	0.2413%	0.1887%		0.2787%	
2010	0.2398%	0.1889%		0.2792%	
2011	0.2449%	0.1907%		0.2801%	0.1794%
2012	0.2514%	0.1903%	0.1646%	0.2189%	0.2229%
2013	0.2503%	0.1866%	0.1740%	0.2788%	0.2316%
2014	0.2467%	0.1827%	0.1818%	0.2794%	0.2282%
2015	0.2490%	0.1830%	0.1772%	0.2787%	0.2248%
2016	0.2562%	0.1872%	0.1881%	0.2795%	0.2337%
2017	0.2574%	0.1870%	0.1888%	0.2836%	0.2363%
2018	0.2541%	0.1763%	0.2932%	0.2802%	0.2369%
2019	0.2564%	0.1760%	0.2123%	0.2826%	0.2293%
10-yr Average	0.2506%	0.1849%	0.1975%	0.2741%	0.2248%
5-yr Average	0.2546%	0.1819%	0.2119%	0.2809%	0.2322%
10-yr Trend	0.2594%	0.1772%	0.2490%	0.2860%	0.2462%
5-yr Trend	0.2584%	0.1744%	0.2645%	0.2835%	0.2358%
Trend	0.2532%	0.1769%	0.2490%	0.2779%	0.2462%
Used	0.2532%	0.1769%	0.2490%	0.2779%	0.2462%

Weather Normalized Actuals - 10-year Average

	General Service > 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Embedded Distributors	Total	GS>50 + DMP
2001							
2002							
2003	1,584,751	120,876	0	20,207	0	1,725,834	1,584,751
2004	1,618,444	139,600	0	21,062	0	1,779,106	1,618,444
2005	1,613,877	138,978	0	21,250	0	1,774,105	1,613,877
2006	1,642,477	146,024	0	21,718	0	1,810,219	1,642,477
2007	1,626,519	145,081	0	21,382	0	1,792,982	1,626,519
2008	1,668,039	145,975	0	21,953	0	1,835,967	1,668,039
2009	1,714,393	147,125	0	22,502	0	1,884,021	1,714,393
2010	1,735,505	153,618	0	21,874	0	1,910,997	1,735,505
2011	1,759,479	159,142	0	22,031	39,146	1,979,798	1,759,479
2012	1,789,931	164,016	5,811	21,199	71,054	2,052,010	1,795,742
2013	1,767,239	168,460	13,345	21,474	71,216	2,041,734	1,780,584
2014	1,739,395	167,879	12,832	21,727	72,941	2,014,774	1,752,227
2015	1,757,945	172,402	12,194	21,487	76,401	2,040,430	1,770,139
2016	1,809,056	179,450	12,210	21,493	78,889	2,101,098	1,821,266
2017	1,795,484	182,792	12,092	16,120	83,029	2,089,516	1,807,576
2018	1,752,017	169,205	24,571	9,568	83,224	2,038,585	1,776,588
2019	1,746,129	168,641	18,201	9,853	89,020	2,031,845	1,764,330
2020							
2021							

kW/kWh

2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

10-yr Average
5-yr Average
10-yr Trend
5-yr Trend
Trend

Used

Weather Normalized Actuals - 20-year Trend

	General Service > 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Embedded Distributors	Total	GS>50 + DMP
2001							
2002							
2003	1,584,156	120,831	0	20,199	0	1,725,186	1,584,156
2004	1,617,860	139,549	0	21,055	0	1,778,464	1,617,860
2005	1,613,309	138,929	0	21,243	0	1,773,481	1,613,309
2006	1,641,910	145,974	0	21,710	0	1,809,594	1,641,910
2007	1,625,963	145,032	0	21,375	0	1,792,370	1,625,963
2008	1,667,478	145,926	0	21,945	0	1,835,349	1,667,478
2009	1,713,823	147,076	0	22,494	0	1,883,394	1,713,823
2010	1,734,935	153,567	0	21,867	0	1,910,369	1,734,935
2011	1,758,908	159,090	0	22,023	39,133	1,979,155	1,758,908
2012	1,789,355	163,963	5,809	21,192	71,031	2,051,350	1,795,164
2013	1,766,674	168,406	13,341	21,467	71,193	2,041,082	1,780,016
2014	1,738,840	167,825	12,828	21,720	72,918	2,014,132	1,751,668
2015	1,757,386	172,348	12,190	21,480	76,377	2,039,781	1,769,576
2016	1,808,481	179,393	12,206	21,487	78,864	2,100,430	1,820,687
2017	1,794,909	182,734	12,088	16,115	83,002	2,088,847	1,806,997
2018	1,751,451	169,151	24,563	9,565	83,197	2,037,927	1,776,014
2019	1,745,564	168,586	18,195	9,850	88,991	2,031,186	1,763,758
2020							
2021							

kW/kWh

2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

10-yr Average
5-yr Average
10-yr Trend
5-yr Trend
Trend

Used

	Total OPA Annual CDM Results 2006 to 2010 programs	Total IESO Annual CDM Results 2011 to 2014 programs	Total IESO Annual CDM Results 2015 programs	Total IESO Annual CDM Results 2016 programs	Total IESO Annual CDM Results 2017 programs	Total IESO Annual CDM Results 2018 programs	Total IESO Annual CDM Results 2019 programs	Total IESO Annual CDM Results 2020 programs	Total Annual CDM Results
2006	3,672,996								3,672,996
2007	6,313,622								6,313,622
2008	8,314,386								8,314,386
2009	13,364,169								13,364,169
2010	14,361,144								14,361,144
2011	12,467,884	5,907,906							18,375,790
2012	12,173,773	12,851,074							25,024,847
2013	12,094,963	19,640,051							31,735,014
2014	11,576,490	27,849,035							39,425,525
2015	9,881,052	27,271,116	14,057,755						51,209,923
2016	9,311,006	26,465,592	14,014,168	15,699,334					65,490,100
2017	7,384,130	23,606,097	14,013,492	15,699,333	26,195,382				86,898,434
2018	5,180,408	22,862,613	14,022,609	15,683,800	24,093,655	16,428,240			98,271,325
2019	4,422,348	22,065,779	14,009,882	15,668,896	24,093,655	16,392,091	6,916,461		103,569,111
2020	3,433,840	21,584,274	13,917,975	15,668,896	24,088,434	16,271,900	6,865,747	11,436,208	113,267,273
2021	3,286,294	20,814,352	13,917,684	15,531,705	24,087,030	16,126,334	6,804,328	11,333,901	111,901,627
Total	137,238,503	230,917,889	97,953,565	93,951,964	122,558,156	65,218,565	20,586,536	22,770,109	791,195,287

Total Annual CDM Results		Increase over previous year	Monthly Addition	Increase over previous year - Not Persistent	Increase over PY - Monthly Addition -		
					Half Year Rule	Half Rule	Half Rule
2006	3,672,996	3,672,996	47,090	3,672,996	1,836,498	1,836,498	23,545
2007	6,313,622	- 467,293	(5,991)	2,640,626	4,993,309	1,602,851	20,549
2008	8,314,386	2,396,165	30,720	2,000,764	7,314,004	964,436	12,365
2009	13,364,169	3,022,259	38,747	5,049,783	10,839,277	2,709,212	34,733
2010	14,361,144	- 1,560,320	(20,004)	996,975	13,862,656	730,969	9,371
2011	18,375,790	5,334,918	68,396	4,014,646	16,368,467	1,887,299	24,196
2012	25,024,847	2,134,896	27,370	6,649,057	21,700,319	3,734,907	47,883
2013	31,735,014	4,903,717	62,868	6,710,167	28,379,931	3,519,306	45,119
2014	39,425,525	3,541,212	45,400	7,690,511	35,580,270	4,222,464	54,134
2015	51,209,923	8,787,988	112,667	11,784,398	45,317,724	6,164,600	79,033
2016	65,490,100	6,844,188	87,746	14,280,177	58,350,011	7,816,088	100,206
2017	86,898,434	15,617,098	200,219	21,408,334	76,194,267	11,230,643	143,983
2018	98,271,325	- 1,841,577	(23,610)	11,372,891	92,584,879	6,887,761	88,305
2019	103,569,111	6,856,044	87,898	5,297,787	100,920,218	2,507,234	32,144
2020	113,267,273	3,896,894	49,960	9,698,162	108,418,192	5,376,469	68,929
2021	111,901,627	- 4,663,018	(59,782)	(1,365,646)	112,584,450	- 383,062	- 4,911
Total	791,195,287						

	CDM Activity Variable	Check	Persistent Amount	CDM Activity Variable - Half Year		
Jan-06	47,090			23,545		
Feb-06	94,179			47,090		
Mar-06	141,269			70,635		
Apr-06	188,359			94,179		
May-06	235,448			117,724		
Jun-06	282,538			141,269		
Jul-06	329,628			164,814		
Aug-06	376,718			188,359		
Sep-06	423,807			211,904		
Oct-06	470,897			235,448		
Nov-06	517,987			258,993		
Dec-06	565,076	3,672,996	6,780,915	282,538	1,836,498	3,390,458

Jan-07	559,085			303,088		
Feb-07	553,094			323,637		
Mar-07	547,103			344,186		
Apr-07	541,113			364,736		
May-07	535,122			385,285		
Jun-07	529,131			405,834		
Jul-07	523,140			426,384		
Aug-07	517,149			446,933		
Sep-07	511,158			467,483		
Oct-07	505,167			488,032		
Nov-07	499,176			508,581		
Dec-07	493,185	6,313,622	5,918,220.39	529,131	4,993,309	6,349,568
Jan-08	523,905			541,495		
Feb-08	554,625			553,860		
Mar-08	585,345			566,224		
Apr-08	616,065			578,589		
May-08	646,785			590,953		
Jun-08	677,505			603,318		
Jul-08	708,226			615,683		
Aug-08	738,946			628,047		
Sep-08	769,666			640,412		
Oct-08	800,386			652,776		
Nov-08	831,106			665,141		
Dec-08	861,826	8,314,386	10,341,910	677,505	7,314,004	8,130,065
Jan-09	900,573			712,239		
Feb-09	939,320			746,972		
Mar-09	978,067			781,706		
Apr-09	1,016,813			816,439		
May-09	1,055,560			851,173		
Jun-09	1,094,307			885,906		
Jul-09	1,133,054			920,640		
Aug-09	1,171,801			955,373		
Sep-09	1,210,548			990,107		
Oct-09	1,249,295			1,024,840		
Nov-09	1,288,042			1,059,574		
Dec-09	1,326,789	13,364,169	15,921,464	1,094,307	10,839,277	13,131,687

Jan-10	1,306,785			1,103,679		
Feb-10	1,286,780			1,113,050		
Mar-10	1,266,776			1,122,421		
Apr-10	1,246,772			1,131,793		
May-10	1,226,768			1,141,164		
Jun-10	1,206,764			1,150,536		
Jul-10	1,186,760			1,159,907		
Aug-10	1,166,756			1,169,278		
Sep-10	1,146,752			1,178,650		
Oct-10	1,126,748			1,188,021		
Nov-10	1,106,743			1,197,393		
Dec-10	1,086,739	14,361,144	13,040,873	1,206,764	13,862,656	14,481,169
Jan-11	1,155,136			1,230,960		
Feb-11	1,223,532			1,255,156		
Mar-11	1,291,929			1,279,352		
Apr-11	1,360,325			1,303,549		
May-11	1,428,721			1,327,745		
Jun-11	1,497,118			1,351,941		
Jul-11	1,565,514			1,376,137		
Aug-11	1,633,910			1,400,333		
Sep-11	1,702,307			1,424,529		
Oct-11	1,770,703			1,448,725		
Nov-11	1,839,100			1,472,922		
Dec-11	1,907,496	18,375,790	22,889,951	1,497,118	16,368,467	17,965,412
Jan-12	1,934,866			1,545,001		
Feb-12	1,962,237			1,592,885		
Mar-12	1,989,607			1,640,768		
Apr-12	2,016,978			1,688,651		
May-12	2,044,348			1,736,535		
Jun-12	2,071,719			1,784,418		
Jul-12	2,099,089			1,832,302		
Aug-12	2,126,460			1,880,185		
Sep-12	2,153,830			1,928,068		
Oct-12	2,181,201			1,975,952		
Nov-12	2,208,571			2,023,835		
Dec-12	2,235,941	25,024,847	26,831,297	2,071,719	21,700,319	24,860,624

Jan-13	2,298,810			2,116,838		
Feb-13	2,361,678			2,161,957		
Mar-13	2,424,546			2,207,077		
Apr-13	2,487,414			2,252,196		
May-13	2,550,282			2,297,315		
Jun-13	2,613,150			2,342,435		
Jul-13	2,676,019			2,387,554		
Aug-13	2,738,887			2,432,673		
Sep-13	2,801,755			2,477,793		
Oct-13	2,864,623			2,522,912		
Nov-13	2,927,491			2,568,031		
Dec-13	2,990,359	31,735,014	35,884,313	2,613,150	28,379,931	31,357,805
Jan-14	3,035,760			2,667,285		
Feb-14	3,081,160			2,721,419		
Mar-14	3,126,560			2,775,553		
Apr-14	3,171,960			2,829,687		
May-14	3,217,360			2,883,821		
Jun-14	3,262,760			2,937,955		
Jul-14	3,308,160			2,992,090		
Aug-14	3,353,561			3,046,224		
Sep-14	3,398,961			3,100,358		
Oct-14	3,444,361			3,154,492		
Nov-14	3,489,761			3,208,626		
Dec-14	3,535,161	39,425,525	42,421,935	3,262,760	35,580,270	39,153,124
Jan-15	3,647,828			3,341,794		
Feb-15	3,760,494			3,420,827		
Mar-15	3,873,161			3,499,860		
Apr-15	3,985,827			3,578,894		
May-15	4,098,494			3,657,927		
Jun-15	4,211,160			3,736,960		
Jul-15	4,323,827			3,815,994		
Aug-15	4,436,493			3,895,027		
Sep-15	4,549,160			3,974,060		
Oct-15	4,661,826			4,053,094		
Nov-15	4,774,493			4,132,127		
Dec-15	4,887,159	51,209,923	58,645,912	4,211,160	45,317,724	50,533,924

Jan-16	4,974,905			4,311,367		
Feb-16	5,062,651			4,411,573		
Mar-16	5,150,397			4,511,779		
Apr-16	5,238,143			4,611,985		
May-16	5,325,889			4,712,192		
Jun-16	5,413,635			4,812,398		
Jul-16	5,501,381			4,912,604		
Aug-16	5,589,127			5,012,810		
Sep-16	5,676,873			5,113,017		
Oct-16	5,764,619			5,213,223		
Nov-16	5,852,365			5,313,429		
Dec-16	5,940,111	65,490,100	71,281,336	5,413,635	58,350,011	64,963,624
Jan-17	6,140,331			5,557,618		
Feb-17	6,340,550			5,701,601		
Mar-17	6,540,769			5,845,583		
Apr-17	6,740,988			5,989,566		
May-17	6,941,207			6,133,548		
Jun-17	7,141,427			6,277,531		
Jul-17	7,341,646			6,421,514		
Aug-17	7,541,865			6,565,496		
Sep-17	7,742,084			6,709,479		
Oct-17	7,942,303			6,853,461		
Nov-17	8,142,523			6,997,444		
Dec-17	8,342,742	86,898,434	100,112,902	7,141,427	76,194,267	85,697,119
Jan-18	8,319,132			7,229,731		
Feb-18	8,295,522			7,318,036		
Mar-18	8,271,912			7,406,340		
Apr-18	8,248,302			7,494,645		
May-18	8,224,692			7,582,950		
Jun-18	8,201,082			7,671,254		
Jul-18	8,177,472			7,759,559		
Aug-18	8,153,862			7,847,864		
Sep-18	8,130,252			7,936,168		
Oct-18	8,106,642			8,024,473		
Nov-18	8,083,032			8,112,777		
Dec-18	8,059,422	98,271,325	96,713,067	8,201,082	92,584,879	98,412,985

Jan-19	8,147,320			8,233,226		
Feb-19	8,235,218			8,265,370		
Mar-19	8,323,116			8,297,514		
Apr-19	8,411,014			8,329,658		
May-19	8,498,912			8,361,802		
Jun-19	8,586,810			8,393,946		
Jul-19	8,674,708			8,426,090		
Aug-19	8,762,606			8,458,234		
Sep-19	8,850,504			8,490,378		
Oct-19	8,938,402			8,522,522		
Nov-19	9,026,300			8,554,666		
Dec-19	9,114,198	103,569,111	109,370,380	8,586,810	100,920,218	103,041,723
Jan-20	9,164,158			8,655,739		
Feb-20	9,214,119			8,724,668		
Mar-20	9,264,079			8,793,598		
Apr-20	9,314,039			8,862,527		
May-20	9,363,999			8,931,456		
Jun-20	9,413,959			9,000,385		
Jul-20	9,463,920			9,069,314		
Aug-20	9,513,880			9,138,243		
Sep-20	9,563,840			9,207,172		
Oct-20	9,613,800			9,276,101		
Nov-20	9,663,760			9,345,030		
Dec-20	9,713,720	113,267,273	116,564,645	9,413,959	108,418,192	112,967,512
Jan-21	9,653,938			9,409,048		
Feb-21	9,594,156			9,404,137		
Mar-21	9,534,374			9,399,226		
Apr-21	9,474,591			9,394,315		
May-21	9,414,809			9,389,404		
Jun-21	9,355,027			9,384,493		
Jul-21	9,295,244			9,379,582		
Aug-21	9,235,462			9,374,671		
Sep-21	9,175,680			9,369,760		
Oct-21	9,115,898			9,364,849		
Nov-21	9,056,115			9,359,938		
Dec-21	8,996,333	111,901,627	107,955,997	9,355,027	112,584,450	112,260,321
	791,195,287			735,244,473		

Summary of Degree Day Information

Summary of All Heating Degree Days

Month	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
January	667.50	789.40	777.90	652.80	789.60	773.00	715.00	625.70	868.40	879.20	814.70	590.60	698.30
February	735.30	712.60	615.00	547.10	578.40	643.80	620.20	592.00	755.90	699.20	683.50	651.20	785.10
March	523.70	670.40	619.10	505.10	592.50	446.90	618.70	581.20	638.70	540.90	680.50	562.40	582.00
April	434.40	421.90	391.90	312.00	332.60	358.30	324.60	356.20	397.40	354.10	354.60	322.50	403.00
May	171.90	216.10	289.00	77.10	126.70	152.40	140.30	266.80	217.00	196.20	244.90	177.80	166.40
June	25.90	29.40	30.40	66.70	44.40	41.10	47.00	53.10	65.30	92.50	27.30	44.10	35.50
July	17.30	18.90	22.10	6.90	3.20	18.60	22.30	4.70	12.50	21.30	6.80	6.50	28.00
August	4.30	6.20	49.40	12.10	28.80	29.70	2.30	11.00	18.90	55.00	11.90	27.50	19.70
September	143.60	102.20	115.20	63.00	88.90	134.00	118.80	50.20	104.10	71.30	63.40	130.30	74.70
October	245.50	301.40	288.90	257.60	319.00	251.60	276.70	349.30	331.90	287.50	259.90	335.10	184.70
November	539.20	548.10	471.40	440.10	405.10	470.90	370.80	486.40	434.40	432.90	433.10	415.90	511.80
December	741.30	596.50	630.70	572.10	623.70	826.50	563.30	675.60	610.00	700.10	721.60	545.20	686.60
Total	4,249.90	4,413.10	4,301.00	3,512.60	3,932.90	4,146.80	3,820.00	4,052.20	4,454.50	4,330.20	4,302.20	3,809.10	4,175.80

Summary of All Cooling Degree Days

Month	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
January	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	6.60	0.70	-	-	-	-
May	1.70	10.00	-	16.80	10.50	18.70	7.70	5.30	-	6.70	-	17.70	11.20
June	70.80	38.60	50.40	63.70	76.50	35.40	62.40	54.50	25.50	16.30	104.80	32.20	51.20
July	105.90	41.90	59.80	64.80	138.90	44.80	65.70	129.00	50.10	49.30	105.40	117.20	53.80
August	101.90	55.20	21.90	83.10	30.90	46.30	94.20	72.30	72.40	30.60	67.90	45.50	65.10
September	10.80	12.60	5.40	26.00	27.70	23.80	19.20	47.00	6.00	13.70	13.70	2.30	28.00
October	-	-	1.60	-	-	-	-	1.00	-	-	2.60	-	10.90
November	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	291.10	158.30	139.10	254.40	284.50	169.00	249.20	315.70	154.70	116.60	294.40	214.90	220.20

2020-06-29

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Summary (

Summary of .

Month	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	676.80	891.80	721.10	822.00	657.30	681.30	865.90	846.40	717.80	652.10	791.10	802.10
February	651.20	649.60	644.70	689.30	573.00	697.90	831.20	917.50	627.40	537.90	594.90	659.80
March	686.10	562.60	470.90	622.30	370.10	612.00	757.00	662.50	492.60	597.60	591.10	636.50
April	297.90	341.50	260.60	349.60	365.30	384.70	389.90	359.00	431.80	281.60	474.80	386.80
May	243.10	192.80	144.70	156.70	105.80	152.10	168.90	116.20	174.60	214.40	95.20	207.50
June	40.60	75.70	37.70	48.50	42.10	52.60	37.30	54.70	51.20	45.20	41.00	53.60
July	7.60	37.60	6.70	0.80	-	15.10	36.80	19.30	4.80	3.20	3.60	2.20
August	36.20	18.20	14.20	6.90	19.40	32.70	31.10	29.50	2.10	34.50	6.60	16.90
September	93.20	88.80	122.70	98.40	125.40	128.10	117.70	58.20	68.60	81.10	77.20	89.60
October	325.70	329.10	284.60	279.90	279.20	262.10	257.10	290.10	246.80	208.90	317.50	294.10
November	499.70	396.50	424.10	382.40	483.60	517.70	529.90	391.10	388.20	480.00	538.60	556.90
December	694.00	669.50	719.40	574.80	565.50	727.30	597.60	467.20	647.80	755.70	600.80	623.10
Total	4,252.10	4,253.70	3,851.40	4,031.60	3,586.70	4,263.60	4,620.40	4,211.70	3,853.70	3,892.20	4,132.40	4,329.10

Summary of .

Month	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-
April	-	3.20	-	-	-	-	-	-	-	-	-	-
May	0.70	2.30	21.00	13.20	18.20	19.60	9.00	29.80	18.40	2.70	32.50	-
June	53.00	26.20	32.60	21.60	61.20	31.30	44.30	15.50	34.30	43.00	41.50	15.70
July	75.80	14.50	106.60	129.70	128.20	86.50	38.80	57.70	103.00	58.50	89.30	100.10
August	29.50	57.30	85.30	60.10	59.10	42.10	28.50	47.90	105.00	28.60	93.90	48.30
September	12.00	5.50	23.00	19.70	16.40	20.50	11.40	45.30	26.60	36.30	48.80	13.80
October	-	-	-	-	-	-	-	-	1.90	3.20	5.20	3.50
November	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-
Total	171.00	109.00	268.50	244.30	283.10	200.00	132.00	196.20	289.20	172.30	311.20	181.40

2020-06-29

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Summary (

Summary of .

Month	10 Year Avg	20 Year Trend	20 Year Avg
January	755.71	762.24	754.53
February	677.36	678.82	667.81
March	581.26	603.56	582.16
April	368.41	381.97	357.65
May	153.61	152.32	180.34
June	46.39	46.35	46.86
July	9.25	8.38	14.69
August	19.39	19.78	21.78
September	96.70	88.24	101.70
October	272.03	268.82	285.34
November	469.25	489.02	459.70
December	627.92	613.93	652.07

Total

Summary of .

Month	10 Year Avg	20 Year Trend	20 Year Avg
January	0.00	0.00	0.00
February	0.00	0.00	0.00
March	0.00	0.00	0.00
April	0.00	-0.27	0.53
May	16.44	16.78	11.74
June	34.10	30.23	40.13
July	89.84	87.24	80.20
August	59.88	56.87	59.00
September	26.18	27.77	21.65
October	1.38	2.38	1.42
November	0.00	0.00	0.00
December	0.00	0.00	0.00

Total

2020-06-29

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ATTACHMENT 3-3

IESO SECTOR – COVID-19

An overview of COVID-19 impacts on electricity system operations

Webinar

April 23, 2020

Today's Webinar Presenters

- **Terry Young**, Vice President of Policy, Engagement and Innovation
- **Leonard Kula**, Vice President of Planning, Acquisition and Operations
- **Chuck Farmer**, Sr. Director of Power System Planning
- **Kausar Ashraf**, Manager, Demand & Conservation Planning
- **David Robitaille**, Sr. Director, Market Operations
- **Tam Wagner**, Sr. Manager, Operational Effectiveness
- **Jordan Penic**, Sr. Manager, Engagement and Indigenous Relations

Overview

- Ontario's electricity system is reliable, with enough supply available to meet demand under a variety of risk scenarios
- IESO and stakeholders have been limiting staff on-site, deferring non-essential work, and focusing on core operations
- COVID-19 has disrupted many businesses, resulting in reduced provincial demand and creating significant uncertainty in supply and demand forecasts
 - Demand reductions in all hours ranging from 800 – 3,000 MW, which is 6 -18% of typical demand for this time of year
- Ongoing dialogue is especially important during periods of uncertainty to ensure we can maintain the reliable operation of the grid

PANDEMIC OPERATIONS PREPAREDNESS

System Operations During Pandemic



- The health and safety of staff remains the sector's top priority during the pandemic
- The need to maintain reliability under these circumstances has required the sector to re-evaluate its normal operations
- IESO initiated a number of stakeholder forums to ensure coordination across the sector, even prior to a state of emergency being declared across the province
- Managing workforce attendance risks and demand uncertainty changed the day-to-day operations of energy sector organizations, as well as power system operations
- The IESO is in continuous contact with other reliability coordinators to discuss pandemic planning tactics and strategies

Pandemic Preparations at IESO

- The IESO's internal pandemic plans were executed to safeguard essential staff and maintain reliability, all other IESO staff are working from home
- Control room operator teams are physically separated with day shifts operating at the IESO's primary control centre, and the night shifts operating from the back-up control centre
 - A third control room was built and successfully deployed in 10 days, which can be used to further maintain physical separation of control room operators
- All individuals that come on site at the IESO's control centres are monitored with temperature and health screenings
- IESO is prepared to have control room operators and other essential staff remain at the primary control centre 24/7 should the need arise

Pandemic Preparations with Stakeholders

- Emergency Preparedness Task Force (EPTF) began regular meetings to discuss preparations for the emerging pandemic on February 19
- The Crisis Management Support Team (CMST) was activated on March 26 as the situation continued to escalate with indications of community spread, and the EPTF was stood down
- The activation of CMST transitioned the focus from crisis planning to crisis response, with a focus on potential risks to grid operations
- The CMST continues to meet twice weekly to gather, communicate and analyse information related to the situation and to monitor for potential impacts on the power system, public health and safety, and the environment
- IESO will continue to issue regular communications to stakeholders through the Bulletin, social media channels, and ieso.ca

Early Operational Response to Pandemic

- Uncertainty in demand patterns and the need to respond to unanticipated events caused by potential workforce limitations, led to close coordination with market participants to develop revised operational plans to maintain system resilience
- This resulted in:
 - returning of critical power system elements to service that were on outage
 - enabling outages to proceed to reduce the risk of potential forced outages in the near future
 - allowing outages to proceed that did not have significant impact on the power system
- As system conditions normalize, the IESO will be working with market participants to transition back to regular outage planning and operational practices

Increase in Surplus Baseload Generation



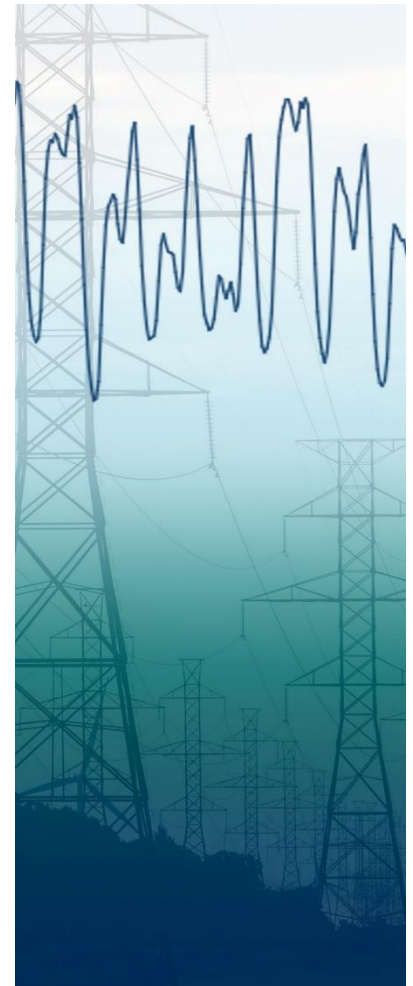
- High surplus baseload generation (SBG) conditions are often observed in the spring when demand is low and there are large amounts of energy from hydroelectric resources caused by higher water levels
- As COVID-19 measures were put in place, it was anticipated that demand would decrease and SBG this spring would be exacerbated
- The IESO continues to update its assessment of SBG conditions and SBG management options through spring/early summer
- Neighbouring jurisdictions do not typically experience the same levels of SBG as Ontario – however, this is being closely monitored as demands continue to trend lower

Questions?

SYSTEM IMPACTS

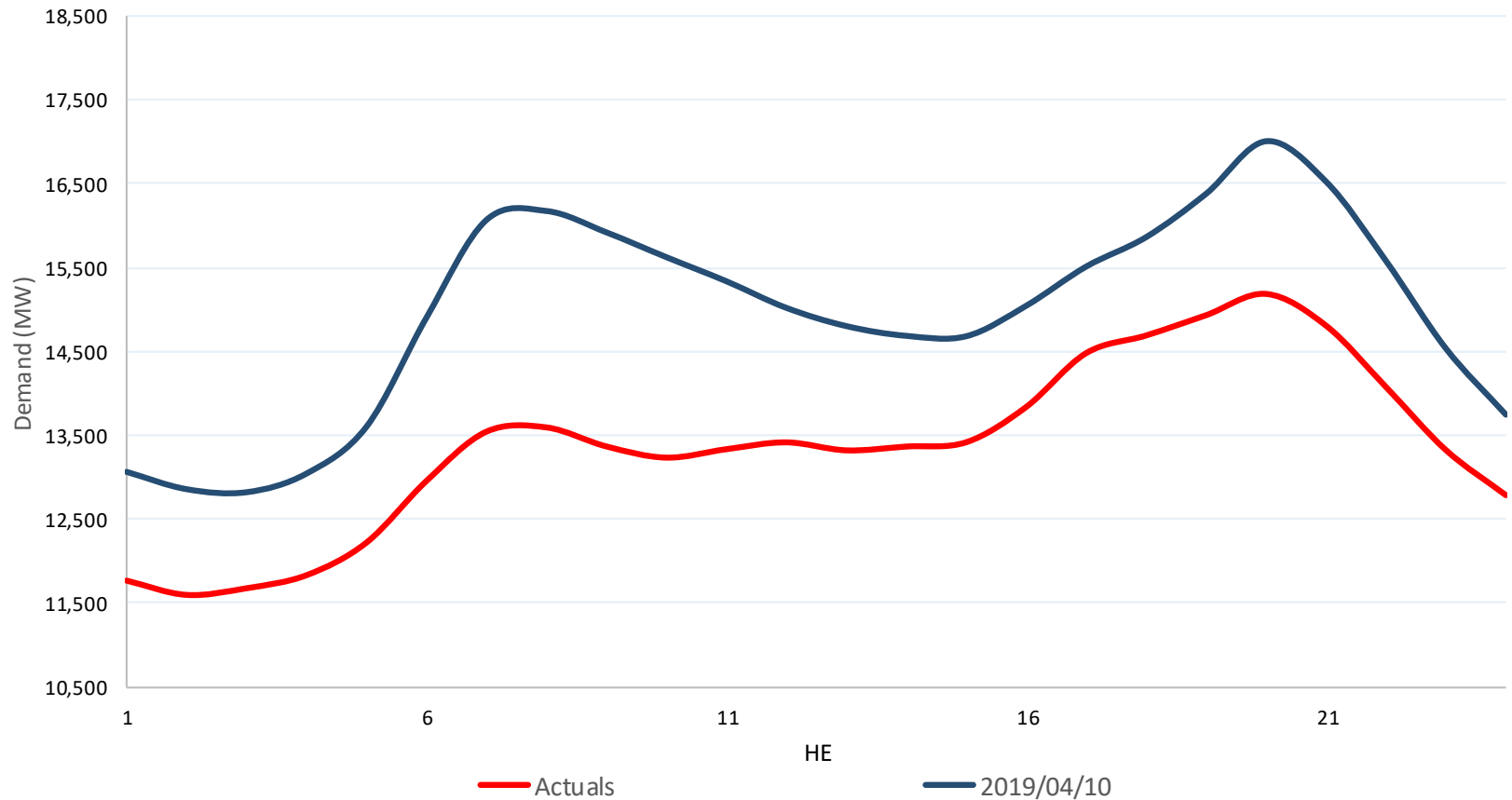
Overall Impact on Demand for Electricity

- System demand reductions in all hours ranging from 800 – 3,000 MW, which is 6 -18% of typical demand for this time of year
- System peak demand has been reduced by approximately 10-15%
- Overall energy consumption to date continues to be approximately 10-12% lower than normal
- Demand is expected to continue to decrease through April and May when warmer weather materializes



System Snapshot: April 14, 2020

Similar Day Comparisons - Demand Profiles for Tuesday April 14, 2020



Demand Observations By Consumer Group

Residential demand:

- Peak demand has increased by 2%
- Energy consumption has increased by 4%

Small Commercial (<50MW)

- Peak demand reduced by 17% (weekdays)
14% (weekends)
- Energy has reduced by 12% (weekdays) and 8% (weekends)



Distribution Connected Industrial/Commercial Customers

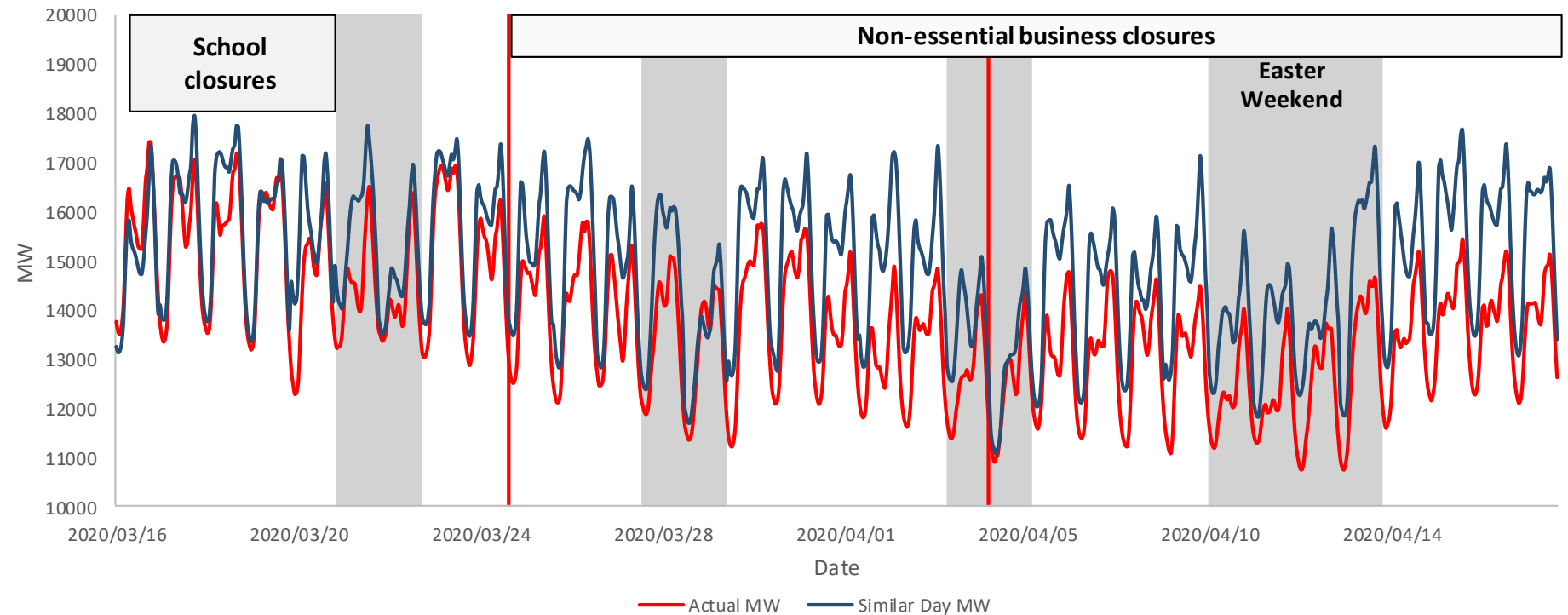
- Peak demand average reductions 17% (inclusive of holidays impacts)
- Energy has reduced by 17% (inclusive of holidays impacts)

Transmission Connected Wholesale Customer Demand

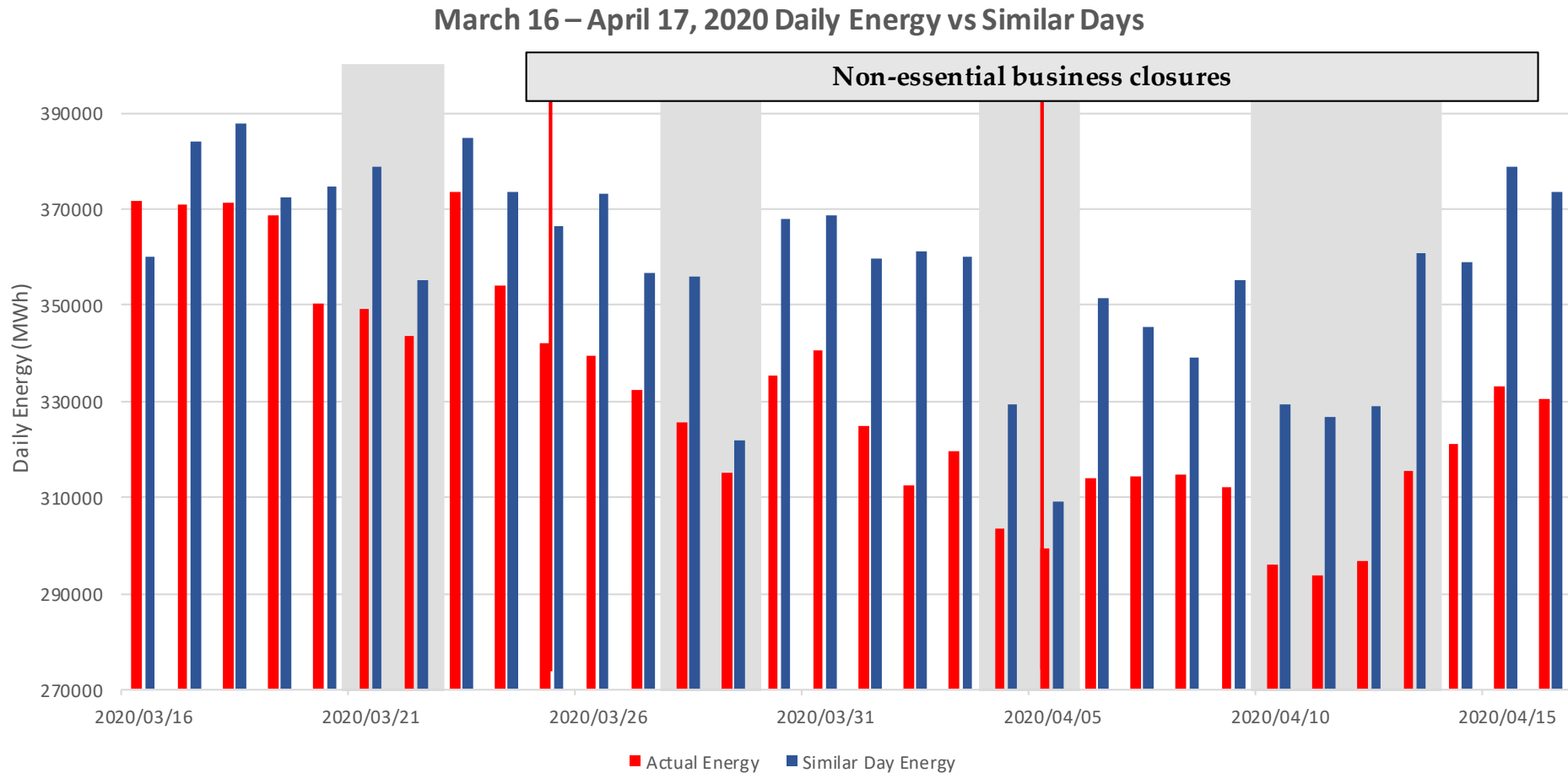
- Peak demand average reduction 16% (inclusive of holidays impacts)
- Energy has decreased on average 16% (inclusive of holidays)

Ontario Demand March 16- April 17, 2020

March 16-April 17 2020 Hourly Demand vs. Similar Days

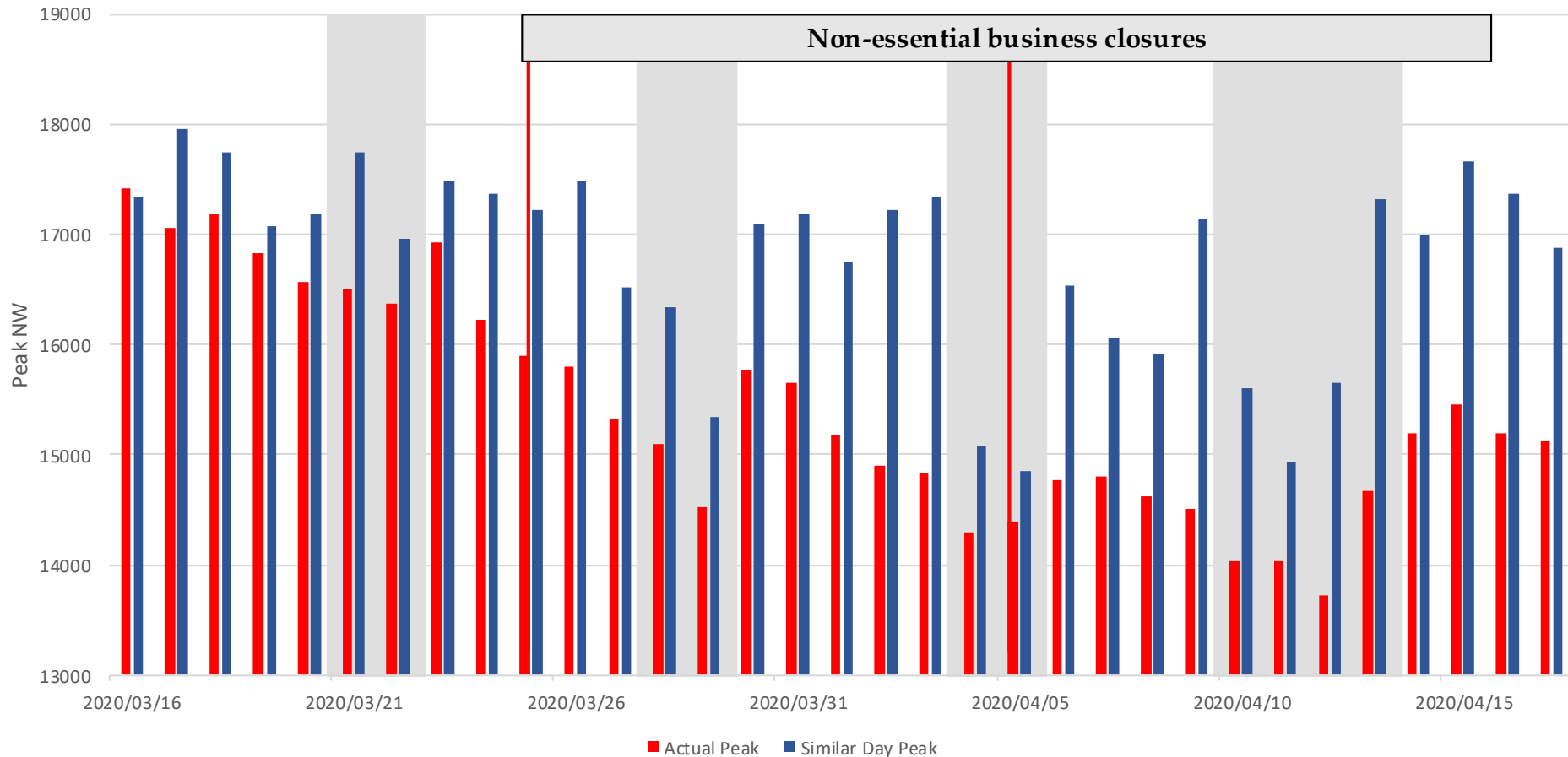


Ontario Daily Energy Use is Down 10-12%



Peak Demand is Down by 10-15 %

March 16 – April 17, 2020 Peaks vs Similar Days



Residential Consumer Behavior

- shifted to working from home, coupled with province-wide school closures, resulting in a 1-3 % increase in load
- morning peak ramping up slower as residents gradually shift into their new routine
- If a warm spring, there may be additional air conditioning load to consider

Detached	Multi Residential	Seasonal
• Overall – 2-8% increase in daily peaks • Weekdays – 4-8% increase in energy • Weekend – 1-5% increase in energy	• Overall – 1-5% increase in daily peaks • Weekdays 1-7% increase in energy • Weekend – 1-4% increase in energy	• Overall – 5-24% increase in daily peaks • Weekdays – 10-24% increase in energy • Weekends -8-15% increase in energy • Daily min – 7-28% increase

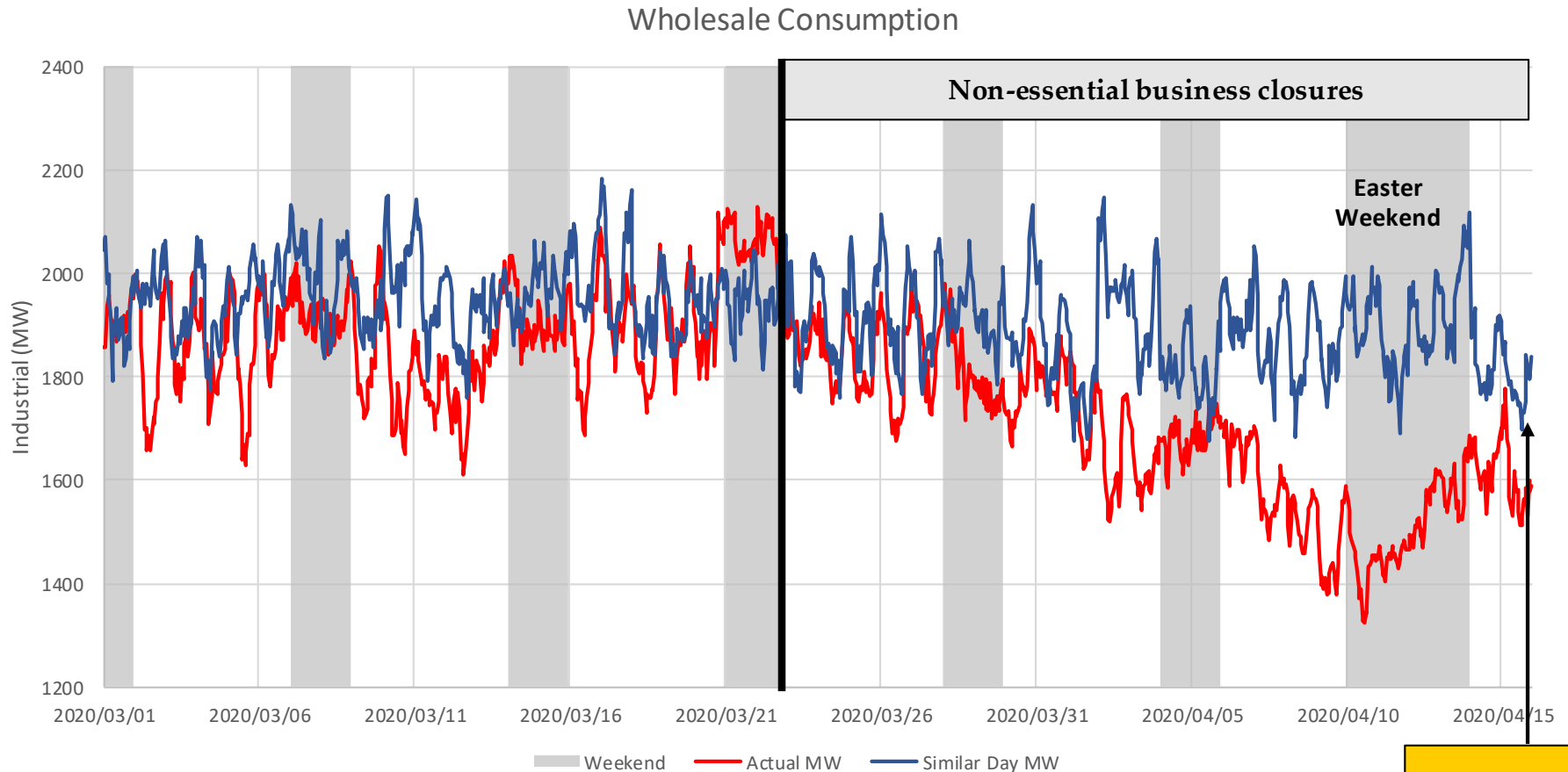
Commercial Consumer Behavior

- Impacted by the mandatory closures of non-essential business, and many shut down or initiated 'care & maintenance' procedures
- Nearly 80% of commercial load will be impacted by measures taken to combat COVID-19
- Specifically the small commercial sector (<50MW) impacts are:
 - Weekday peaks reduced by 15-21%, weekend 8-15%
 - Weekday energy reduced by 10-16%, weekend 3-13%
- Distribution connected industrial/commercial (malls, community, retail, office, small industrial) has seen the greatest reductions
 - Overall peak reductions ranging 10-23%
 - Overall energy reduction ranging 14-22%

Wholesale Consumer Behavior

- IESO has visibility into approx. 1,500-2,000 MW of customers that are directly connected to the transmission system
- current reductions in this consumer segment are on average between 250-300MW
- government has urged manufacturing to consider producing essential goods to help combat COVID-19, this may result in a marginal bounce-back in load, however this may take time to materialize

Wholesale Consumers Demand Down 13-26%



**Demand
returning to
pre-Easter
levels**

Questions?

LOOKING FORWARD

Significant Uncertainty to Both Supply and Demand

COVID-19 impacts have created significant uncertainty in forecasts:

- Demand has declined significantly (both daily peaks and energy)
- Demand forecasts for the next 5 years are very uncertain depending on the length and depth of the downturn and the nature of the recovery
- The nuclear refurbishment schedule has been delayed with further changes expected
- Other generation facilities may experience difficulty performing regular maintenance, which may in the future lead to higher forced-outage rates
- Transmission development (new projects) is delayed

Demand Uncertainties

- As a result of pandemic response measures, daily peak demands are down by as much as 18%, energy use is down by about 15%
- The outlook for demand over the next 5 years will be driven by the depth and duration of the pandemic response measures
 - A shorter event has a higher probability of a recovery of economic activity in 2021 leading to a return to normal demand trends over the next 18 months
 - A longer event or a second wave with a second set of business closures may cause significant economic restructuring and a lengthy recession
- Economic forecasts are mixed, but there is increasing sentiment that a global recession is likely
- Historically, following major recessions there has been a lag in economic recovery versus system impacts

Supply Uncertainties

- COVID-19 has the potential to impact major investments currently underway in supply
- Nuclear refurbishment is the biggest source of new supply over the next 10 years
 - Refurbishment schedules are likely to be impacted and delays are expected
 - Other generators may experience difficulty completing routine maintenance, this may lead to high forced outage rates in the future
- Access to capital, debt and to supply chains could limit the entry of new resources to the system and potentially cause existing resources requiring sustaining capital to shut down

System Costs

- It is too early to assess any impacts on system costs resulting from measures put in place to manage COVID-19
- However, total system costs are unlikely to change materially in the near-term
- Most system costs are fixed – if demand declines, then average unit rates (cents per kWh) may increase
- The IESO will continue to assess any short and long-term system cost impacts once further data is available

Planning Outlook

- The next Annual Planning Outlook will be ready for Q4, 2020 and will incorporate the most up to date information available
 - Market Participants are urged to provide updated outage plans to the IESO to support the assessment process
- In the near-term, IESO will release updated information through the next [Reliability Outlook](#) in June to inform system operations and outage management
- IESO is also exploring other means to keep the sector informed as we manage through the COVID-19 situation

Questions?

ENGAGING WITH STAKEHOLDERS

Understanding Customers and Stakeholders

- Adjusting to customer needs:
 - Seeking to identify early impacts and information needed to adapt system and market operations
 - listening to understand business continuity outlook across all major sectors – clearly focused on immediate priorities
 - Measuring stakeholder capacity and prioritizing IESO activities accordingly
- Adapting stakeholder engagement activities
 - Engagement activities moved to webinar and are being recorded
 - Feedback periods extended to a minimum of three weeks
 - Prioritizing active engagement



Looking Ahead

- Energy Sector [online survey](#) closes April 24
 - Feedback will guide the IESO as it prioritizes activities, conducts outreach and works to better understand how it can continue to support the sector
- Peak Tracker enhancements go live on May 1
 - Two additional data points, earlier, to help Class A participants make business decisions earlier
- Monthly Stakeholder Engagement Days on May 20-22
 - Monthly, more predictable and efficient
 - Open to all stakeholders
 - Will include next update on sector impact of COVID-19

Staying connected



@IESO_Tweets



engagement@ieso.ca



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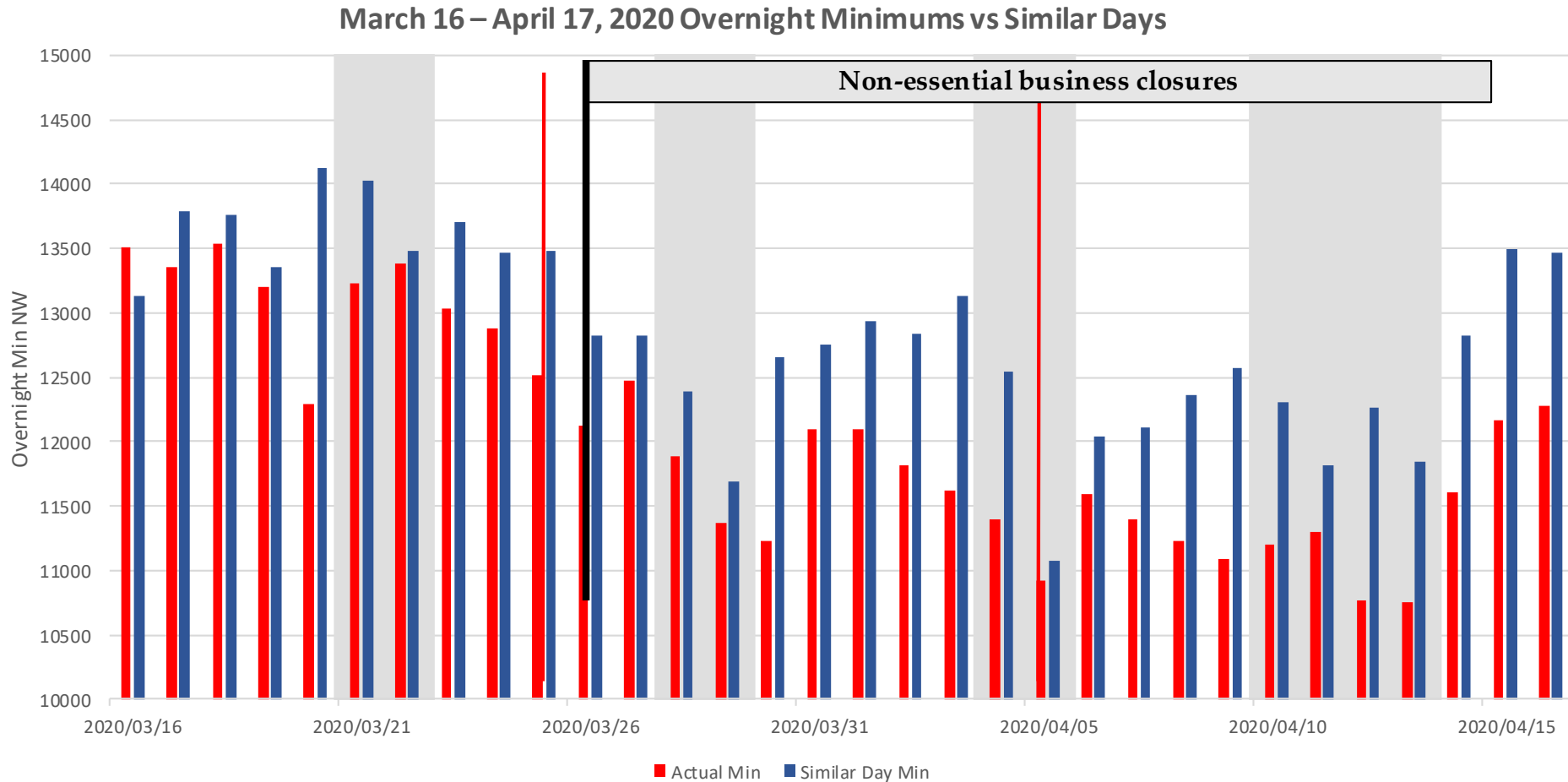
1-888-448-7777
Customer.relations@ieso.ca

Appendix

Key Dates in the Pandemic Response

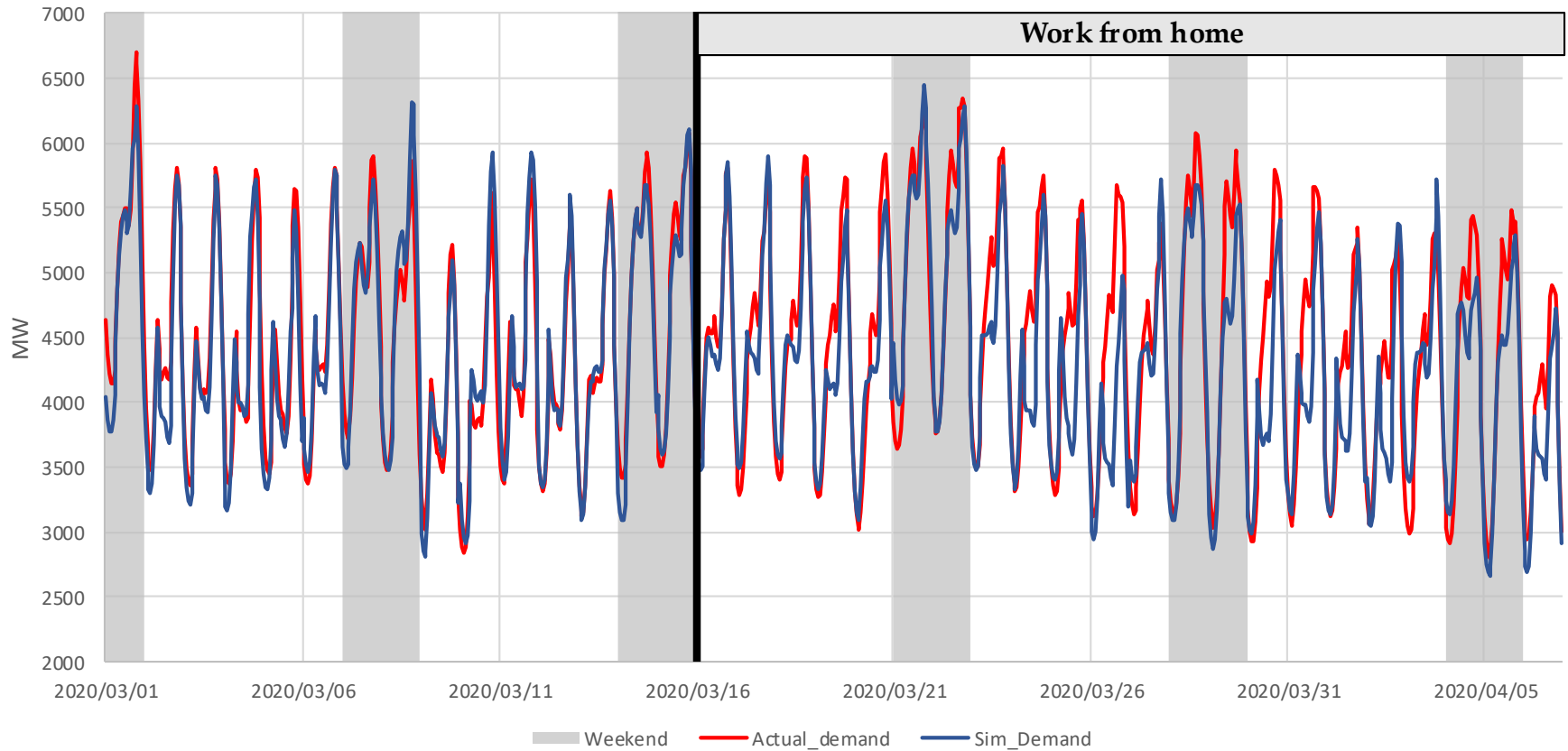
Date	Changes
March 11, 2020	COVID-19 was declared as a pandemic by WHO
March 16, 2020	Start of March Break and first day of mandatory work-from-home
March 17, 2020	Ontario declared a state of emergency
March 22, 2020	End of March Break, but schools remained closed with the possibility of further extensions
March 24, 2020	Mandatory closures of non-essential businesses in Ontario as of 11:59pm.
April 4, 2020	Additional non-essential businesses were asked to close as of 11:59pm.

Overnight Lows are Reduced by 9-13%



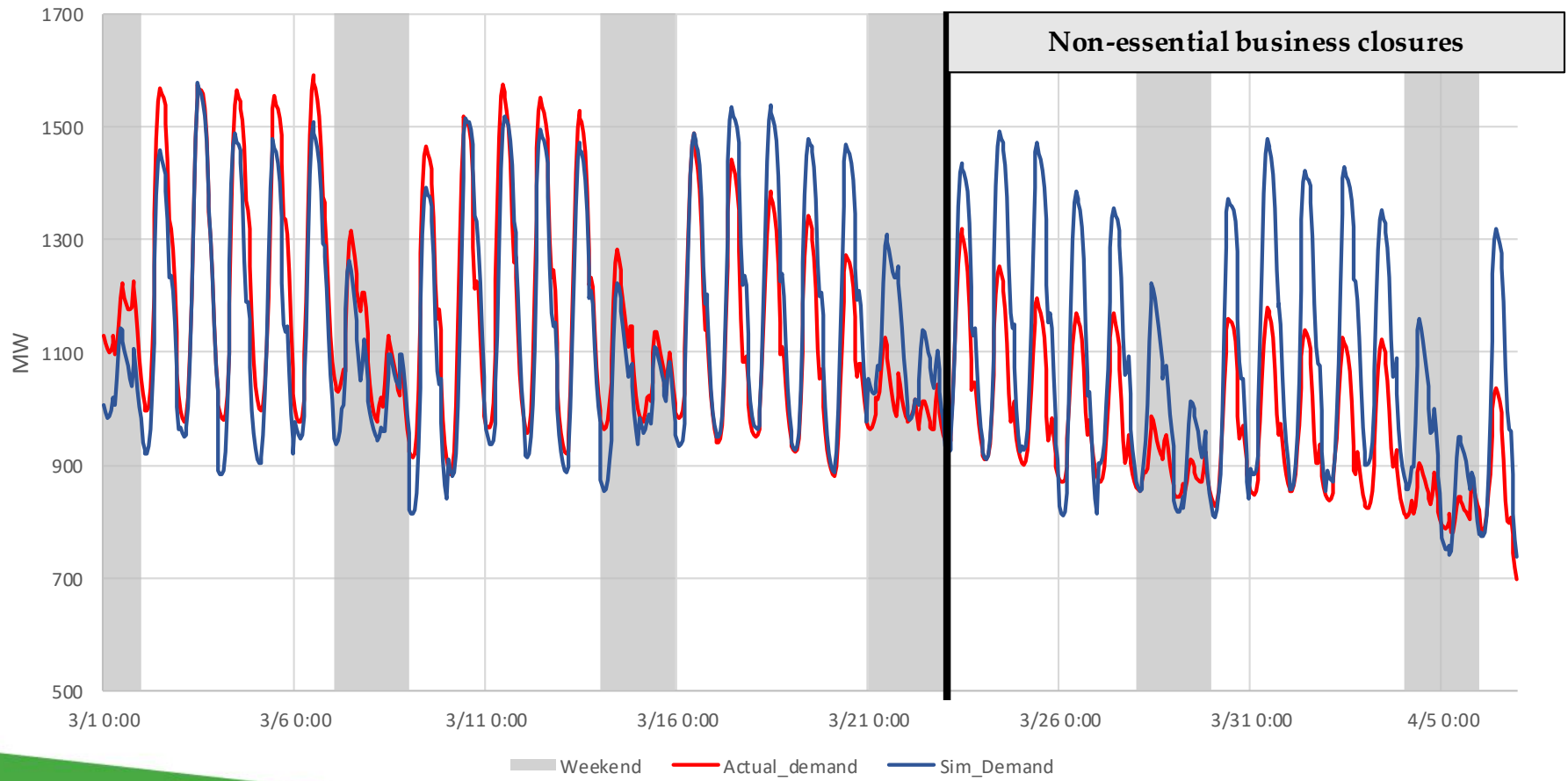
Residential Consumption Shows Slight Increase

Residential Consumption March and April 2020

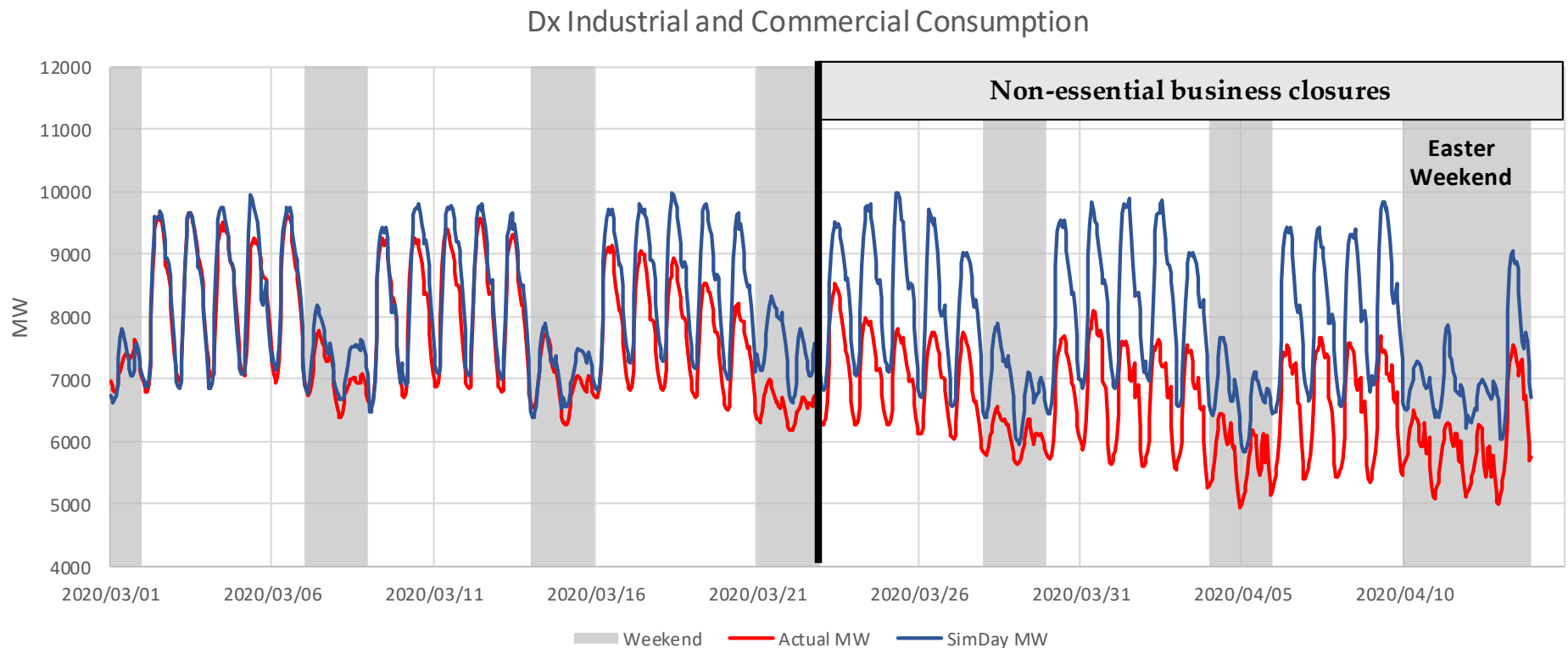


Small Commercial Peaks Down 14-17%

Small Commercial - March and April 2020



Distribution Connected Industrial/Commercial Peaks Down 10-23%





ATTACHMENT 3-4

LOAD FORECAST – COVID-19

	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Weather Normal	2021 Weather Normal
Actual kWh Purchases	1,269,973,824	1,294,310,410	1,358,556,813	1,372,533,120	1,423,569,039	1,421,429,683	1,411,764,680	1,479,129,865	1,488,841,981	1,499,089,218	1,499,180,241	1,489,942,245	1,485,911,225	1,494,900,181	1,454,050,279	1,518,504,309	1,483,499,736		
Predicted kWh Purchases	1,269,647,330	1,309,934,927	1,382,738,344	1,376,587,499	1,403,612,103	1,415,940,928	1,417,829,607	1,459,251,936	1,477,829,607	1,487,080,479	1,499,189,177	1,495,163,736	1,497,170,188	1,511,872,715	1,476,990,377	1,501,723,627	1,474,774,779	1,471,792,823	1,458,626,877
% Difference	0.0%	1.2%	1.8%	0.3%	-1.4%	-0.4%	0.4%	-1.3%	-0.8%	-0.7%	0.0%	0.4%	0.8%	1.1%	1.6%	-1.1%	-0.6%		
Billed kWh	1,216,900,996	1,249,737,840	1,304,584,908	1,326,077,776	1,367,527,466	1,370,617,488	1,360,402,644	1,425,614,249	1,437,226,191	1,450,973,841	1,448,566,259	1,447,248,320	1,441,031,603	1,444,462,268	1,409,167,205	1,467,265,689	1,438,045,052	1,284,119,193	1,268,724,771
By Class																			
Residential Customers	39,236	40,531	41,769	42,668	43,382	44,172	44,853	45,488	46,194	46,877	47,602	48,191	48,750	49,431	50,115	50,664	51,041	51,255	51,294
kWh	381,172,838	385,085,949	408,053,981	391,947,395	405,071,612	405,533,476	397,106,489	413,251,129	408,768,579	409,922,519	409,442,945	410,104,642	404,728,026	404,436,333	396,801,470	413,689,291	406,423,263	401,234,202	396,756,157
General Service < 50 kW Customers	4,967	5,001	5,062	5,119	5,151	5,184	5,253	5,343	5,407	5,454	5,503	5,547	5,623	5,700	5,782	5,838	5,867	5,777	5,662
kWh	178,733,409	181,654,718	187,375,742	189,284,333	192,047,825	185,031,934	179,794,279	185,040,278	187,070,265	190,189,482	194,737,949	197,096,102	196,078,596	193,116,426	189,981,988	197,978,623	198,022,375	173,916,622	168,422,641
General Service > 50 to 4999 kW Customers	646	632	623	622	627	647	663	663	666	667	668	681	697	715	735	751	752	743	746
kWh	581,134,405	606,602,563	627,713,059	660,327,538	682,785,512	693,615,296	697,125,703	734,775,051	725,123,828	716,491,037	705,737,128	699,842,688	696,649,002	701,389,229	678,663,686	706,516,664	683,561,942	572,739,677	568,191,337
kW	1,578,391	1,578,377	1,609,887	1,625,474	1,650,921	1,665,645	1,682,115	1,762,264	1,775,934	1,801,339	1,766,195	1,726,654	1,734,984	1,796,641	1,747,019	1,795,199	1,752,761	1,450,060	1,461,496
Large User Customers	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
kWh	65,433,586	66,067,057	70,553,960	73,668,918	77,115,461	76,733,608	76,507,951	82,593,009	84,249,637	86,740,767	90,202,679	91,205,251	92,984,875	95,179,112	95,093,184	98,366,842	96,183,866	78,926,173	77,986,054
kW	120,391	136,143	138,634	144,512	147,258	145,766	144,355	155,986	160,630	165,061	168,361	166,649	170,151	178,218	177,858	173,376	169,281	139,615	137,952
Direct Market Participant Customers	0	0	0	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	3
kWh</																			

COVID-19 ESTIMATED IMPACTS:

		kWh								
		<u>Residential</u>	<u>General Service < 50 kW</u>	<u>General Service > 50 to 4999 kW</u>	<u>Large User</u>	<u>Direct Market Participant</u>	<u>Street Lights</u>	<u>Unmetered Loads</u>	<u>Embedded Distributors - #1</u>	
Reduction/increase in usage:										
Avg. usage/cust - Application	2020	7,864	33,620	909,583	98,527,751	3,072,009	223	5,453	41,857,714	
Avg. usage/cust - Application	2021	7,864	33,620	909,583	98,527,751	3,072,009	223	5,453	41,857,714	
Avg. usage/cust - Pandemic reduced	2020	7,864	30,244	773,234	79,290,978	3,072,009	223	5,453	41,857,714	
Avg. usage/cust - Pandemic reduced	2021	7,864	30,244	773,234	79,290,978	3,072,009	223	5,453	41,857,714	
Reduction	2020	0	-3,375	-136,349	-19,236,773	0	0	0	0	
Reduction	2021	0	-3,375	-136,349	-19,236,773	0	0	0	0	
		0%	-10%	-15%	-20%	0%	0%	0%	0%	
Reduction/increase in count:										
Avg. cust count - Application	2020	51,383	5,924	752	1	3	14,847	535	1	73,447
Avg. cust count - Application	2021	51,718	5,989	771	1	3	15,005	540	1	74,029
Avg. cust count - Pandemic reduced	2020	51,255	5,777	743	1	3	14,847	535	1	73,162
Avg. cust count - Pandemic reduced	2021	51,294	5,662	743	1	3	15,005	540	1	73,249
Reduction	2020	-128	-147	-9	0	0	0	0	0	-285
Reduction	2021	-424	-327	-28	0	0	0	0	0	-779
		-1%	-5%	-4%	0%	0%	0%	0%	0%	
Impact of Reduction to Usage:										
Avg. usage/cust * Avg. cust count	2020	0	-19,997,167	-102,571,114	-19,236,773	0	0	0	0	-141,805,053
Avg. usage/cust * Avg. cust count	2021	0	-20,216,068	-105,130,576	-19,236,773	0	0	0	0	-144,583,417
		0%	-10%	-15%	-20%	0%	0%	0%	0%	-10%
Non Weather Corrected Forecast:										
Application	2020	404,095,708	199,172,655	684,251,974	98,527,751	9,216,027	3,312,567	2,916,211	41,857,714	1,443,350,608
Application	2021	406,730,672	201,352,917	701,326,151	98,527,751	9,216,027	3,347,727	2,947,114	41,857,714	1,465,306,075
Pandemic reduced	2020	403,088,751	174,720,484	574,499,449	79,290,978	9,216,027	3,312,567	2,916,211	41,857,714	1,288,902,183
Pandemic reduced	2021	403,394,996	171,240,823	574,485,964	79,290,978	9,216,027	3,347,727	2,947,114	41,857,714	1,285,781,344
Reduction	2020	-1,006,956	-24,452,170	-109,752,525	-19,236,773	0	0	0	0	-154,448,425
Reduction	2021	-3,335,676	-30,112,094	-126,840,188	-19,236,773	0	0	0	0	-179,524,731
		-1%	-15%	-18%	-20%	0%	0%	0%	0%	-12%
Weather Corrected Forecast:										
Application	2020	399,456,598	196,886,108	679,022,051	97,396,631	9,216,027	3,312,567	2,916,211	41,857,714	1,430,063,908
Application	2021	395,056,934	195,573,807	687,924,696	95,699,867	9,216,027	3,347,727	2,947,114	41,857,714	1,431,623,886
Pandemic reduced	2020	401,234,202	173,916,622	572,739,677	78,926,173	9,216,027	3,312,567	2,916,211	41,857,714	1,284,119,193
Pandemic reduced	2021	396,756,157	168,422,641	568,191,337	77,986,054	9,216,027	3,347,727	2,947,114	41,857,714	1,268,724,771
Reduction	2020	1,777,603	-22,969,486	-106,282,374	-18,470,458	0	0	0	0	-145,944,714
Reduction	2021	1,699,223	-27,151,166	-119,733,359	-17,713,814	0	0	0	0	-162,899,116
		0%	-14%	-17%	-19%	0%	0%	0%	0%	-11%

Month	Purchased kWh Utilisrsmart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
Jan-96	104,439,190				484,331	103,954,859	789.4	0	31	0	352	36,997	-	98,902,810	-5,052,049	-4.9%	4.9%		98,902,810
Feb-96	97,116,320				450,371	96,665,949	712.6	0	29	0	336	37,049	-	91,444,445	-5,221,504	-5.4%	5.4%		91,444,445
Mar-96	93,206,737				432,241	92,774,496	670.4	0	31	1	336	37,100	-	92,615,432	-159,064	-0.2%	0.2%		92,615,432
Apr-96	84,435,799				391,566	84,044,233	421.9	0	30	1	336	37,152	-	83,578,976	-465,257	-0.6%	0.6%		83,578,976
May-96	79,585,420				369,073	79,216,347	216.1	10	31	1	352	37,204	-	83,363,988	4,147,641	5.2%	5.2%		83,363,988
Jun-96	80,505,911				373,341	80,132,570	29.4	38.6	30	0	320	37,256	-	82,593,052	2,460,483	3.1%	3.1%		82,593,052
Jul-96	82,378,016				382,023	81,995,993	18.9	41.9	31	0	352	37,307	-	87,341,149	5,345,156	6.5%	6.5%		87,341,149
Aug-96	86,219,874				399,840	85,820,034	6.2	55.2	31	0	336	37,359	-	89,044,258	3,224,224	3.8%	3.8%		89,044,258
Sep-96	81,006,662				375,664	80,630,998	102.2	12.6	30	1	320	37,411	-	77,087,117	-3,543,881	-4.4%	4.4%		77,087,117
Oct-96	84,736,264				392,959	84,343,305	301.4	0	31	1	352	37,463	-	84,213,307	-129,997	-0.2%	0.2%		84,213,307
Nov-96	91,599,265				424,786	91,174,479	548.1	0	30	1	320	37,514	-	87,036,784	-4,137,695	-4.5%	4.5%		87,036,784
Dec-96	94,268,053				437,163	93,830,890	596.5	0	31	0	320	37,566	-	93,003,282	-827,608	-0.9%	0.9%		93,003,282
Jan-97	105,017,710				453,613	104,564,098	777.9	0	31	0	352	37,653	-	100,238,833	-4,325,264	-4.1%	4.1%		100,238,833
Feb-97	91,033,887				393,211	90,640,676	615	0	28	0	320	37,740	-	87,255,165	-3,385,511	-3.7%	3.7%		87,255,165
Mar-97	95,075,286				410,668	94,664,618	619.1	0	31	1	37,827	-	91,063,373	-3,601,245	-3.8%	3.8%		91,063,373	
Apr-97	85,363,047				368,717	84,994,330	391.9	0	30	1	352	37,914	-	85,642,934	648,604	0.8%	0.8%		85,642,934
May-97	81,823,270				353,427	81,469,843	289	0	31	1	336	38,001	-	84,248,394	2,778,551	3.4%	3.4%		84,248,394
Jun-97	85,276,289				368,342	84,907,947	30.4	50.4	30	0	336	38,088	-	88,276,298	3,368,351	4.0%	4.0%		88,276,298
Jul-97	88,667,230				382,989	88,284,242	22.1	59.8	31	0	352	38,174	-	93,529,004	5,244,762	5.9%	5.9%		93,529,004
Aug-97	82,986,440				358,451	82,627,988	49.4	21.9	31	0	320	38,261	-	84,278,301	1,650,313	2.0%	2.0%		84,278,301
Sep-97	82,339,214				355,655	81,983,559	115.2	5.4	30	1	336	38,348	-	79,222,381	-2,761,178	-3.4%	3.4%		79,222,381
Oct-97	87,421,436				377,608	87,043,828	288.9	1.6	31	1	352	38,435	-	86,670,013	-373,815	-0.4%	0.4%		86,670,013
Nov-97	91,084,451				393,430	90,691,021	471.4	0	30	1	304	38,522	-	86,464,150	-4,226,872	-4.7%	4.7%		86,464,150
Dec-97	95,971,206				414,537	95,556,669	630.7	0	31	0	336	38,609	-	97,568,695	2,012,026	2.1%	2.1%		97,568,695
Jan-98	99,755,427				369,728	99,385,699	652.8	0	31	0	336	38,689	-	98,404,640	-981,059	-1.0%	1.0%		98,404,640
Feb-98	88,298,732				327,266	87,971,466	547.1	0	28	0	320	38,769	-	87,951,324	-20,142	0.0%	0.0%		87,951,324
Mar-98	96,142,109				356,336	95,785,773	505.1	0	31	1	352	38,849	-	93,391,173	-2,394,600	-2.5%	2.5%		93,391,173
Apr-98	82,977,188				307,542	82,669,646	312	0	30	1	336	38,929	-	85,013,787	2,344,141	2.8%	2.8%		85,013,787
May-98	85,056,523				315,249	84,741,274	77.1	16.8	31	1	320	39,009	-	83,568,164	-1,173,110	-1.4%	1.4%		83,568,164
Jun-98	90,611,662				335,838	90,275,824	66.7	63.7	30	0	352	39,089	-	95,703,542	5,427,719	6.0%	6.0%		95,703,542
Jul-98	93,536,614				346,679	93,189,935	6.9	64.8	31	0	352	39,168	-	96,701,356	3,511,421	3.8%	3.8%		96,701,356
Aug-98	94,443,253				350,040	94,093,214	12.1	83.1	31	0	320	39,248	-	99,089,677	4,996,464	5.3%	5.3%		99,089,677
Sep-98	87,162,869				323,056	86,839,813	63	26	30	1	336	39,328	-	84,753,860	-2,085,952	-2.4%	2.4%		84,753,860
Oct-98	87,958,219				326,004	87,632,215	257.6	0	31	1	336	39,408	-	86,944,203	-688,012	-0.8%	0.8%		86,944,203
Nov-98	91,550,898				339,319	91,211,579	440.1	0	30	1	336	39,488	-	90,000,119	-1,211,460	-1.3%	1.3%		90,000,119
Dec-98	96,499,820				357,662	96,142,158	572.1	0	31	0	336	39,568	-	98,372,974	2,230,816	2.3%	2.3%		98,372,974
Jan-99	106,347,680				391,586	105,956,094	789.6	0	31	0	320	39,656	-	103,663,340	-2,292,755	-2.2%	2.2%		103,663,340
Feb-99	92,242,601				339,649	91,902,952	578.4	0	28	0	320	39,744	-	91,287,729	-615,223	-0.7%	0.7%		91,287,729
Mar-99	99,528,299				366,476	99,161,823	592.5	0	31	1	368	39,833	-	99,313,654	151,832	0.2%	0.2%		99,313,654
Apr-99	85,709,380				315,593	85,393,787	332.6	0	30	1	336	39,921	-	88,093,343	2,699,555	3.2%	3.2%		88,093,343
May-99	85,001,059				312,985	84,688,074	126.7	10.5	31	1	320	40,009	-	86,101,831	1,413,756	1.7%	1.7%		86,101,831
Jun-99	96,876,658				356,712	96,519,946	44.4	76.5	30	0	352	40,097	-	100,423,143	3,903,198	4.0%	4.0%		100,423,143
Jul-99	102,363,582				376,916	101,986,666	3.2	138.9	31	0	336	40,185	-	114,392,496	12,405,830	12.2%	12.2%		114,392,496
Aug-99	92,128,742				339,230	91,789,512	28.8	30.9	31	0	336	40,273	-	91,744,647	-44,865	0.0%	0.0%		91,744,647
Sep-99	90,659,575				333,820	90,325,755	88.9	27.7	30	1	336	40,362	-	88,456,676	-1,869,079	-2.1%	2.1%		88,456,676
Oct-99	91,210,638				335,849	90,874,789	319	0	31	1	320	40,450	-	90,286,853	-587,935	-0.6%	0.6%		90,286,853
Nov-99	95,821,859				352,828	95,469,031	405.1	0	30	1	352	40,538	-	92,642,234	-2,826,796	-3.0%	3.0%		92,642,234
Dec-99	102,947,032				379,064	102,567,968	623.7	0	31	0	336	40,626	-	102,484,032	-483,936	-0.1%	0.1%		102,484,032
Jan-00	108,597,914				359,435	108,238,479	773	0	31	0	320	40,716	-	105,875,098	-2,363,381	-2.2%	2.2%		105,875,098
Feb-00	99,596,964				329,644	99,267,320	643.8	0	29	0	336	40,805	-	99,020,657	-246,662	-0.2%	0.2%		99,020,657
Mar-00	99,214,146				328,377	98,885,769	446.9	0	31	1	368	40,895	-	97,933,260	-952,509	-1.0%	1.0%		97,933,260
Apr-00	89,981,305				297,819	89,683,486	358.3	0	30	1	304	40,984	-	89,515,535	-167,951	-0.2%	0.2%		89,515,535
May-00	91,415,321				302,565	91,112,756	152.4	18.7	31	1	352	41,074	-	93,252,678	2,139,923	2.3%	2.3%		93,252,678
Jun-00	95,569,835				316,315	95,253,519	41.1	35.4	30	0	352	41,163	-	94,047,505	-1,206,014	-1.3%	1.3%		94,047,505
Jul-00	95,254,773				315,273	94,939,500	18.6	44.8	31	0	320	41,253	-	95,967,816	1,028,316	1.1%	1.1%		95,967,816
Aug-00	97,935,080				324,144	97,610,937	29.7	46.3	31	0	352	41,342	-	98,785,879	1,174,942	1.2%	1.2%		98,785,879
Sep-00	93,176,991				308,396	92,868,596	134	23.8	30	1	320	41,432	-	90,553,147	-2,315,449	-2.5%	2.5%		90,553,147
Oct-00	94,348,313				312,272	94,036,040	251.6	0	31	1	336	41,521	-	92,111,825	-1,924,216	-2.0%	2.0%		92,111,825
Nov-00	100,873,405				333,869	100,539,536	470.9	0	30	1	352	41,611	-	97,186,483	-3,353,053	-3.3%	3.3%		97,186,483
Dec-00	111,445,741				368,861	111,076,880	826.5	0	31	0	304	41,700	-	108,898,884	-2,177,995	-2.0%	2.0%		108,898,884
Jan-01	112,581,869				441,337	112,140,533	715	0	31	0	352	41,817	-	108,993,172	-3,147,360	-2.8%	2.8%		108,993,172
Feb-01	99,788,048	104,864			390,772	99,292,412	620.2	0	28	0	320	41,934	-	97,982,899	-1,309,513	-1.3%	1.3%		97,982,899
Mar-01	106,623,824	36,280			417,838	106,169,706	618.7	0	31	1	352	42,051	-	104,646,268	-1,523,439	-1.4%	1.4%		104,646,268
Apr-01	91,412,386	30,916			358,228	91,023,242	324.6	0	30	1	320	42,168	-	92,532,907	1,509,665	1.7%	1.7%		92,532,907
May-01	91,851,848	77,020			359,770	91,415,058	140.3	7.7	31	1	352	42,285	-	93,572,065	2,157,007	2.4%	2.4%		93,572,065
Jun-01	100,764,701	366,214			393,576	100,004,911	47	62.4</											

Month	Purchased kWh UtilisSmart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
Jan-02	113,024,588	462,984			105,964	112,455,640	625.7	0	31	0	352	43,198	-	109,989,998	-2,465,642	-2.2%	2.2%		109,989,998
Feb-02	102,515,395	411,477			96,119	102,007,798	592	0	28	0	320	43,293	-	100,627,289	-1,380,509	-1.4%	1.4%		100,627,289
Mar-02	109,462,737	484,062			102,591	108,876,083	581.2	0	31	1	320	43,387	-	105,019,344	-3,856,739	-3.5%	3.5%		105,019,344
Apr-02	101,175,171	484,651			94,789	100,595,731	356.2	6.6	30	1	352	43,482	-	100,152,620	-443,111	-0.4%	0.4%		100,152,620
May-02	99,710,889	473,869			93,420	99,143,600	266.8	5.3	31	1	352	43,576	-	99,837,152	693,552	0.7%	0.7%		99,837,152
Jun-02	104,229,282	414,660			97,730	103,716,893	53.1	54.5	30	0	320	43,671	-	102,905,077	-811,815	-0.8%	0.8%		102,905,077
Jul-02	118,623,870	434,817			111,262	118,077,792	4.7	129	31	0	352	43,765	-	122,266,152	4,188,360	3.5%	3.5%		122,266,152
Aug-02	111,583,120	449,451			104,620	111,029,049	11	72.3	31	0	336	43,859	-	109,343,679	-1,685,370	-1.5%	1.5%		109,343,679
Sep-02	105,982,565	448,586			99,348	105,434,631	50.2	47	30	1	320	43,954	-	99,650,412	-5,784,219	-5.5%	5.5%		99,650,412
Oct-02	105,094,244	468,666			98,493	104,527,084	349.3	1	31	1	352	44,048	-	102,391,779	-2,135,305	-2.0%	2.0%		102,391,779
Nov-02	107,844,017	482,077			101,069	107,260,871	486.4	0	30	1	336	44,143	-	103,044,661	-4,216,210	-3.9%	3.9%		103,044,661
Dec-02	113,855,250	475,040			106,735	113,273,476	675.6	0	31	0	320	44,237	-	112,049,766	-1,223,710	-1.1%	1.1%		112,049,766
Jan-03	122,281,722	568,885			197,928	121,514,909	868.4	0	31	0	352	43,367	-	117,185,764	-4,329,145	-3.6%	3.6%		117,185,764
Feb-03	110,139,892	488,139			178,314	109,473,438	755.9	0	28	0	320	43,629	-	106,049,506	-3,423,933	-3.1%	3.1%		106,049,506
Mar-03	112,160,711	521,553			181,546	111,457,612	638.7	0	31	1	336	43,892	-	108,898,166	-2,559,446	-2.3%	2.3%		108,898,166
Apr-03	101,765,882	504,137			164,670	101,097,074	397.4	0.7	30	1	336	44,155	-	100,745,083	-351,991	-0.3%	0.3%		100,745,083
May-03	96,091,846	517,449			155,422	95,418,975	217	0	31	1	336	44,417	-	98,459,931	3,040,955	3.2%	3.2%		98,459,931
Jun-03	100,440,873	476,664			162,560	99,801,649	65.3	25.5	30	0	336	44,680	-	100,473,435	671,786	0.7%	0.7%		100,473,435
Jul-03	109,723,172	519,355			177,586	109,026,232	12.5	50.1	31	0	352	44,793	-	107,848,546	-1,177,686	-1.1%	1.1%		107,848,546
Aug-03	104,089,100	498,723			168,457	103,421,920	18.9	72.4	31	0	320	44,948	-	111,334,704	7,912,784	7.7%	7.7%		111,334,704
Sep-03	98,681,486	477,821			159,697	98,043,968	104.1	6	30	1	336	45,072	-	96,036,210	-2,007,758	-2.0%	2.0%		96,036,210
Oct-03	104,199,872	511,790			168,616	103,519,466	331.9	0	31	1	352	45,204	-	104,606,509	1,087,044	1.1%	1.1%		104,606,509
Nov-03	105,671,242	481,980			171,057	105,018,205	434.4	0	30	1	320	45,375	-	103,693,982	-1,324,223	-1.3%	1.3%		103,693,982
Dec-03	112,870,231	507,132			182,723	112,180,376	610	0	31	0	336	45,463	-	114,315,495	2,135,119	1.9%	1.9%		114,315,495
Jan-04	123,356,627	491,163			216,044	122,649,421	879.2	0	31	0	336	45,553	-	122,053,824	-595,597	-0.5%	0.5%		122,053,824
Feb-04	110,886,761	454,979			194,180	110,237,601	699.2	0	29	0	320	45,665	-	111,858,979	1,621,378	1.5%	1.5%		111,858,979
Mar-04	114,371,810	479,037			200,266	113,692,507	540.9	0	31	1	368	45,790	-	112,917,090	-775,417	-0.7%	0.7%		112,917,090
Apr-04	100,778,720	497,337			176,332	100,105,050	354.1	0	30	1	336	45,875	-	103,728,150	3,623,100	3.6%	3.6%		103,728,150
May-04	99,917,690	502,450			174,809	99,240,430	196.2	6.7	31	1	336	45,923	-	102,144,505	2,904,075	2.9%	2.9%		102,144,505
Jun-04	101,500,696	522,271			177,558	100,800,868	92.5	16.3	30	0	352	46,112	-	103,806,963	3,006,095	3.0%	3.0%		103,806,963
Jul-04	106,988,465	546,336			187,165	106,254,964	21.3	49.3	31	0	336	46,202	-	110,523,722	4,268,759	4.0%	4.0%		110,523,722
Aug-04	105,697,735	523,277			184,936	104,989,522	55	30.6	31	0	336	46,332	-	107,708,510	2,718,989	2.6%	2.6%		107,708,510
Sep-04	105,959,836	531,322			185,383	105,243,131	71.3	13.7	30	1	336	46,496	-	100,399,158	-4,843,973	-4.6%	4.6%		100,399,158
Oct-04	104,738,230	546,994			183,207	104,008,029	287.5	0	31	1	320	46,661	-	105,091,146	1,083,117	1.0%	1.0%		105,091,146
Nov-04	109,633,798	550,188			191,810	108,891,801	432.9	0	30	1	352	46,825	-	109,293,223	401,422	0.4%	0.4%		109,293,223
Dec-04	118,965,070	559,782			208,201	118,197,088	700.1	0	31	0	336	46,881	-	120,409,657	2,212,569	1.9%	1.9%		120,409,657
Jan-05	125,529,169	560,017			169,527	124,799,625	814.7	0	31	0	320	46,961	-	122,808,662	-1,990,963	-1.6%	1.6%		122,808,662
Feb-05	110,018,389	494,481	1,891		148,575	109,377,224	683.5	0	28	0	320	47,060	-	112,692,274	3,315,050	3.0%	3.0%		112,692,274
Mar-05	117,480,987	561,215	993		158,607	116,762,158	680.5	0	31	1	352	47,156	-	119,260,769	2,498,611	2.1%	2.1%		119,260,769
Apr-05	102,655,932	533,776	611		138,534	101,984,233	354.6	0	30	1	336	47,057	-	106,726,710	4,742,477	4.7%	4.7%		106,726,710
May-05	101,003,739	540,499	1,260		136,283	100,328,217	244.9	0	31	1	336	47,180	-	106,214,168	5,885,950	5.9%	5.9%		106,214,168
Jun-05	120,806,868	529,091	1,538		163,163	120,116,153	27.3	104.8	30	0	352	47,430	-	124,642,336	4,526,183	3.8%	3.8%		124,642,336
Jul-05	121,659,153	513,321	846		164,340	120,982,338	6.8	105.4	31	0	320	47,565	-	124,811,619	3,829,282	3.2%	3.2%		124,811,619
Aug-05	118,714,206	531,068	976		160,321	118,023,792	11.9	67.9	31	0	352	47,605	-	118,820,615	796,823	0.7%	0.7%		118,820,615
Sep-05	107,398,525	513,110	1,756		144,995	106,742,175	63.4	13.7	30	1	336	47,806	-	103,485,736	-3,256,439	-3.1%	3.1%		103,485,736
Oct-05	108,114,071	569,069	2,427		145,890	107,401,539	259.9	2.6	31	1	320	47,911	-	108,046,086	644,547	0.6%	0.6%		108,046,086
Nov-05	112,273,619	544,498	536		151,566	111,578,091	433.1	0	30	1	352	48,010	-	112,290,988	712,896	0.6%	0.6%		112,290,988
Dec-05	121,150,930	531,516	5,480		163,626	120,461,267	721.6	0	31	0	320	48,041	-	122,938,382	2,477,114	2.1%	2.1%		122,938,382
Jan-06	120,719,775	495,201	3,630		196,929	120,031,274	590.6	0	31	0	336	48,141	23,545	120,491,716	460,442	0.4%	0.4%		120,491,716
Feb-06	111,241,852	462,157	4,968		181,458	110,603,205	651.2	0	28	0	320	48,205	47,090	114,593,066	3,989,862	3.6%	3.6%		114,593,066
Mar-06	118,804,708	502,980	3,065		193,780	118,111,013	562.4	0	31	1	368	48,263	70,635	119,627,444	1,516,430	1.3%	1.3%		119,627,444
Apr-06	101,928,394	459,428	2,611		166,207	101,305,369	322.5	0	30	1	304	48,272	94,179	106,740,797	5,435,427	5.4%	5.4%		106,740,797
May-06	109,352,162		2,275		179,120	109,175,317	177.8	17.7	31	1	352	48,222	117,724	111,570,060	2,394,743	2.2%	2.2%		111,570,060
Jun-06	114,158,685		1,302		186,993	113,972,994	44.1	32.2	30	0	352	48,352	141,269	111,317,163	-2,655,831	-2.3%	2.3%		111,317,163
Jul-06	126,395,645		1,987		207,038	126,190,594	6.5	117.2	31	0	320	48,357	164,814	129,067,475	2,876,881	2.3%	2.3%		129,067,475
Aug-06	119,390,829		1,149		195,564	119,196,414	27.5	45.5	31	0	352	48,485	188,359	116,229,143	-2,967,272	-2.5%	2.5%		116,229,143
Sep-06	106,375,052		2,095		174,244	106,202,903	130.3	2.3	30	1	320	48,589	211,904	103,426,144	-2,776,759	-2.6%	2.6%		103,426,144
Oct-06	113,289,697		4,051		185,570	113,108,178	335.1	0	31	1	336	48,653	235,448	112,003,628	-1,104,550	-1.0%	1.0%		112,003,628
Nov-06	115,282,364		2,083		188,834	115,095,613	415.9	0	30	1	352	48,727	258,993	113,130,591	-1,965,022	-1.7%	1.7%		113,130,591
Dec-06	119,730,905		5,460		196,121	119,540,244	545.2	0	31	0	304	48,779	282,538	118,390,273	-1,149,972	-1.0%	1.0%		118,390,273
Jan-07	127,521,206		3,907		220,176	127,304,937	698.3	0	31	0	352	48,826	303,088	125,650,749	-1,654,188	-1.3%	1.3%		

Month	Purchased kWh UtilisSmart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
Jan-08	129,540,752		22,682		180,694	129,382,740	676.8	0	31	0	352	49,631	541,495	126,636,998	-2,745,742	-2.1%	2.1%		126,636,998
Feb-08	121,546,289		12,657		169,543	121,389,403	651.2	0	29	0	320	49,649	553,860	119,520,704	-1,868,699	-1.5%	1.5%		119,520,704
Mar-08	123,025,577		11,617		171,606	122,865,588	686.1	0	31	1	304	49,699	566,224	121,837,132	-1,028,456	-0.8%	0.8%		121,837,132
Apr-08	110,354,711		8,264		153,932	110,209,043	297.9	0	30	1	352	49,603	578,589	111,439,746	1,230,703	1.1%	1.1%		111,439,746
May-08	107,757,169		8,874		150,309	107,615,734	243.1	0.7	31	1	336	49,718	590,953	111,587,450	3,971,715	3.7%	3.7%		111,587,450
Jun-08	115,141,214		6,366		160,608	114,986,972	40.6	53	30	0	336	49,781	603,318	117,511,534	2,524,563	2.2%	2.2%		117,511,534
Jul-08	125,482,805		4,505		175,034	125,312,276	7.6	75.8	31	0	352	49,843	615,683	124,915,041	-397,235	-0.3%	0.3%		124,915,041
Aug-08	116,642,720		3,345		162,703	116,483,362	36.2	29.5	31	0	320	49,932	628,047	113,848,062	-2,635,300	-2.3%	2.3%		113,848,062
Sep-08	113,785,450		3,183		158,717	113,629,916	93.2	12	30	1	336	50,197	640,412	108,754,488	-4,875,428	-4.3%	4.3%		108,754,488
Oct-08	114,890,260		8,696		160,258	114,738,698	325.7	0	31	1	352	50,286	652,776	116,033,674	1,294,976	1.1%	1.1%		116,033,674
Nov-08	117,556,400		7,348		163,977	117,399,771	499.7	0	30	1	304	50,341	665,141	115,836,045	-1,563,726	-1.3%	1.3%		115,836,045
Dec-08	127,583,980		10,165		177,965	127,416,180	694	0	31	0	336	50,478	677,505	128,020,054	603,874	0.5%	0.5%		128,020,054
Jan-09	133,644,440		5,405		201,794	133,448,051	891.8	0	31	0	336	50,522	712,239	133,583,599	135,547	0.1%	0.1%		133,583,599
Feb-09	116,396,740		7,542		175,751	116,228,531	649.6	0	28	0	304	50,567	746,972	118,215,902	1,987,371	1.7%	1.7%		118,215,902
Mar-09	122,514,006		7,052		184,988	122,336,070	562.6	0	31	1	352	50,570	781,706	123,115,476	779,406	0.6%	0.6%		123,115,476
Apr-09	109,450,364		9,944		165,262	109,295,046	341.5	3.2	30	1	320	50,379	816,439	112,908,111	3,613,065	3.3%	3.3%		112,908,111
May-09	106,688,597		7,866		161,092	106,535,371	192.8	2.3	31	1	320	50,556	851,173	111,178,566	4,643,195	4.4%	4.4%		111,178,566
Jun-09	112,029,484		3,162		169,157	111,863,489	75.7	26.2	30	0	352	50,618	885,906	115,193,664	3,330,175	3.0%	3.0%		115,193,664
Jul-09	113,742,745		3,355		171,744	113,574,356	37.6	14.5	31	0	352	50,688	920,640	113,921,028	346,672	0.3%	0.3%		113,921,028
Aug-09	121,976,829		3,504		184,177	121,796,156	18.2	57.3	31	0	320	50,788	955,373	120,957,651	-938,505	-0.7%	0.7%		120,957,651
Sep-09	113,325,953		2,212		171,114	113,158,051	88.8	5.5	30	1	336	50,947	990,107	108,443,115	-4,714,336	-4.2%	4.2%		108,443,115
Oct-09	117,459,966		4,686		177,356	117,287,285	329.1	0	31	1	336	51,006	1,024,840	116,263,534	-1,023,761	-0.9%	0.9%		116,263,534
Nov-09	117,285,789		2,430		177,093	117,111,126	396.5	0	30	1	320	51,052	1,059,574	114,982,133	-2,128,993	-1.8%	1.8%		114,982,133
Dec-09	129,320,400		7,003		195,265	129,131,138	669.5	0	31	0	352	51,089	1,094,307	129,066,829	-64,310	0.0%	0.0%		129,066,829
Jan-10	133,979,177		6,401		251,570	133,735,007	721.1	0	31	0	320	51,151	1,103,679	128,699,846	-5,045,162	-3.8%	3.8%		128,699,846
Feb-10	119,946,771		5,836		225,222	119,727,385	644.7	0	28	0	304	51,173	1,113,050	118,915,361	-812,024	-0.7%	0.7%		118,915,361
Mar-10	123,452,454		5,029		231,804	123,225,678	470.9	0	31	1	368	51,218	1,122,421	122,525,156	-700,522	-0.6%	0.6%		122,525,156
Apr-10	109,614,094		7,763		205,820	109,416,037	260.6	0	30	1	320	51,206	1,131,793	111,442,692	2,026,655	1.9%	1.9%		111,442,692
May-10	117,656,799		7,341		220,922	117,443,218	144.7	21	31	1	320	51,250	1,141,164	115,122,910	-2,320,308	-2.0%	2.0%		115,122,910
Jun-10	120,954,770		5,298		227,114	120,732,954	37.7	32.6	30	0	352	51,383	1,150,536	116,961,110	-3,771,844	-3.1%	3.1%		116,961,110
Jul-10	135,775,256		2,288		254,943	135,522,601	6.7	106.6	31	0	368	51,449	1,159,907	133,661,746	-1,860,855	-1.4%	1.4%		133,661,746
Aug-10	132,798,939		31,996		249,354	132,581,581	14.2	85.3	31	0	336	51,540	1,169,278	129,431,575	-3,150,006	-2.4%	2.4%		129,431,575
Sep-10	116,946,781		21,552		219,589	116,748,744	122.7	23	30	1	336	51,730	1,178,650	114,830,128	-1,918,616	-1.6%	1.6%		114,830,128
Oct-10	116,794,004		33,695		219,302	116,608,398	284.6	0	31	1	352	51,802	1,188,021	115,744,974	-863,423	-0.7%	0.7%		115,744,974
Nov-10	121,142,765		26,467		227,467	120,941,764	424.1	0	30	1	336	51,876	1,197,393	118,549,150	-2,392,615	-2.0%	2.0%		118,549,150
Dec-10	132,686,798		8,843		249,143	132,446,497	719.4	0	31	0	368	51,942	1,206,764	133,377,287	930,790	0.7%	0.7%		133,377,287
Jan-11	136,994,789		17,067		262,828	136,949,028	822	0	31	0	336	51,912	1,230,960	134,162,710	-2,786,318	-2.0%	2.0%		134,162,710
Feb-11	122,135,594		32,587		56,014	122,112,167	689.3	0	28	0	304	51,951	1,255,156	121,854,708	-257,459	-0.2%	0.2%		121,854,708
Mar-11	130,238,805		68,579		59,730	130,247,654	622.3	0	31	1	368	52,013	1,279,352	128,458,866	-1,788,789	-1.4%	1.4%		128,458,866
Apr-11	114,649,106		88,855		52,580	114,685,381	349.6	0	30	1	320	51,974	1,303,549	115,539,264	853,883	0.7%	0.7%		115,539,264
May-11	115,314,928		92,813		52,886	115,354,856	156.7	13.2	31	1	336	51,904	1,327,745	116,029,673	674,817	0.6%	0.6%		116,029,673
Jun-11	119,042,433		166,962		54,595	119,154,800	48.5	21.6	30	0	352	52,117	1,351,941	116,331,828	-2,822,972	-2.4%	2.4%		116,331,828
Jul-11	138,200,903		177,168		63,381	138,314,689	0.8	129.7	31	0	320	52,228	1,376,137	139,121,063	806,374	0.6%	0.6%		139,121,063
Aug-11	129,680,676		212,743		59,474	129,833,945	6.9	60.1	31	0	352	52,272	1,400,333	126,112,787	-3,721,159	-2.9%	2.9%		126,112,787
Sep-11	118,359,468		149,718		54,282	118,454,904	98.4	19.7	30	1	336	52,370	1,424,529	114,581,444	-3,873,460	-3.3%	3.3%		114,581,444
Oct-11	117,222,379		125,527		53,760	117,294,146	279.9	0	31	1	352	52,540	1,448,725	116,983,090	-311,056	-0.3%	0.3%		116,983,090
Nov-11	119,814,510		107,276		54,949	119,866,836	382.4	0	30	1	352	52,585	1,472,922	119,631,357	-235,479	-0.2%	0.2%		119,631,357
Dec-11	126,569,739		61,882		58,047	126,573,574	574.8	0	31	0	336	52,626	1,497,118	128,564,539	1,990,964	1.6%	1.6%		128,564,539
Jan-12	133,054,012		90,401		78,254	133,066,159	657.3	0	31	0	336	52,669	1,545,001	130,883,950	-2,182,209	-1.6%	1.6%		130,883,950
Feb-12	120,941,249		141,343		71,133	121,011,459	573	0	29	0	320	52,705	1,592,885	123,085,799	2,074,340	1.7%	1.7%		123,085,799
Mar-12	123,000,174		223,986		72,348	123,151,812	370.1	0	31	1	352	52,764	1,640,768	121,656,375	-1,495,436	-1.2%	1.2%		121,656,375
Apr-12	112,691,603		259,168		66,288	112,884,483	365.3	0	30	1	320	52,792	1,688,651	117,312,671	4,428,188	3.9%	3.9%		117,312,671
May-12	119,335,240		411,774		70,251	119,676,763	105.8	18.2	31	1	352	52,765	1,736,535	118,078,267	-1,598,496	-1.3%	1.3%		118,078,267
Jun-12	125,981,960		351,651	156,552	74,123	126,416,400	42.1	61.2	30	0	336	52,838	1,784,418	124,823,989	-1,592,051	-1.3%	1.3%		124,823,989
Jul-12	142,079,563		366,752	830,328	83,591	143,193,052	0	128.2	31	0	336	52,881	1,832,302	140,532,891	-2,660,161	-1.9%	1.9%		140,532,891
Aug-12	130,563,176		347,063	746,851	76,825	131,580,265	19.4	59.1	31	0	352	52,971	1,880,185	127,098,434	-4,481,831	-3.4%	3.4%		127,098,434
Sep-12	117,194,518		351,467	704,059	68,995	118,181,049	125.4	16.4	30	1	304	53,174	1,928,068	113,734,250	-4,446,799	-3.8%	3.8%		113,734,250
Oct-12	119,510,341		182,984	627,856	70,320	120,250,862	279.2	0	31	1	352	53,346	1,975,952	119,954,545	-296,317	-0.2%	0.2%		119,954,545
Nov-12	122,632,477		157,709	630,415	72,148	123,348,454	483.6	0	31	1	352	53,452	2,023,835	123,599,451	250,997	0.2%	0.2%		123,599,451
Dec-12	125,695,219		89,827	617,717	73,943	126,													

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
Jan-14	141,106,088		163,375	524,192	143,311	141,650,345	865.9	0	31	0	352	54,216	2,667,285	139,459,804	-2,190,541	-1.5%	1.5%		139,459,804
Feb-14	125,257,309		151,109	578,734	127,225	125,859,926	831.2	0	28	0	304	54,225	2,721,419	128,775,668	2,915,743	2.3%	2.3%		128,775,668
Mar-14	133,125,383		492,909	565,100	135,575	134,047,817	757	0	31	1	336	54,242	2,775,553	133,053,250	-994,567	-0.7%	0.7%		133,053,250
Apr-14	114,620,651		543,976	631,838	116,908	115,679,557	389.9	0	30	1	320	54,213	2,829,687	119,423,862	3,744,304	3.2%	3.2%		119,423,862
May-14	114,044,889		695,153	664,536	116,526	115,288,052	168.9	9	31	1	336	54,183	2,883,821	118,257,391	2,969,339	2.6%	2.6%		118,257,391
Jun-14	121,444,961		756,506	676,098	123,901	122,753,664	37.3	44.3	30	0	336	54,246	2,937,955	122,367,878	-385,786	-0.3%	0.3%		122,367,878
Jul-14	123,954,209		735,821	679,187	126,406	125,242,812	36.8	38.8	31	0	352	54,253	2,992,090	124,279,957	-962,855	-0.8%	0.8%		124,279,957
Aug-14	120,437,156		1,761,479	629,395	124,816	122,703,214	31.1	28.5	31	0	320	54,296	3,046,224	119,922,282	-2,780,932	-2.3%	2.3%		119,922,282
Sep-14	116,189,300		1,477,828	607,775	119,627	118,155,276	117.7	11.4	30	1	336	54,497	3,100,358	115,501,059	-2,654,217	-2.2%	2.2%		115,501,059
Oct-14	115,219,055		1,428,424	558,747	118,525	117,087,701	257.1	0	31	1	352	54,599	3,154,492	120,267,573	3,179,873	2.7%	2.7%		120,267,573
Nov-14	121,370,699		1,164,888	580,527	124,434	122,991,680	529.9	0	30	1	304	54,669	3,208,626	122,784,988	-206,693	-0.2%	0.2%		122,784,988
Dec-14	126,395,819		1,624,797	591,688	130,103	128,482,201	597.6	0	31	0	336	54,692	3,262,760	131,070,024	2,587,823	2.0%	2.0%		131,070,024
Jan-15	136,069,001		1,640,686	524,680	124,023	138,110,344	800.8	0	31	0	336	54,798	3,341,794	136,856,788	-1,253,556	-0.9%	0.9%		136,856,788
Feb-15	126,839,323		1,299,790	593,761	115,380	128,617,494	917.5	0	28	0	304	54,813	3,420,827	131,342,068	2,724,574	2.1%	2.1%		131,342,068
Mar-15	127,155,193		2,415,035	589,701	116,725	130,043,204	538	0	31	1	352	54,851	3,499,860	128,085,771	-1,957,434	-1.5%	1.5%		128,085,771
Apr-15	110,931,008		2,428,305	666,705	102,184	113,923,834	359	0	30	1	336	54,842	3,578,894	119,707,356	5,783,522	5.1%	5.1%		119,707,356
May-15	114,125,838		2,618,860	627,433	105,289	117,266,841	116.2	29.8	31	1	336	54,836	3,657,927	120,533,008	3,266,167	2.8%	2.8%		120,533,008
Jun-15	116,243,975		2,221,967	655,440	106,798	119,014,584	54.7	15	30	0	352	54,885	3,736,960	117,531,270	-1,483,314	-1.2%	1.2%		117,531,270
Jul-15	128,559,158		2,704,739	641,714	118,299	131,787,311	19.3	57.7	31	0	352	54,995	3,815,994	128,230,662	-3,556,649	-2.7%	2.7%		128,230,662
Aug-15	122,276,966		2,398,601	614,038	112,379	125,177,226	29.5	47.9	31	0	320	54,992	3,895,027	124,262,403	-914,823	-0.7%	0.7%		124,262,403
Sep-15	122,189,743		2,377,177	573,065	112,257	125,027,728	58.2	45.3	30	1	336	55,342	3,974,060	121,721,354	-3,306,374	-2.6%	2.6%		121,721,354
Oct-15	113,821,112		2,471,686	544,987	104,800	116,732,985	290.1	0	31	1	336	55,399	4,053,094	120,527,005	3,794,020	3.3%	3.3%		120,527,005
Nov-15	114,918,428		2,273,329	556,116	105,581	117,642,292	391.1	0	30	1	320	55,471	4,132,127	120,164,654	2,522,362	2.1%	2.1%		120,164,654
Dec-15	120,146,924		1,984,796	545,683	110,021	122,567,382	453	0	31	0	352	55,481	4,211,160	128,207,849	5,640,468	4.6%	4.6%		128,207,849
Jan-16	129,653,336		1,935,235	508,638	147,119	131,950,090	717.8	0	30	0	320	55,520	4,311,367	133,548,509	1,598,419	1.2%	1.2%		133,548,509
Feb-16	119,612,277		2,180,336	547,914	136,171	122,204,356	627.4	0	29	0	320	55,545	4,411,573	126,430,869	4,226,513	3.5%	3.5%		126,430,869
Mar-16	120,079,404		2,728,253	531,797	137,345	123,202,109	492.6	0	31	1	352	55,580	4,511,779	126,741,526	3,539,417	2.9%	2.9%		126,741,526
Apr-16	111,544,560		2,986,523	466,188	128,113	114,869,158	431.8	0	30	1	336	55,679	4,611,985	121,893,260	7,024,102	6.1%	6.1%		121,893,260
May-16	112,996,489		3,280,151	611,452	129,983	116,758,109	174.6	18.4	31	0	336	55,676	4,712,192	120,772,780	4,014,670	3.4%	3.4%		120,772,780
Jun-16	118,112,991		3,308,476	670,708	135,873	121,956,302	51.2	34.3	30	0	352	55,710	4,812,398	121,692,618	-263,684	-0.2%	0.2%		121,692,618
Jul-16	132,759,092		3,078,626	628,637	151,990	136,314,365	4.8	101.2	31	0	320	55,811	4,912,604	135,351,653	-962,711	-0.7%	0.7%		135,351,653
Aug-16	136,846,966		3,163,200	603,676	156,589	140,457,253	2.1	105	31	0	352	55,592	5,012,810	137,318,523	-3,138,730	-2.2%	2.2%		137,318,523
Sep-16	120,474,539		2,927,609	584,672	138,070	123,848,750	68.6	26.6	30	1	336	55,903	5,113,017	117,185,145	-6,663,605	-5.4%	5.4%		117,185,145
Oct-16	114,277,151		2,742,054	543,215	130,942	117,431,479	242.1	1.9	31	1	320	56,053	5,213,223	118,077,118	645,639	0.5%	0.5%		118,077,118
Nov-16	114,905,950		2,513,270	538,539	131,341	117,826,419	388.2	0	30	1	336	56,155	5,313,429	120,549,001	2,722,583	2.3%	2.3%		120,549,001
Dec-16	125,678,936		2,009,571	536,054	142,769	128,081,792	647.8	0	31	0	336	56,244	5,413,635	132,311,713	4,229,921	3.3%	3.3%		132,311,713
Jan-17	128,734,997		2,046,970	462,300	195,310	131,048,958	635.1	0	30	0	336	56,330	5,557,618	131,901,593	852,635	0.7%	0.7%		131,901,593
Feb-17	112,440,233		2,032,461	508,232	170,943	114,809,982	537.9	0	28	0	304	56,380	5,701,601	120,384,663	5,574,682	4.9%	4.9%		120,384,663
Mar-17	123,679,832		2,753,230	513,594	188,801	126,757,855	597.6	0	31	1	368	56,429	5,845,583	130,263,621	3,505,766	2.8%	2.8%		130,263,621
Apr-17	105,359,960		3,042,376	543,909	161,992	108,784,253	281.6	0	30	1	304	56,520	5,989,566	115,259,521	6,475,268	6.0%	6.0%		115,259,521
May-17	109,395,984		3,050,515	572,876	168,052	112,851,324	214.4	2.7	31	1	352	56,568	6,133,548	118,999,983	6,138,659	5.4%	5.4%		118,999,983
Jun-17	116,088,139		3,340,849	614,956	178,480	119,865,463	45.2	43	30	0	352	56,601	6,277,531	122,897,286	3,031,823	2.5%	2.5%		122,897,286
Jul-17	124,635,650		3,427,769	585,427	191,385	128,457,461	3.2	58.5	31	0	320	56,737	6,421,514	125,459,902	-2,997,559	-2.3%	2.3%		125,459,902
Aug-17	120,712,024		3,323,668	576,573	185,350	124,426,914	34.5	28.6	31	0	352	56,788	6,565,496	121,614,795	-2,812,119	-2.3%	2.3%		121,614,795
Sep-17	117,905,219		2,933,822	558,640	180,583	121,217,097	81.1	36.3	30	1	320	56,822	6,709,479	117,968,372	-3,248,726	-2.7%	2.7%		117,968,372
Oct-17	113,217,919		2,616,870	507,996	173,113	116,169,673	208.9	3.2	31	1	336	56,855	6,853,461	117,327,928	1,158,255	1.0%	1.0%		117,327,928
Nov-17	118,361,036		2,024,980	505,924	179,806	120,712,135	480	0	30	1	352	56,903	6,997,444	122,783,869	2,071,734	1.7%	1.7%		122,783,869
Dec-17	127,458,754		1,531,242	506,768	192,600	129,304,165	755.7	0	31	0	304	57,055	7,141,427	132,138,845	2,834,680	2.2%	2.2%		132,138,845
Jan-18	135,059,211		1,849,473	497,800	-	137,406,483	791.1	0	31	0	352	57,069	7,229,731	135,927,372	-1,479,112	-1.1%	1.1%		135,927,372
Feb-18	115,541,198		2,220,305	722,686	-	118,484,189	594.9	0	28	0	304	57,081	7,318,036	120,680,449	2,196,260	1.9%	1.9%		120,680,449
Mar-18	123,856,864		2,153,545	689,190	-	126,699,599	591.1	0	31	1	336	57,107	7,406,340	126,880,017	180,418	0.1%	0.1%		126,880,017
Apr-18	115,296,340		2,168,050	778,766	-	118,243,156	474.8	0	30	1	336	57,120	7,494,645	121,266,465	3,023,309	2.6%	2.6%		121,266,465
May-18	116,495,073		2,234,440	786,335	-	120,515,848	95.2	32.5	31	1	352	57,140	7,582,950	120,868,639	352,791	0.3%	0.3%		120,868,639
Jun-18	120,027,635		3,505,931	829,844	-	124,363,410	41	41.5	30	0	336	57,291	7,671,254	120,574,914	-3,788,496	-3.0%	3.0%		120,574,914
Jul-18	137,353,067		3,173,242	873,989	-	141,400,298	3.6	89.3	31	0	336	57,318	7,759,559	132,105,075	-9,295,223	-6.6%	6.6%		132,105,075
Aug-18	134,389,410		3,192,687	794,971	-	138,377,067	6.6	93.9	31	0	352	57,346	7,847,864	134,074,255	-4,302,812	-3.1%	3.1%		134,074,255
Sep-18	121,313,741		2,979,765	779,327	-	125,072,833	77.2	48.8	30	1	304	57,391	7,936,168						

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
Jan-20							755.7	0.0	31	0	336	57,857	8,655,739	133,248,664			2.1%	-11,817,088	121,431,576
Feb-20							677.4	0.0	29	0	304	57,844	8,724,668	124,475,219				-11,817,088	112,658,132
Mar-20							581.3	0.0	31	1	352	57,831	8,793,598	126,781,298				-11,817,088	114,964,210
Apr-20							368.4	0.0	30	1	352	57,818	8,862,527	118,445,242				-11,817,088	106,628,154
May-20							153.6	16.4	31	1	320	57,805	8,931,456	116,158,355				-11,817,088	104,341,267
Jun-20							46.4	34.1	30	0	352	57,792	9,000,385	118,832,211				-11,817,088	107,015,123
Jul-20							9.3	89.8	31	0	352	57,779	9,069,314	132,039,266				-11,817,088	120,222,179
Aug-20							19.4	59.9	31	0	336	57,766	9,138,243	124,638,428				-11,817,088	112,821,340
Sep-20							96.7	26.2	30	1	336	57,753	9,207,172	114,786,906				-11,817,088	102,969,818
Oct-20							272.0	1.4	31	1	336	57,740	9,276,101	116,333,470				-11,817,088	104,516,382
Nov-20							469.3	0.0	30	1	304	57,727	9,345,030	117,181,002				-11,817,088	105,363,914
Dec-20							627.9	0.0	31	0	352	57,718	9,413,959	128,872,762				-11,817,088	117,055,674
Jan-21							755.7	0.0	31	0	304	57,718	9,409,048	129,514,215				-12,048,618	117,465,597
Feb-21							677.4	0.0	28	0	304	57,718	9,404,137	120,634,517				-12,048,618	108,585,899
Mar-21							581.3	0.0	31	1	368	57,718	9,399,226	126,325,462				-12,048,618	114,276,844
Apr-21							368.4	0.0	30	1	352	57,718	9,394,315	117,184,558				-12,048,618	105,135,940
May-21							153.6	16.4	31	1	320	57,718	9,389,404	115,070,485				-12,048,618	103,021,867
Jun-21							46.4	34.1	30	0	352	57,718	9,384,493	117,917,155				-12,048,618	105,868,537
Jul-21							9.3	89.8	31	0	336	57,718	9,379,582	130,319,362				-12,048,618	118,270,744
Aug-21							19.4	59.9	31	0	352	57,718	9,374,671	125,046,661				-12,048,618	112,998,043
Sep-21							96.7	26.2	30	1	336	57,718	9,369,760	114,390,291				-12,048,618	102,341,673
Oct-21							272.0	1.4	31	1	320	57,718	9,364,849	115,132,007				-12,048,618	103,083,389
Nov-21							469.3	0.0	30	1	320	57,718	9,359,938	118,107,677				-12,048,618	106,059,058
Dec-21							627.9	0.0	31	0	352	57,718	9,355,027	128,984,488				-12,048,618	116,935,870
								Weather Normal						33,275,626,250					
1996						1,054,584,153								1,050,224,600	(4,359,553)	-0.4%	0.4%	0	1,050,224,600
1997						1,067,428,819								1,064,457,543	(2,971,276)	-0.3%	0.3%	0	1,064,457,543
1998						1,089,938,594								1,099,894,820	9,956,226	0.9%	0.9%	0	1,099,894,820
1999						1,136,636,397								1,148,889,979	12,253,582	1.1%	1.1%	0	1,148,889,979
2000						1,173,512,817								1,163,148,767	(10,364,050)	-0.9%	0.9%	0	1,163,148,767
2001						1,205,847,416								1,208,215,977	2,368,560	0.2%	0.2%	0	1,208,215,977
2002						1,286,398,647								1,267,277,928	(19,120,719)	-1.5%	1.5%	0	1,267,277,928
2003						1,269,973,824								1,269,647,330	(326,494)	0.0%	0.0%	0	1,269,647,330
2004						1,294,310,410								1,309,934,927	15,624,517	1.2%	1.2%	0	1,309,934,927
2005						1,358,556,813								1,382,738,344	24,181,531	1.8%	1.8%	0	1,382,738,344
2006						1,372,533,120								1,376,587,499	4,054,378	0.3%	0.3%	0	1,376,587,499
2007						1,423,569,039								1,403,612,103	(19,956,936)	-1.4%	1.4%	0	1,403,612,103
2008						1,421,429,683								1,415,940,928	(5,488,755)	-0.4%	0.4%	0	1,415,940,928
2009						1,411,764,680								1,417,829,607	6,064,927	0.4%	0.4%	0	1,417,829,607
2010						1,479,129,865								1,459,251,936	(19,877,929)	-1.3%	1.3%	0	1,459,251,936
2011						1,488,841,981								1,477,371,327	(11,470,653)	-0.8%	0.8%	0	1,477,371,327
2012						1,499,089,218								1,487,980,479	(11,108,739)	-0.7%	0.7%	0	1,487,980,479
2013						1,499,180,241								1,499,189,177	8,936	0.0%	0.0%	0	1,499,189,177
2014						1,489,942,245								1,495,163,736	5,221,491	0.4%	0.4%	0	1,495,163,736
2015						1,485,911,225								1,497,170,188	11,258,963	0.8%	0.8%	0	1,497,170,188
2016						1,494,900,181								1,511,872,715	16,972,534	1.1%	1.1%	0	1,511,872,715
2017						1,454,405,279								1,476,990,377	22,585,098	1.6%	1.6%	0	1,476,990,377
2018						1,518,504,309								1,501,723,627	(16,780,682)	-1.1%	1.1%	0	1,501,723,627
2019						1,483,499,736								1,474,774,779	(8,724,957)	-0.6%	0.6%	0	1,474,774,779
2020														1,471,792,823				-141,805,053	1,329,987,769
2021														1,458,626,877				-144,583,417	1,314,043,460
Total to 2019						32,459,888,693								32,459,888,693	0				
														33,275,626,250	0				

Month	Purchased kWh - Utilisart (TSL w/o generation)	Less Wallenstein Adjmt	Embedded Generation	MP	Less LTLT	Purchased kWh	Heating Degree Days	Cooling Degree Days	Number of Days in Month	Spring Fall Flag	Number of Peak Hours	# of Customers	Persistent CDM	Predicted Purchases	Variances (kWh)	% Variance	% Variance (Abs)	Pandemic	Purchases - Pandemic Inclusive
						10 Year Average													
						755.7	0.0	31	0	333									
						677.4	0.0	28	0	323									
						581.3	0.0	31	1	346									
						368.4	0.0	30	1	326									
						153.6	16.4	31	1	341									
						46.4	34.1	30	0	331									
						9.3	89.8	31	0	342									
						19.4	59.9	31	0	338									
						96.7	26.2	30	1	331									
						272.0	1.4	31	1	341									
						469.3	0.0	30	1	334									
						627.9	0.0	31	0	331									
						20 Year Trend													
						762.2	0.0	31	0	333									
						678.8	0.0	28	0	323									
						603.6	0.0	31	1	346									
						382.0	-0.3	30	1	326									
						152.3	16.8	31	1	341									
						46.3	30.2	30	0	331									
						8.4	87.2	31	0	342									
						19.8	56.9	31	0	338									
						88.2	27.8	30	1	331									
						268.8	2.4	31	1	341									
						489.0	0.0	30	1	334									
						613.9	0.0	31	0	331									

	Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service < 50 kW	General Service ≥ 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Unmetered Loads	Embedded Distributors - #1
Weather Normal Projection														
1998	1,089,938,594	1,099,894,820	9,956,226	0.9%										
1999	1,136,636,397	1,148,889,979	12,253,582	1.1%										
2000	1,173,512,817	1,163,148,767	(10,364,050)	-0.9%										
2001	1,205,847,416	1,208,215,977	2,368,560	0.2%										
2002	1,286,398,647	1,267,277,928	(19,120,719)	-1.5%										
2003	1,269,973,824	1,269,647,330	(326,494)	0.0%	1.0436	1,216,900,996	381,172,838	178,733,409	581,134,405	65,433,586		7,223,381	3,203,377	
2004	1,294,310,410	1,309,934,927	15,624,517	1.2%	1.0357	1,249,737,840	385,085,949	181,654,718	606,602,563	66,067,057		7,105,157	3,222,396	
2005	1,358,556,813	1,382,738,344	24,181,531	1.8%	1.0414	1,304,584,908	408,053,981	187,375,742	627,713,059	70,553,960		7,702,553	3,185,614	
2006	1,372,533,120	1,376,587,499	4,054,378	0.3%	1.0350	1,326,077,776	391,947,395	189,284,333	660,327,538	73,668,918		7,713,288	3,136,305	
2007	1,423,569,039	1,403,612,103	(19,956,936)	-1.4%	1.0410	1,367,527,466	405,071,612	192,047,825	682,785,512	77,115,461		7,734,113	2,772,944	
2008	1,421,429,683	1,415,940,928	(5,488,755)	-0.4%	1.0371	1,370,617,488	405,533,476	185,031,934	693,615,296	76,733,608		7,925,793	1,777,380	
2009	1,411,764,680	1,417,829,607	6,064,927	0.4%	1.0378	1,360,402,644	397,106,489	179,794,279	697,125,703	76,507,951		7,921,734	1,946,487	
2010	1,479,129,865	1,459,251,936	(19,877,929)	-1.3%	1.0375	1,425,614,249	413,251,129	185,040,278	734,775,051	82,593,009		7,954,315	2,000,468	
2011	1,488,841,981	1,477,371,327	(11,470,653)	-0.8%	1.0359	1,437,226,191	408,768,579	187,070,265	725,123,828	84,249,637		7,939,684	2,043,853	22,030,344
2012	1,499,089,218	1,487,980,479	(11,108,739)	-0.7%	1.0332	1,450,973,841	409,922,519	190,189,482	716,491,037	86,740,767	3,552,539	9,744,477	2,250,008	32,083,013
2013	1,499,180,241	1,499,189,177	8,936	0.0%	1.0349	1,448,566,259	409,442,945	194,737,949	705,737,128	90,202,679	7,664,745	7,696,319	2,352,596	30,731,900
2014	1,489,942,245	1,495,163,736	5,221,491	0.4%	1.0295	1,447,248,320	410,104,642	197,096,102	699,842,688	91,205,251	7,004,823	7,720,857	2,544,974	31,728,985
2015	1,485,911,225	1,497,170,188	11,258,963	0.8%	1.0311	1,441,031,603	404,728,026	196,078,596	696,649,002	92,984,875	6,790,407	7,608,120	2,649,180	33,543,395
2016	1,494,900,181	1,511,872,715	16,972,534	1.1%	1.0349	1,444,462,268	404,436,333	193,116,426	701,389,229	95,179,112	6,445,968	7,638,394	2,729,041	33,527,765
2017	1,454,405,279	1,476,990,377	22,585,098	1.6%	1.0321	1,409,167,205	396,801,470	189,981,988	678,663,686	95,093,184	6,231,611	5,530,665	2,679,470	34,185,131
2018	1,518,504,309	1,501,723,627	(16,780,682)	-1.1%	1.0349	1,467,265,689	413,689,291	197,978,623	706,516,406	98,366,842	8,585,533	3,498,479	2,629,284	36,001,231
2019	1,483,499,736	1,474,774,779	(8,724,957)	-0.6%	1.0316	1,438,045,052	406,423,263	198,022,375	683,561,942	96,183,866	8,606,064	3,499,974	2,771,071	38,976,498
2020	0	1,329,987,769				1,284,119,193								
2021	0	1,314,043,460				1,268,724,771								
Average						1.0357								
Usage Per Customer														
2002							#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
2003							9,715	35,988	899,589	65,433,586				
2004							9,501	36,324	960,574	66,067,057		565		
2005							9,769	37,020	1,008,374	70,553,960		596		
2006							9,186	36,977	1,062,474	73,668,918		585		
2007							9,337	37,284	1,088,972	77,115,461		579		
2008							9,181	35,696	1,072,048	76,733,608		589	3,332	
2009							8,854	34,230	1,052,265	76,507,951		585	3,645	
2010							9,085	34,636	1,108,258	82,593,009		583	3,729	
2011							8,849	34,633	1,088,775	84,249,637		580	4,096	22,030,344
2012							8,745	34,875	1,074,199	86,740,767	1,776,270	709	4,772	32,083,013
2013							8,601	35,388	1,056,493	90,202,679	3,832,373	556	4,743	30,731,900
2014							8,510	35,535	1,027,669	91,205,251	3,502,412	557	4,904	31,728,985
2015							8,302	34,874	1,000,214	92,984,875	3,395,204	550	5,003	33,543,395
2016							8,182	33,883	980,964	95,179,112	3,222,984	551	5,096	33,527,765
2017							7,918	32,857	923,352	95,093,184	3,115,806	390	4,872	34,185,131
2018							8,165	33,915	941,394	98,366,842	3,434,213	241	4,847	36,001,231
2019							7,963	33,755	908,992	96,183,866	2,868,688	238	5,233	38,976,498
2020							7,864	30,244	773,234	79,290,978	3,072,009	223	5,453	41,857,714
2021							7,864	30,244	773,234	79,290,978	3,072,009	223	5,453	41,857,714

	Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service < 50 kW	General Service ≥ 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Unmetered Loads	Embedded Distributors - #1
2002														
2003														
2004							0.9780	1.0093	1.0678	1.0097				
2005							1.0282	1.0192	1.0498	1.0679				
2006							0.9403	0.9988	1.0537	1.0442		0.9830		
2007							1.0165	1.0083	1.0249	1.0468		0.9891		
2008							0.9832	0.9574	0.9845	0.9950		1.0171		
2009							0.9643	0.9589	0.9815	0.9971		0.9929	1.0941	
2010							1.0261	1.0118	1.0532	1.0795		0.9974	1.0229	
2011							0.9740	0.9999	0.9824	1.0201		0.9953	1.0985	
2012							0.9882	1.0070	0.9866	1.0296		1.2221	1.1651	1.4563
2013							0.9836	1.0147	0.9835	1.0399	2.1575	0.7838	0.9939	0.9579
2014							0.9894	1.0042	0.9727	1.0111	0.9139	1.0023	1.0338	1.0324
2015							0.9756	0.9814	0.9733	1.0195	0.9694	0.9874	1.0203	1.0572
2016							0.9855	0.9716	0.9808	1.0236	0.9493	1.0011	1.0186	0.9995
2017							0.9677	0.9697	0.9413	0.9991	0.9667	0.7082	0.9560	1.0196
2018							1.0313	1.0322	1.0195	1.0344	1.1022	0.6164	0.9948	1.0531
2019							0.9752	0.9953	0.9656	0.9778	0.8353	0.9903	1.0798	1.0826
Used							0.9876	0.8960	0.8507	0.8244	1.0709	0.9366	1.0419	1.0739
Geomean							0.9876	0.9960	1.0007	1.0244	1.0709	0.9366	1.0419	1.0739
COVID-19 impact adj							0.0000	-0.1000	-0.1500	-0.2000	0.0000	0.0000	0.0000	0.0000
Non Weather Corrected Forecast														
2020						1,288,902,183	403,088,751	174,720,484	574,499,449	79,290,978	9,216,027	3,312,567	2,916,211	41,857,714
2021						1,285,781,344	403,394,996	171,240,823	574,485,964	79,290,978	9,216,027	3,347,727	2,947,114	41,857,714
Weather Corrected Forecast														Total
2020						1,284,119,193	401,234,202	173,916,622	572,739,677	78,926,173	9,216,027	3,312,567	2,916,211	41,857,714
2021						1,268,724,771	396,756,157	168,422,641	568,191,337	77,986,054	9,216,027	3,347,727	2,947,114	41,857,714
% Weather Sensitive							75.0%	75.0%	49.9%	75.0%	0%	0%	0%	0%
2020						-4,782,989	302,115,019	130,953,003	286,675,225	59,428,588	0	0	0	779,171,835
2021						-17,056,573	302,344,550	128,344,997	286,668,496	59,428,588	0	0	0	776,786,630
Allocation of Weather Sensitive Amount														
2020							-1,854,550	-803,862	-1,759,772	-364,806	0	0	0	-4,782,989
2021							-6,638,840	-2,818,182	-6,294,627	-1,304,925	0	0	0	-17,056,573

	<u>Residential</u>	<u>General Service < 50 kW</u>	<u>General Service > 50 to 4999 kW</u>	<u>Large User</u>	<u>Direct Market Participant</u>	<u>Street Lights</u>	<u>Unmetered Loads</u>	<u>Embedded Distributors - #1</u>	<u>Total</u>
2002									
2003	39,236	4,967	646	1	0	12,292	459	0	57,599
2004	40,531	5,001	632	1	0	12,568	490	0	59,223
2005	41,769	5,062	623	1	0	12,935	491	0	60,879
2006	42,668	5,119	622	1	0	13,177	530	0	62,116
2007	43,382	5,151	627	1	0	13,358	554	0	63,072
2008	44,172	5,184	647	1	0	13,459	534	0	63,995
2009	44,853	5,253	663	1	0	13,548	534	0	64,851
2010	45,488	5,343	663	1	0	13,639	537	0	65,670
2011	46,194	5,402	666	1	0	13,678	499	1	66,440
2012	46,877	5,454	667	1	2	13,736	472	1	67,208
2013	47,602	5,503	668	1	2	13,841	496	1	68,114
2014	48,191	5,547	681	1	2	13,853	519	1	68,794
2015	48,750	5,623	697	1	2	13,824	530	1	69,427
2016	49,431	5,700	715	1	2	13,864	536	1	70,249
2017	50,115	5,782	735	1	2	14,175	550	1	71,361
2018	50,664	5,838	751	1	3	14,545	543	1	72,344
2019	51,041	5,867	752	1	3	14,694	530	1	72,887
2020	51,255	5,777	743	1	3	14,847	535	1	73,162
2021	51,294	5,662	743	1	3	15,005	540	1	73,249

Growth Rate in Customer Numbers

2002									
2003									
2004	1.0330	1.0069	0.9776	1.0000					
2005	1.0305	1.0121	0.9857	1.0000					
2006	1.0215	1.0114	0.9984	1.0000		1.0187			
2007	1.0167	1.0063	1.0088	1.0000		1.0137			
2008	1.0182	1.0063	1.0319	1.0000		1.0076			
2009	1.0154	1.0133	1.0240	1.0000		1.0067	1.0009		
2010	1.0142	1.0171	1.0008	1.0000		1.0067	1.0047		
2011	1.0155	1.0110	1.0045	1.0000		1.0029	0.9301		
2012	1.0148	1.0096	1.0015	1.0000		1.0042	0.9449	1.0000	
2013	1.0155	1.0091	1.0015	1.0000	1.0000	1.0076	1.0520	1.0000	
2014	1.0124	1.0079	1.0195	1.0000	1.0000	1.0009	1.0464	1.0000	
2015	1.0116	1.0137	1.0228	1.0000	1.0000	0.9979	1.0202	1.0000	
2016	1.0140	1.0137	1.0266	1.0000	1.0000	1.0029	1.0113	1.0000	
2017	1.0138	1.0145	1.0280	1.0000	1.0000	1.0224	1.0271	1.0000	
2018	1.0110	1.0096	1.0211	1.0000	1.2500	1.0261	0.9864	1.0000	
2019	1.0074	1.0050	1.0020	1.0000	1.2000	1.0102	0.9760	1.0000	

	<u>Residential</u>	<u>General Service</u> <u>< 50 kW</u>	<u>General Service > 50</u> <u>to 4999 kW</u>	<u>Large User</u>	<u>Direct Market</u> <u>Participant</u>	<u>Street Lights</u>	<u>Unmetered</u> <u>Loads</u>	<u>Embedded</u> <u>Distributors -</u> <u>#1</u>	Total
Used - 2020	1.0015	0.9609	1.0000	1.0000	1.0000	1.0106	1.0106	1.0000	
Used - 2021	1.0000	1.0000	1.0000	1.0000	1.0000	1.0106	1.0106	1.0000	
Geomean	1.0166	1.0105	1.0095	1.0000	1.0596	1.0091	0.9993	1.0000	
Geomean 5-yr	1.0116	1.0113	1.0200	1.0000	1.0845	1.0119	1.0040	1.0000	
Geomean 3-yr	1.0107	1.0097	1.0170	1.0000	1.1447	1.0196	0.9963	1.0000	
Trend	1.0065	1.0109	1.0250	1.0000	1.2214	1.0106	1.0106	1.0000	
COVID-19	-0.0050	-0.0500	-0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	
	0.0166	0.0105	0.0095	0.0000	0.0596	0.0091	-0.0007	0.0000	

								USL Customer Count	Total
1997									
1998									
1999									
2000									
2001									
2002	38,624	4,956	655	1		12,238	432		44,236
2003	39,847	4,977	637	1		12,345	485		45,462
2004	41,215	5,025	626	1		12,791	495		46,867
2005	42,322	5,098	619	1		13,078	486		48,040
2006	43,013	5,140	624	1		13,275	574		48,778
2007	43,750	5,162	630	1		13,440	533	15	49,558
2008	44,593	5,205	664	1		13,477	534	15	50,478
2009	45,113	5,300	661	1		13,619	534	14	51,089
2010	45,863	5,385	665	1		13,658	539	14	51,928
2011	46,525	5,418	667	1		13,697	459	14	52,626
2012	47,228	5,489	667	1	2	13,774	484	14	53,402
2013	47,976	5,517	669	1	2	13,907	508	14	54,180
2014	48,405	5,576	693	1	2	13,798	530	14	54,692
2015	49,095	5,669	700	1	2	13,850	529	13	55,481
2016	49,767	5,730	730	1	2	13,877	542	13	56,244
2017	50,463	5,834	740	1	2	14,472	558	14	57,055
2018	50,865	5,841	761	1	3	14,618	527	14	57,486
2019	51,216	5,892	743	1	3	14,769	532	14	57,870
2020	51,294	5,662	743	1	3	14,926	538	14	57,718
2021	51,294	5,662	743	1	3	15,084	543	14	57,718

	General Service > 50 to 4999 kW	Large User	Direct Market Participant	Street Lights	Embedded Distributors	Total
2001						
2002						0
2003	1,578,391	120,391		20,126		1,718,908
2004	1,578,377	136,143		20,541		1,735,061
2005	1,609,887	138,634		21,198		1,769,719
2006	1,625,474	144,512		21,493		1,791,479
2007	1,650,921	147,258		21,703		1,819,881
2008	1,665,645	145,766		21,921		1,833,333
2009	1,682,115	144,355		22,078		1,848,549
2010	1,762,264	155,986		22,212		1,940,462
2011	1,775,934	160,630		22,237	39,512	1,998,313
2012	1,801,339	165,061	5,848	21,334	71,507	2,065,089
2013	1,766,195	168,361	13,338	21,461	71,174	2,040,528
2014	1,726,654	166,649	12,738	21,568	72,407	2,000,016
2015	1,734,984	170,151	12,035	21,206	75,403	2,013,779
2016	1,796,641	178,218	12,126	21,346	78,348	2,086,679
2017	1,747,019	177,858	11,765	15,685	80,788	2,033,115
2018	1,795,199	173,376	25,177	9,804	85,275	2,088,831
2019	1,752,761	169,281	18,270	9,891	89,358	2,039,562
2020	1,450,060	139,615	22,951	9,204	103,033	1,724,864
2021	1,438,545	137,952	22,951	9,302	103,033	1,711,783

kw/kWh

2001					
2002					
2003	0.2716%	0.1840%		0.2786%	
2004	0.2602%	0.2061%		0.2891%	
2005	0.2565%	0.1965%		0.2752%	
2006	0.2462%	0.1962%		0.2786%	
2007	0.2418%	0.1910%		0.2806%	
2008	0.2401%	0.1900%		0.2766%	
2009	0.2413%	0.1887%		0.2787%	
2010	0.2398%	0.1889%		0.2792%	
2011	0.2449%	0.1907%		0.2801%	0.1794%
2012	0.2514%	0.1903%	0.1646%	0.2189%	0.2229%
2013	0.2503%	0.1866%	0.1740%	0.2788%	0.2316%
2014	0.2467%	0.1827%	0.1818%	0.2794%	0.2282%
2015	0.2490%	0.1830%	0.1772%	0.2787%	0.2248%
2016	0.2562%	0.1872%	0.1881%	0.2795%	0.2337%
2017	0.2574%	0.1870%	0.1888%	0.2836%	0.2363%
2018	0.2541%	0.1763%	0.2932%	0.2802%	0.2369%
2019	0.2564%	0.1760%	0.2123%	0.2826%	0.2293%
10-yr Average	0.2506%	0.1849%	0.1975%	0.2741%	0.2248%
5-yr Average	0.2546%	0.1819%	0.2119%	0.2809%	0.2322%
10-yr Trend	0.2594%	0.1772%	0.2490%	0.2860%	0.2462%

	Total OPA Annual CDM Results 2006 to 2010 programs	Total IESO Annual CDM Results 2011 to 2014 programs	Total IESO Annual CDM Results 2015 programs	Total IESO Annual CDM Results 2016 programs	Total IESO Annual CDM Results 2017 programs	Total IESO Annual CDM Results 2018 programs	Total IESO Annual CDM Results 2019 programs	Total IESO Annual CDM Results 2020 programs	Total Annual CDM Results
2006	3,672,996								3,672,996
2007	6,313,622								6,313,622
2008	8,314,386								8,314,386
2009	13,364,169								13,364,169
2010	14,361,144								14,361,144
2011	12,467,884	5,907,906							18,375,790
2012	12,173,773	12,851,074							25,024,847
2013	12,094,963	19,640,051							31,735,014
2014	11,576,490	27,849,035							39,425,525
2015	9,881,052	27,271,116	14,057,755						51,209,923
2016	9,311,006	26,465,592	14,014,168	15,699,334					65,490,100
2017	7,384,130	23,606,097	14,013,492	15,699,333	26,195,382				86,898,434
2018	5,180,408	22,862,613	14,022,609	15,683,800	24,093,655	16,428,240			98,271,325
2019	4,422,348	22,065,779	14,009,882	15,668,896	24,093,655	16,392,091	6,916,461		103,569,111
2020	3,433,840	21,584,274	13,917,975	15,668,896	24,088,434	16,271,900	6,865,747	11,436,208	113,267,273
2021	3,286,294	20,814,352	13,917,684	15,531,705	24,087,030	16,126,334	6,804,328	11,333,901	111,901,627
Total	137,238,503	230,917,889	97,953,565	93,951,964	122,558,156	65,218,565	20,586,536	22,770,109	791,195,287

Total Annual CDM Results		Increase over previous year	Monthly Addition	Increase over previous year - Not Persistent	Increase over PY - Monthly Addition -		
					Half Year Rule	Half Rule	Half Rule
2006	3,672,996	3,672,996	47,090	3,672,996	1,836,498	1,836,498	23,545
2007	6,313,622	- 467,293	(5,991)	2,640,626	4,993,309	1,602,851	20,549
2008	8,314,386	2,396,165	30,720	2,000,764	7,314,004	964,436	12,365
2009	13,364,169	3,022,259	38,747	5,049,783	10,839,277	2,709,212	34,733
2010	14,361,144	- 1,560,320	(20,004)	996,975	13,862,656	730,969	9,371
2011	18,375,790	5,334,918	68,396	4,014,646	16,368,467	1,887,299	24,196
2012	25,024,847	2,134,896	27,370	6,649,057	21,700,319	3,734,907	47,883
2013	31,735,014	4,903,717	62,868	6,710,167	28,379,931	3,519,306	45,119
2014	39,425,525	3,541,212	45,400	7,690,511	35,580,270	4,222,464	54,134
2015	51,209,923	8,787,988	112,667	11,784,398	45,317,724	6,164,600	79,033
2016	65,490,100	6,844,188	87,746	14,280,177	58,350,011	7,816,088	100,206
2017	86,898,434	15,617,098	200,219	21,408,334	76,194,267	11,230,643	143,983
2018	98,271,325	- 1,841,577	(23,610)	11,372,891	92,584,879	6,887,761	88,305
2019	103,569,111	6,856,044	87,898	5,297,787	100,920,218	2,507,234	32,144
2020	113,267,273	3,896,894	49,960	9,698,162	108,418,192	5,376,469	68,929
2021	111,901,627	- 4,663,018	(59,782)	(1,365,646)	112,584,450	- 383,062	- 4,911
Total	791,195,287						

	CDM Activity Variable	Check	Persistent Amount	CDM Activity Variable - Half Year		
Jan-06	47,090			23,545		
Feb-06	94,179			47,090		
Mar-06	141,269			70,635		
Apr-06	188,359			94,179		
May-06	235,448			117,724		
Jun-06	282,538			141,269		
Jul-06	329,628			164,814		
Aug-06	376,718			188,359		
Sep-06	423,807			211,904		
Oct-06	470,897			235,448		
Nov-06	517,987			258,993		
Dec-06	565,076	3,672,996	6,780,915	282,538	1,836,498	3,390,458

Jan-07	559,085			303,088		
Feb-07	553,094			323,637		
Mar-07	547,103			344,186		
Apr-07	541,113			364,736		
May-07	535,122			385,285		
Jun-07	529,131			405,834		
Jul-07	523,140			426,384		
Aug-07	517,149			446,933		
Sep-07	511,158			467,483		
Oct-07	505,167			488,032		
Nov-07	499,176			508,581		
Dec-07	493,185	6,313,622	5,918,220.39	529,131	4,993,309	6,349,568
Jan-08	523,905			541,495		
Feb-08	554,625			553,860		
Mar-08	585,345			566,224		
Apr-08	616,065			578,589		
May-08	646,785			590,953		
Jun-08	677,505			603,318		
Jul-08	708,226			615,683		
Aug-08	738,946			628,047		
Sep-08	769,666			640,412		
Oct-08	800,386			652,776		
Nov-08	831,106			665,141		
Dec-08	861,826	8,314,386	10,341,910	677,505	7,314,004	8,130,065
Jan-09	900,573			712,239		
Feb-09	939,320			746,972		
Mar-09	978,067			781,706		
Apr-09	1,016,813			816,439		
May-09	1,055,560			851,173		
Jun-09	1,094,307			885,906		
Jul-09	1,133,054			920,640		
Aug-09	1,171,801			955,373		
Sep-09	1,210,548			990,107		
Oct-09	1,249,295			1,024,840		
Nov-09	1,288,042			1,059,574		
Dec-09	1,326,789	13,364,169	15,921,464	1,094,307	10,839,277	13,131,687

Jan-10	1,306,785			1,103,679		
Feb-10	1,286,780			1,113,050		
Mar-10	1,266,776			1,122,421		
Apr-10	1,246,772			1,131,793		
May-10	1,226,768			1,141,164		
Jun-10	1,206,764			1,150,536		
Jul-10	1,186,760			1,159,907		
Aug-10	1,166,756			1,169,278		
Sep-10	1,146,752			1,178,650		
Oct-10	1,126,748			1,188,021		
Nov-10	1,106,743			1,197,393		
Dec-10	1,086,739	14,361,144	13,040,873	1,206,764	13,862,656	14,481,169
Jan-11	1,155,136			1,230,960		
Feb-11	1,223,532			1,255,156		
Mar-11	1,291,929			1,279,352		
Apr-11	1,360,325			1,303,549		
May-11	1,428,721			1,327,745		
Jun-11	1,497,118			1,351,941		
Jul-11	1,565,514			1,376,137		
Aug-11	1,633,910			1,400,333		
Sep-11	1,702,307			1,424,529		
Oct-11	1,770,703			1,448,725		
Nov-11	1,839,100			1,472,922		
Dec-11	1,907,496	18,375,790	22,889,951	1,497,118	16,368,467	17,965,412
Jan-12	1,934,866			1,545,001		
Feb-12	1,962,237			1,592,885		
Mar-12	1,989,607			1,640,768		
Apr-12	2,016,978			1,688,651		
May-12	2,044,348			1,736,535		
Jun-12	2,071,719			1,784,418		
Jul-12	2,099,089			1,832,302		
Aug-12	2,126,460			1,880,185		
Sep-12	2,153,830			1,928,068		
Oct-12	2,181,201			1,975,952		
Nov-12	2,208,571			2,023,835		
Dec-12	2,235,941	25,024,847	26,831,297	2,071,719	21,700,319	24,860,624

Jan-13	2,298,810			2,116,838		
Feb-13	2,361,678			2,161,957		
Mar-13	2,424,546			2,207,077		
Apr-13	2,487,414			2,252,196		
May-13	2,550,282			2,297,315		
Jun-13	2,613,150			2,342,435		
Jul-13	2,676,019			2,387,554		
Aug-13	2,738,887			2,432,673		
Sep-13	2,801,755			2,477,793		
Oct-13	2,864,623			2,522,912		
Nov-13	2,927,491			2,568,031		
Dec-13	2,990,359	31,735,014	35,884,313	2,613,150	28,379,931	31,357,805
Jan-14	3,035,760			2,667,285		
Feb-14	3,081,160			2,721,419		
Mar-14	3,126,560			2,775,553		
Apr-14	3,171,960			2,829,687		
May-14	3,217,360			2,883,821		
Jun-14	3,262,760			2,937,955		
Jul-14	3,308,160			2,992,090		
Aug-14	3,353,561			3,046,224		
Sep-14	3,398,961			3,100,358		
Oct-14	3,444,361			3,154,492		
Nov-14	3,489,761			3,208,626		
Dec-14	3,535,161	39,425,525	42,421,935	3,262,760	35,580,270	39,153,124
Jan-15	3,647,828			3,341,794		
Feb-15	3,760,494			3,420,827		
Mar-15	3,873,161			3,499,860		
Apr-15	3,985,827			3,578,894		
May-15	4,098,494			3,657,927		
Jun-15	4,211,160			3,736,960		
Jul-15	4,323,827			3,815,994		
Aug-15	4,436,493			3,895,027		
Sep-15	4,549,160			3,974,060		
Oct-15	4,661,826			4,053,094		
Nov-15	4,774,493			4,132,127		
Dec-15	4,887,159	51,209,923	58,645,912	4,211,160	45,317,724	50,533,924

Jan-16	4,974,905			4,311,367		
Feb-16	5,062,651			4,411,573		
Mar-16	5,150,397			4,511,779		
Apr-16	5,238,143			4,611,985		
May-16	5,325,889			4,712,192		
Jun-16	5,413,635			4,812,398		
Jul-16	5,501,381			4,912,604		
Aug-16	5,589,127			5,012,810		
Sep-16	5,676,873			5,113,017		
Oct-16	5,764,619			5,213,223		
Nov-16	5,852,365			5,313,429		
Dec-16	5,940,111	65,490,100	71,281,336	5,413,635	58,350,011	64,963,624
Jan-17	6,140,331			5,557,618		
Feb-17	6,340,550			5,701,601		
Mar-17	6,540,769			5,845,583		
Apr-17	6,740,988			5,989,566		
May-17	6,941,207			6,133,548		
Jun-17	7,141,427			6,277,531		
Jul-17	7,341,646			6,421,514		
Aug-17	7,541,865			6,565,496		
Sep-17	7,742,084			6,709,479		
Oct-17	7,942,303			6,853,461		
Nov-17	8,142,523			6,997,444		
Dec-17	8,342,742	86,898,434	100,112,902	7,141,427	76,194,267	85,697,119
Jan-18	8,319,132			7,229,731		
Feb-18	8,295,522			7,318,036		
Mar-18	8,271,912			7,406,340		
Apr-18	8,248,302			7,494,645		
May-18	8,224,692			7,582,950		
Jun-18	8,201,082			7,671,254		
Jul-18	8,177,472			7,759,559		
Aug-18	8,153,862			7,847,864		
Sep-18	8,130,252			7,936,168		
Oct-18	8,106,642			8,024,473		
Nov-18	8,083,032			8,112,777		
Dec-18	8,059,422	98,271,325	96,713,067	8,201,082	92,584,879	98,412,985

Jan-19	8,147,320			8,233,226		
Feb-19	8,235,218			8,265,370		
Mar-19	8,323,116			8,297,514		
Apr-19	8,411,014			8,329,658		
May-19	8,498,912			8,361,802		
Jun-19	8,586,810			8,393,946		
Jul-19	8,674,708			8,426,090		
Aug-19	8,762,606			8,458,234		
Sep-19	8,850,504			8,490,378		
Oct-19	8,938,402			8,522,522		
Nov-19	9,026,300			8,554,666		
Dec-19	9,114,198	103,569,111	109,370,380	8,586,810	100,920,218	103,041,723
Jan-20	9,164,158			8,655,739		
Feb-20	9,214,119			8,724,668		
Mar-20	9,264,079			8,793,598		
Apr-20	9,314,039			8,862,527		
May-20	9,363,999			8,931,456		
Jun-20	9,413,959			9,000,385		
Jul-20	9,463,920			9,069,314		
Aug-20	9,513,880			9,138,243		
Sep-20	9,563,840			9,207,172		
Oct-20	9,613,800			9,276,101		
Nov-20	9,663,760			9,345,030		
Dec-20	9,713,720	113,267,273	116,564,645	9,413,959	108,418,192	112,967,512
Jan-21	9,653,938			9,409,048		
Feb-21	9,594,156			9,404,137		
Mar-21	9,534,374			9,399,226		
Apr-21	9,474,591			9,394,315		
May-21	9,414,809			9,389,404		
Jun-21	9,355,027			9,384,493		
Jul-21	9,295,244			9,379,582		
Aug-21	9,235,462			9,374,671		
Sep-21	9,175,680			9,369,760		
Oct-21	9,115,898			9,364,849		
Nov-21	9,056,115			9,359,938		
Dec-21	8,996,333	111,901,627	107,955,997	9,355,027	112,584,450	112,260,321
	791,195,287			735,244,473		

Summary of Degree Day Information

Summary of All Heating Degree Days

Month	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
January	667.50	789.40	777.90	652.80	789.60	773.00	715.00	625.70	868.40	879.20	814.70	590.60	698.30
February	735.30	712.60	615.00	547.10	578.40	643.80	620.20	592.00	755.90	699.20	683.50	651.20	785.10
March	523.70	670.40	619.10	505.10	592.50	446.90	618.70	581.20	638.70	540.90	680.50	562.40	582.00
April	434.40	421.90	391.90	312.00	332.60	358.30	324.60	356.20	397.40	354.10	354.60	322.50	403.00
May	171.90	216.10	289.00	77.10	126.70	152.40	140.30	266.80	217.00	196.20	244.90	177.80	166.40
June	25.90	29.40	30.40	66.70	44.40	41.10	47.00	53.10	65.30	92.50	27.30	44.10	35.50
July	17.30	18.90	22.10	6.90	3.20	18.60	22.30	4.70	12.50	21.30	6.80	6.50	28.00
August	4.30	6.20	49.40	12.10	28.80	29.70	2.30	11.00	18.90	55.00	11.90	27.50	19.70
September	143.60	102.20	115.20	63.00	88.90	134.00	118.80	50.20	104.10	71.30	63.40	130.30	74.70
October	245.50	301.40	288.90	257.60	319.00	251.60	276.70	349.30	331.90	287.50	259.90	335.10	184.70
November	539.20	548.10	471.40	440.10	405.10	470.90	370.80	486.40	434.40	432.90	433.10	415.90	511.80
December	741.30	596.50	630.70	572.10	623.70	826.50	563.30	675.60	610.00	700.10	721.60	545.20	686.60
Total	4,249.90	4,413.10	4,301.00	3,512.60	3,932.90	4,146.80	3,820.00	4,052.20	4,454.50	4,330.20	4,302.20	3,809.10	4,175.80

Summary of All Cooling Degree Days

Month	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
January	-	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	6.60	0.70	-	-	-	-
May	1.70	10.00	-	16.80	10.50	18.70	7.70	5.30	-	6.70	-	17.70	11.20
June	70.80	38.60	50.40	63.70	76.50	35.40	62.40	54.50	25.50	16.30	104.80	32.20	51.20
July	105.90	41.90	59.80	64.80	138.90	44.80	65.70	129.00	50.10	49.30	105.40	117.20	53.80
August	101.90	55.20	21.90	83.10	30.90	46.30	94.20	72.30	72.40	30.60	67.90	45.50	65.10
September	10.80	12.60	5.40	26.00	27.70	23.80	19.20	47.00	6.00	13.70	13.70	2.30	28.00
October	-	-	1.60	-	-	-	-	1.00	-	-	2.60	-	10.90
November	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	291.10	158.30	139.10	254.40	284.50	169.00	249.20	315.70	154.70	116.60	294.40	214.90	220.20

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Summary (

Summary of .

Month	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	676.80	891.80	721.10	822.00	657.30	681.30	865.90	846.40	717.80	652.10	791.10	802.10
February	651.20	649.60	644.70	689.30	573.00	697.90	831.20	917.50	627.40	537.90	594.90	659.80
March	686.10	562.60	470.90	622.30	370.10	612.00	757.00	662.50	492.60	597.60	591.10	636.50
April	297.90	341.50	260.60	349.60	365.30	384.70	389.90	359.00	431.80	281.60	474.80	386.80
May	243.10	192.80	144.70	156.70	105.80	152.10	168.90	116.20	174.60	214.40	95.20	207.50
June	40.60	75.70	37.70	48.50	42.10	52.60	37.30	54.70	51.20	45.20	41.00	53.60
July	7.60	37.60	6.70	0.80	-	15.10	36.80	19.30	4.80	3.20	3.60	2.20
August	36.20	18.20	14.20	6.90	19.40	32.70	31.10	29.50	2.10	34.50	6.60	16.90
September	93.20	88.80	122.70	98.40	125.40	128.10	117.70	58.20	68.60	81.10	77.20	89.60
October	325.70	329.10	284.60	279.90	279.20	262.10	257.10	290.10	246.80	208.90	317.50	294.10
November	499.70	396.50	424.10	382.40	483.60	517.70	529.90	391.10	388.20	480.00	538.60	556.90
December	694.00	669.50	719.40	574.80	565.50	727.30	597.60	467.20	647.80	755.70	600.80	623.10
Total	4,252.10	4,253.70	3,851.40	4,031.60	3,586.70	4,263.60	4,620.40	4,211.70	3,853.70	3,892.20	4,132.40	4,329.10

Summary of .

Month	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	-	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-	-
April	-	3.20	-	-	-	-	-	-	-	-	-	-
May	0.70	2.30	21.00	13.20	18.20	19.60	9.00	29.80	18.40	2.70	32.50	-
June	53.00	26.20	32.60	21.60	61.20	31.30	44.30	15.50	34.30	43.00	41.50	15.70
July	75.80	14.50	106.60	129.70	128.20	86.50	38.80	57.70	103.00	58.50	89.30	100.10
August	29.50	57.30	85.30	60.10	59.10	42.10	28.50	47.90	105.00	28.60	93.90	48.30
September	12.00	5.50	23.00	19.70	16.40	20.50	11.40	45.30	26.60	36.30	48.80	13.80
October	-	-	-	-	-	-	-	-	1.90	3.20	5.20	3.50
November	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-
Total	171.00	109.00	268.50	244.30	283.10	200.00	132.00	196.20	289.20	172.30	311.20	181.40

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Summary (

Summary of .

<u>Month</u>	<u>10 Year Avg</u>	<u>20 Year Trend</u>	<u>20 Year Avg</u>
January	755.71	762.24	754.53
February	677.36	678.82	667.81
March	581.26	603.56	582.16
April	368.41	381.97	357.65
May	153.61	152.32	180.34
June	46.39	46.35	46.86
July	9.25	8.38	14.69
August	19.39	19.78	21.78
September	96.70	88.24	101.70
October	272.03	268.82	285.34
November	469.25	489.02	459.70
December	627.92	613.93	652.07

Total

Summary of .

<u>Month</u>	<u>10 Year Avg</u>	<u>20 Year Trend</u>	<u>20 Year Avg</u>
January	0.00	0.00	0.00
February	0.00	0.00	0.00
March	0.00	0.00	0.00
April	0.00	-0.27	0.53
May	16.44	16.78	11.74
June	34.10	30.23	40.13
July	89.84	87.24	80.20
August	59.88	56.87	59.00
September	26.18	27.77	21.65
October	1.38	2.38	1.42
November	0.00	0.00	0.00
December	0.00	0.00	0.00

Total

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