EXHIBIT 3

OPERATING REVENUE

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Exhibit 3: Operating Revenue

Tab 1 (of 3): Load and Revenue Forecast

INTRODUCTION

3.1.1 Operating Revenue Introduction

Exhibit 3 provides evidence for NPEI's proposed service revenue requirement of $37,840,675 including:

- $34,869,338 in base distribution revenue
- $2,971,337 in Other Revenue.

Other Revenue includes:

- Specific Service Charges
- Late Payment Charges
- Other Distribution Revenues
- Other Revenue

OVERVIEW OF OPERATING REVENUE

3.1.2 Overview of Operating Revenue

This exhibit provides the details of NPEI's Operating Revenue for 2015 Board approved, 2015 – 2019 Actual, 2020 Bridge and 2021 Test years. This exhibit also includes an analysis of year-over-year variances in revenues.

Distribution revenue does not include revenue from commodity sales. Table 3.1.2.1 below provides a summary of NPEI's total revenue by year.

Table 3.1.2.1 – Summary of Total Revenue by Year

Revenue Item	2015 Board Approved ($)	2015 Actual ($)	2016 Actual ($)	2017 Actual ($)	2018 Actual ($)	2019 Forecast ($)	2020 Bridge ($)	2021 Test Projected at Existing Rates ($)	2021 Test at Proposed Rates ($)
Distribution Revenue (Fixed and Volumetric)	28,367,997	29,256,462	28,356,823	29,156,953	30,022,824	30,457,344	31,690,137	32,474,115	34,869,338
MicroFIT Monthly Service Charge	21,060	24,477	27,730	28,471	57,278	57,689	57,914	58,028	58,028
SSS Administration Charges	146,703	149,441	149,419	156,050	158,072	160,440	165,072	166,911	166,911
Miscellaneous Service Revenues	803,285	814,886	927,291	750,275	682,382	660,922	517,876	857,068	857,068
Late Payment Charge	361,000	424,468	429,277	372,954	372,405	336,173	340,000	341,000	341,000
Retailer Revenues	45,471	39,219	35,017	30,621	26,646	39,736	44,041	39,927	39,927
Other Utility Operating Income	44,000	57,932	41,442	29,141	28,867	19,294	24,500	25,500	25,500
Gain/Loss on Disposition/Retirements	-	29,600	(4,874)	(94,957)	(96,090)	(74,145)	-	-	-
Miscellaneous Non-Operating Income	81,003	103,532	95,183	63,464	38,875	34,166	13,589	17,315	17,315
Amortization of Capital Contributions	903,332	613,263	738,438	824,191	894,004	1,002,764	1,126,809	1,211,588	1,211,588
CDM Incentive	-	278,313	(16,087)	(6,231)	437,530				
Storm Aid for Other Utilities					394,229	100,295			
IT Services						41,144	40,200	54,000	54,000
Interest and Dividend Income (Excluding Carrying Charges on DVAs)	100,000	105,631	108,114	225,113	260,255	225,055	216,000	200,000	200,000
Total Other Revenue	2,505,854	2,640,762	2,530,951	2,379,092	3,254,454	2,603,534	2,546,001	2,971,337	2,971,337
Total Service Revenue	**30,873,851**	**31,897,225**	**30,887,774**	**31,536,045**	**33,277,277**	**33,060,877**	**34,236,137**	**35,445,452**	**37,840,675**

Table 3.1.2.2 below provides details of NPEI's distribution revenue by year, by rate class.

Table 3.1.2.2 – Distribution Revenue by Rate Class

Revenue Item	2015 Board Approved ($)	2015 Actual ($)	2016 Actual ($)	2017 Actual ($)	2018 Actual ($)	2019 Forecast ($)	2020 Bridge Projected ($)	2021 Test Projected at Existing Rates ($)	2021 Test Projected at Proposed Rates ($)
Monthly Service Charge									
Residential	10,307,808	10,062,702	11,864,530	14,411,640	16,734,993	19,180,725	20,579,101	20,983,817	22,531,540
GS < 50 kW	1,967,303	2,028,931	2,026,988	2,078,042	2,070,628	2,105,877	2,153,720	2,187,854	2,349,225
GS > 50 kW	1,050,977	1,284,575	952,236	955,130	981,384	1,019,283	1,045,077	1,060,646	1,684,550
Umetered Scattered Load	97,645	84,004	91,375	88,695	85,750	87,889	81,447	80,964	82,570
Sentinel Lighting	61,058	59,985	63,471	67,064	65,265	64,276	62,149	61,328	65,852
Street Lighting	186,061	182,668	191,329	195,087	197,382	198,747	204,063	206,144	120,097
Total Fixed Distribution Revenue	**13,670,852**	**13,702,865**	**15,189,929**	**17,795,656**	**20,135,402**	**22,656,796**	**24,125,559**	**24,580,754**	**26,833,835**
Volumetric Distribution Revenue									
Residential	7,448,114	7,309,679	6,541,410	4,452,503	2,763,308	584,955	-	-	-
GS < 50 kW	1,652,338	1,731,081	1,789,931	1,790,913	1,843,559	1,811,897	1,868,737	1,926,642	2,068,747
GS > 50 kW	5,882,957	6,101,320	5,439,879	5,448,434	5,597,481	5,730,564	6,043,514	6,332,519	6,357,118
Umetered Scattered Load	29,995	21,563	21,478	21,220	21,454	21,338	21,772	21,335	21,759
Sentinel Lighting	14,769	12,787	13,698	13,915	14,157	20,295	14,555	14,693	15,776
Street Lighting	98,196	91,740	65,571	59,693	60,330	60,692	61,303	62,450	36,383
Total Volumetric Distribution Revenue	**15,126,369**	**15,268,169**	**13,871,967**	**11,786,678**	**10,300,288**	**8,229,741**	**8,009,882**	**8,357,639**	**8,499,782**
Transformer Allowance	(429,224)	(437,274)	(441,866)	(425,382)	(412,866)	(429,135)	(445,304)	(464,279)	(464,279)
SMDR Rate Rider		35,950	(70)						
SMIRR Rate Rider		247,077	(29)						
Tax Sharing Rate Rider		(28,138)	19			(58)			
Rate Rider - Adjustment to 2015 Interim Rates			(272,428)						
Rate Rider - LRAMVA		467,812	9,301						
Total Distribution Revenue	**28,367,997**	**29,256,462**	**28,356,823**	**29,156,952**	**30,022,824**	**30,457,344**	**31,690,137**	**32,474,115**	**34,869,338**

Variance analysis on distribution revenue is provided in Exhibit 3.2.1.
Further details on Other Revenue are included in Exhibit 3.3.1.

Transformer Allowance

Currently, NPEI provides a Board-approved transformer ownership allowance of ($0.60) per kW of billing demand per month to GS>50 kW customers that own their own transformers. As shown in Table 3.1.2.2 above, the amount of transformer allowance credit provided has remained fairly consistent year to year. In this current application, NPEI is proposing to continue the transformer ownership allowance of ($0.60) per kW per month. See Exhibit 8 for further details.

SMDR Rate Rider and SMIRR Rate Rider

On October 10, 2013, NPEI filed an application with the Board (EB-2013-0359) for the disposition and recovery of costs related to smart meter deployment, offset by Smart Meter Funding Adder revenues. In the EB-2013-0359 Decision and Order, issued February 27, 2014, the OEB approved Smart Meter Disposition Riders ("SMDRs") effective from March 1, 2014 to April 30, 2015, and Smart Meter Incremental Revenue Requirement Rate Riders ("SMIRRs") effective May 1, 2014 until the date of the next cost-of-service based rate order. These rate riders were applicable to NPEI's Residential and GS<50 kW rate classes. As shown in Table 3.1.2.2 above, NPEI recorded $35,950 of SMDR revenue and $247,077 in SMIRR revenue in 2015.

Tax Sharing Rate Rider

In the Decision and Order for NPEI's 2014 IRM Rate Application (EB-2013-0154), issued February 20, 2014, the OEB approved rate riders for shared tax savings to be refunded to rate payers. The shared tax savings rate riders were in effect from May 1, 2014 to April 30, 2015. As shown in Table 3.1.2.2 above, NPEI refunded $28,138 of shared tax savings in 2015.

Rate Rider – Adjustment to 2015 Interim Rates

In NPEI's 2015 COS Rate Application (EB-2015-0094), the OEB approved NPEI's 2015 distribution rates on an interim basis based on a placeholder Working Capital Allowance ("WCA") percentage of 13%. The Board ordered NPEI to complete a lead-lag study to be filed with NPEI's 2016 IRM Rate Application. In NPEI's 2016 IRM Rate Application (EB-2015-0090), the Board found that NPEI's final 2015 Revenue Requirement should be based on a WCA percentage of 10.48%. As a result, NPEI's final approved 2015 base revenue requirement is $28,367,997, which is $297,194 less than NPEI's 2015 interim base revenue requirement of $28,665,191.

As NPEI's interim 2015 rates were in effect for 11 months (June 1, 2015 to April 30, 2016), the Board determined in EB-2015-0090 that $297,194 * 11/12 = $272,428 of distribution revenue should be refunded to rate payers, which NPEI recorded in 2016 as shown in Table 3.1.2.2 above.

Rate Rider - LRAMVA

On November 16, 2015, NPEI filed an application with the OEB (EB-2015-0328) requesting approval for the disposition of its Lost Revenue Adjustment Mechanism LRAMVA account balance, relating to conservation program results for the period 2011-2014, based on a report prepared for NPEI by IndEco Strategic Consulting Inc. In a letter issued on November 27, 2015, the OEB decided it would hold a combined hearing for NPEI's LRAMVA Application and NPEI's 2016 IRM Rate Application (EB-2015-0090).

The LRAMVA balance that NPEI requested for disposition in EB-2015-0328 is $482,804, which consists of $467,812 in lost revenue plus $14,992 in carrying charges. As shown in Table 3.1.2.2 above, NPEI recorded $467,812 of LRAM revenue in 2015.

In the EB-2015-0328/EB-2015-0090 Decision and Order, issued March 17, 2016, the OEB did not approve disposition of NPEI's LRAMVA balance due to a generic issue that the IESO had identified, related to quantifying savings from demand response programs. The OEB intended to issue further guidance on LRAMVA following a stakeholder meeting to be held on March 31, 2016.

On May 19, 2016, the Board issued its *Report of the Ontario Energy Board – Updated Policy for the Lost Revenue Adjustment Mechanism Calculation: Lost Revenues and Peak Demand Savings from Conservation and Demand Management Programs,* in which the OEB determined that peak demand savings from demand response programs should not be included in LRAMVA results.

NPEI engaged IndEco to update its 2011-2014 LRAMVA report to exclude demand response results, as well as incorporate an additional year of LRAMVA results for 2015, as the 2015 final verified CDM results had become available.
The updated 2011-2015 report identified additional LRAM revenue for 2015 of $27,307, and a reduction to 2011-2014 LRAM revenue of $18,006 for the removal of demand response savings.

As shown in Table 3.1.2.2 above, NPEI recorded $27,307 - $18,006 = $9,301 of LRAM revenue in 2016.

NPEI requested disposition of its 2011-2015 LRAMVA balance of $496,934 ($477,114 principal plus $19,820 carrying charges) in its 2017 IRM Rate Application (EB-2016-0094). In the EB-2016-0094 Decision and Order, issued May 4, 2017, the OEB approved the disposition of NPEI's LRAMVA balance of $496,934, to be collected through rate riders in effect from May 1, 2017 to April 30, 2018.

In this current application, NPEI is requesting disposition of its 2016-2018 LRAMVA balance. See Exhibit 9 for further details.

HISTORICAL & FORECAST VOLUMES

3.1.3 Historical & Forecast Volumes

This section describes the process used by NPEI to develop its 2020 Bridge Year and 2021 Test Year weather-normalized consumption, demand and customer/connection forecasts that are incorporated into NPEI's proposed 2021 distribution rates.

NPEI has utilized the same methodology as was approved by the OEB in NPEI's 2015 Cost-of-Service Rate Application (EB-2014-0096). A copy of NPEI's weather normalized load forecasting model has been filed in live Excel format, and is included as Appendix 3-1.

NPEI's weather normalized load forecast is developed in a three-step process. First, a total system weather normalized purchased energy forecast is developed based on a multifactor regression model that incorporates independent variables that impact the monthly historical load pattern for NPEI. Second, the weather normalized purchased energy forecast is adjusted by a historical loss factor to produce a weather normalized billed energy forecast. Next, 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 is determined using a geometric mean analysis.

For those rate classes that use kW for the distribution volumetric billing determinant, an adjustment factor is applied to the rate class energy forecast based on the historical relationship between kW and kWh to determine a forecast for billed kW.

A detailed explanation of the load forecasting process follows.

Purchased kWh Load Forecast

An equation to predict total system purchased energy is developed using a multifactor regression model with the following independent variables: weather (heating and cooling degree days); Ontario real GDP; number of days in the month; CDM activity; spring/fall seasonal "flag" and the population of NPEI's service area. The regression model uses monthly kWh and monthly values of independent variables from January 2002 to December 2019 to determine a prediction formula with coefficients for each independent variable. This provides 216 monthly data points for the regression analysis. NPEI has determined the average weather conditions (heating degree days and cooling degree days) over a 10-year period to be utilized in the prediction formula to determine a weather normalized forecast. However, in accordance with the OEB's Filing Requirements, NPEI has also provided a sensitivity analysis showing the impact on the 2020 Bridge and 2021 Test year forecasts of purchases assuming weather normal conditions that are based on a 20-year trend of weather data.

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

The following outlines the prediction model used by NPEI to predict weather normal purchases for 2020 and 2021:

NPEI's Monthly Predicted kWh Purchases

= Heating Degree Days * 24,552.47

+ Cooling Degree Days * 203,919.28

+ Ontario Real GDP Monthly % * 436,555.70

+ Number of Days in the Month * 2,689,974.56

+ CDM Activity * (4.20)

+ Spring/Fall Flag * (4,890,418.81)

+ Population * 967.96

+ Intercept of (174,990,778.15)

The monthly data used in the regression model and the resulting monthly prediction for the actual and forecasted years are provided in Appendix 3-1.

The sources of data for the various data points are as follows:

Weather (HDD and CDD)

NPEI utilized the Environment Canada website for monthly heating degree day and cooling degree day information. Weather data from the Port Weller weather station was used. The Port Weller station is located in between NPEI's two service areas (the

Niagara Falls area and the former Peninsula West area), and therefore NPEI submits that Port Weller data provides a suitable representation of average weather across NPEI's total service area. Environment Canada defines heating degree-days and cooling degree-days as follows[1]: *Heating degree-days for a given day are the number of degrees Celsius that the mean temperature is below 18°C. Cooling degree-days for a given day are the number of degrees Celsius that the mean temperature is above 18°C.*

Table 3.1.3.1 below shows the 10 year HDD and CDD data that was used in NPEI's regression model.

Table 3.1.3.1 – 10 Year HDD and CDD Data

HDD	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	723.9	653.3	678.0	554.4	556.4	727.8	696.3	597.3	550.1	647.4	663.4
February	537.0	551.1	578.5	482.4	565.9	648.1	776.4	537.4	448.8	498.7	548.3
March	509.1	434.7	527.0	366.7	508.7	636.2	596.9	444.6	528.4	518.8	536.4
April	315.4	253.2	342.6	296.3	341.3	356.6	325.9	344.4	273.1	434.2	345.9
May	185.9	129.4	187.1	99.5	153.9	174.7	131.8	158.0	181.8	118.5	226.5
June	66.8	15.0	21.9	18.9	44.3	27.0	61.2	19.1	27.0	31.9	63.1
July	0.6	1.9	-	-	2.3	0.6	2.6	-	-	-	-
August	3.9	1.4	-	-	-	0.9	2.2	-	-	-	0.9
September	32.4	54.4	26.9	37.9	51.6	42.7	17.1	14.4	25.1	23.9	12.7
October	241.2	218.2	184.9	191.9	161.4	173.7	186.1	141.0	93.8	204.7	163.1
November	320.8	346.6	284.9	381.9	412.9	416.0	284.5	270.5	381.4	434.3	439.1
December	570.9	600.5	463.7	463.2	601.4	509.8	373.0	540.9	617.2	500.8	514.3
Total	3,507.9	3,259.7	3,295.5	2,893.1	3,400.1	3,714.1	3,453.8	3,067.5	3,126.6	3,413.2	3,513.7

CDD	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	0.0	-	-	-	-
May	-	22.4	4.1	22.4	14.3	3.0	9.8	31.0	2.8	15.4	-
June	33.0	60.6	41.8	105.6	47.5	39.1	19.5	66.3	62.8	47.6	30.3
July	56.8	174.6	196.9	203.5	139.4	77.9	121.2	166.6	111.6	184.0	155.9
August	118.8	145.7	146.3	148.7	106.4	86.2	104.3	198.9	102.0	183.7	112.6
September	30.7	40.2	39.9	50.3	34.4	42.3	84.0	88.8	59.5	78.7	47.6
October	-	0.5	4.2	2.6	4.8	5.7	1.8	11.8	14.9	9.8	3.1
November	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-
Total	239.3	444.0	433.2	533.1	346.8	254.2	340.6	563.4	353.6	519.2	349.5

[1] http://climate.weather.gc.ca/glossary_e.html

Number of Days in the Month

NPEI used a variable in its regression model to capture differences in monthly consumption due to the number of days in a month.

Spring/Fall Flag

A binary variable representing the shoulder months has been utilized in the regression model. This variable takes a value of 1 during the months of March, April, May, September, October and November, and a value of 0 during all other months.

Ontario Real GDP

The source of data for the Ontario Real GDP information were various editions of the Ontario Economic Outlook and Fiscal Review, Ontario Ministry of Finance, with the most recent source being from the 2019 Ontario Budget[2]. NPEI notes that the Real GDP Growth values used for 2019 to 2021 are Ontario Ministry of Finance planning projections. The monthly values of the regression variable were derived by incrementing each month by 1/12 of the change in annual values taken from the Ministry of Finance data.

CDM Activity

The CDM activity variable is an estimated level of monthly activity in CDM energy savings, measured in net kWh.

- For the years 2006 to 2010, the results are taken from NPEI's Net Energy Savings from the 2006-2010 Final CDM Results, as reported by the OPA.
- For the years 2011 to 2014, the results are taken from the verified Net Energy Savings in the IESO's 2011-2014 Final CDM Report.
- For 2015-2017, the results are taken from the Net Energy Savings in the IESO's 2017 Final Verified Annual LDC CDM Program Results.

[2] http://budget.ontario.ca/2019/brief.html#section-1

- For 2018, the results are taken from the Net Energy Savings from the IESO's final Participation and Cost report issued in April 2019.
- For 2019, the results represent the sum of 2019 Net Energy Savings that were included in the April 2019 Participation and Cost Report, and results submitted by NPEI to the IESO during the months of April to December 2019, for projects that commenced prior to April 30, 2019.

NPEI notes that the energy savings reported by the IESO are annualized values. However, the CDM initiatives are actually implemented at various times throughout the year. To account for this, NPEI has only included 50% of the incremental change each year in the CDM Activity regression variable. Within each year, the monthly values grow at an equal monthly increment of $1/78^{th}$ of the annual amount, which is consistent with the approach approved in NPEI's last Cost-of-Service Rate Application (EB-2014-0096).

The OEB's *Addendum to Filing Requirements for Electricity Distribution Rate Applications – 2020 Rate Applications – issued July 15, 2019,* indicates that only CDM projects that are subject to a contractual agreement entered into between a distributor and a customer by April 30, 2019 under a former CFF program should be included in the proposed CDM manual adjustment to the load forecast for 2019 and 2020. As discussed above, NPEI has incorporated CDM results from projects with contracts that were entered into prior to April 30, 2019 and were completed during 2019 as part of its CDM explanatory variable. NPEI has not incorporated any manual CDM adjustments for the 2020 Bridge Year or the 2021 Test Year.

Table 3.1.3.2 below provides the details of NPEI's proposed 2019 incremental CDM activity results:

Table 3.1.3.2 – 2019 CDM Activity Net Energy Savings (MWh)

Source	Program	Gross Energy Savings (MWh)	Net-to-Gross Ratio	Net Unverified Energy Savings (MWh)
Final IESO Participation and Cost Report (April 2019)	Heating and Cooling Program			6.30
Final IESO Participation and Cost Report (April 2019)	Retrofit Program			186.89
Final IESO Participation and Cost Report (April 2019)	Small Business Lighting Program			147.59
Final IESO Participation and Cost Report (April 2019)	Business Refrigeration Program			194.87
Monthly Retrofit Program Data	Retrofit Program	3,890.47	82.3%	3,201.86
Total				3,737.50

In calculating the 2019 incremental CDM results, NPEI utilized the latest available program evaluation net-to-gross ratio of 82.3%.

Table 3.1.3.3 outlines the Net Energy Savings, on an annualized basis, for the years 2006 to 2021.

Table 3.1.3.3 – Annualized CDM Net Energy Savings (MWh)

		Effect in Year															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Year Reported	2006	4,211	4,211	4,211	4,211	731	731	669	669	629	629	594	594	594	594	538	467
	2007		3,589	2,152	1,974	1,974	1,973	1,908	1,908	1,908	653	515	307	307	307	307	238
	2008			3,033	2,473	2,473	2,473	2,297	2,297	2,113	1,976	1,485	1,276	1,159	1,159	1,142	1,115
	2009				4,448	3,613	3,613	3,611	3,522	3,287	3,045	2,940	2,379	1,825	1,522	534	484
	2010					5,435	4,043	4,037	4,035	3,930	3,511	3,489	3,178	2,515	993	629	629
	2011						7,169	5,019	4,942	4,630	4,505	4,311	3,833	3,831	3,739	3,424	2,664
	2012							5,616	5,563	5,483	4,466	4,132	3,331	3,213	3,210	3,138	2,665
	2013							3,400	7,082	7,068	7,018	6,802	6,388	6,270	6,262	6,239	4,686
	2014							1,516	1,816	10,643	10,564	10,496	10,337	9,752	9,709	9,420	8,242
	2015										14,944	14,904	14,900	14,937	14,928	14,921	14,920
`	2016											13,528	13,483	13,483	13,396	13,267	13,168
	2017												18,120	15,840	15,791	15,664	15,660
	2018													8,444	8,366	8,288	8,210
	2019														3,738	3,614	3,495
	Total	4,211	7,801	9,397	13,106	14,226	20,003	28,073	31,833	39,691	51,311	63,197	78,126	82,170	83,715	81,126	76,645

Population

The population data for NPEI's service area was taken from the Niagara Region's web site[3]. Population by municipality is presented for 1996, 2001, 2006, 2011 and 2016, based on Census data. NPEI calculated the growth rate in population for each Municipality in NPEI's service area from 2011 to 2016 (5 years). NPEI utilized these values as forecast growth rates in population for 2016 to 2021 (5 years) for each Municipality. The resulting weighted-average growth rate for NPEI's total service area for the 5 years 2016 to 2021 is 5.56%. The population variable is then incremented by an equal amount each month to attain the December 2021 forecast level. Table 3.1.3.4 shows NPEI's service area population data.

[3] http://www.niagararegion.ca/about-niagara/statistics/population-and-maps.aspx

Table 3.1.3.4 – Population Data

	Census Data					
	1996	**2001**	**2006**	**2011**	**2016**	**Forecast 2021**
Niagara Falls	76,917	78,815	82,184	82,997	88,071	93,455
Lincoln	18,801	20,610	21,722	22,487	23,787	25,162
West Lincoln	11,513	12,265	13,167	13,837	14,500	15,195
Pelham	14,393	15,275	16,155	16,598	17,110	17,638
Total	121,624	126,965	133,228	135,919	143,468	151,450
Growth Rates (5 years)						Estimated Growth Rate 2016-2021
Niagara Falls		2.47%	4.27%	0.99%	6.11%	**6.11%**
Lincoln		9.62%	5.40%	3.52%	5.78%	**5.78%**
West Lincoln		6.53%	7.35%	5.09%	4.79%	**4.79%**
Pelham		6.13%	5.76%	2.74%	3.08%	**3.08%**
Weighted Growth Rate		4.39%	4.93%	2.02%	5.55%	5.56%

The prediction formula produced by the regression analysis has the following statistical results:

Table 3.1.3.5 - Statistical Results

Statistic	Value
R Square	0.942
Adjusted R Square	0.940
MAPE (Calculated Monthly)	2.01%
T-Stats by Coefficient	
Intercept	(6.81)
Heating Degree Days	19.39
Cooling Degree Days	32.63
Ontario Real GDP Monthly %	3.27
Number of Days in Month	11.77
CDM kWh Saved in Month	(13.21)
Spring Fall Flag	(10.39)
Population	3.22

The annual results of the above prediction formula compared to the actual annual purchases from 2002 to 2019 are shown in Table 3.1.3.6 below.

Table 3.1.3.6: Actual vs. Predicted (Annual GWh)

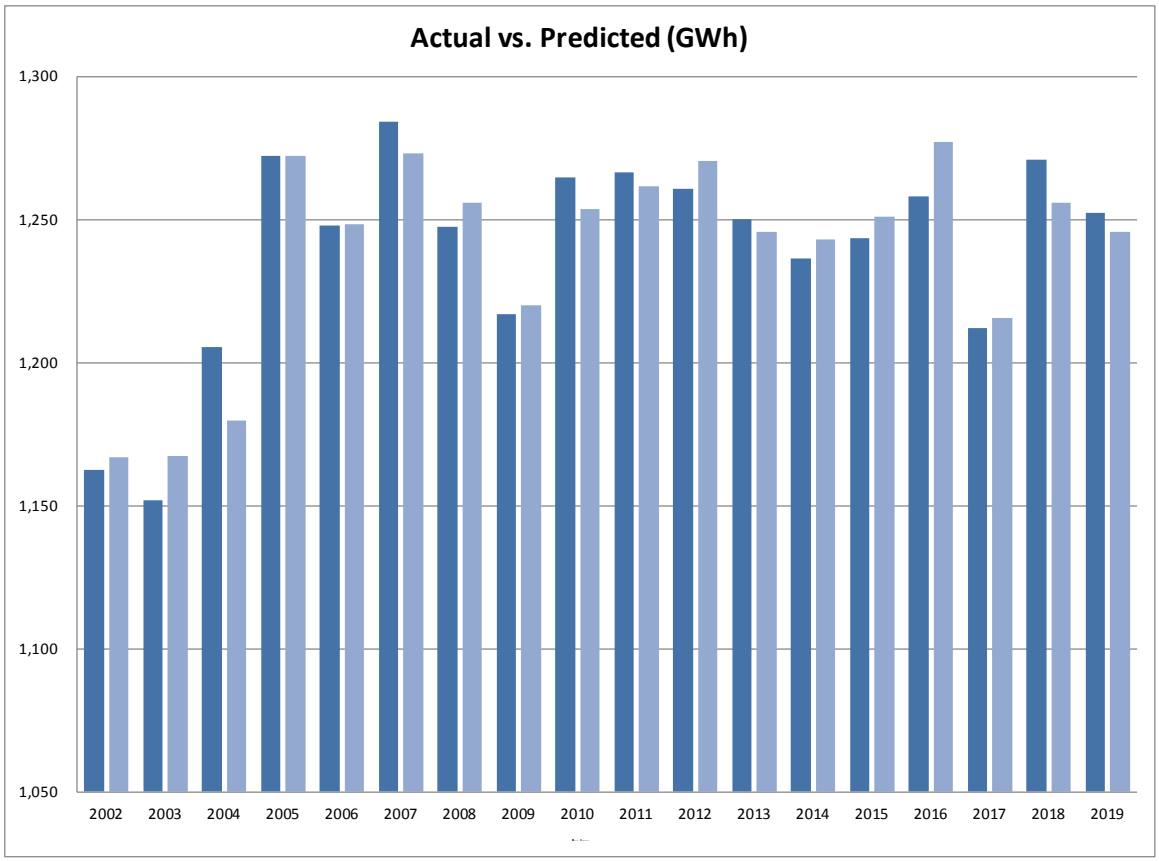


Table 3.1.3.7 outlines the data that supports the above chart. In addition, the predicted total system purchases for NPEI are provided for the 2020 Bridge Year and the 2021 Test Year. For 2020 and 2021, the system purchases reflect a weather normalized forecast for the full year, based on 10-year average weather normalization. Values for 2020 and 2021 are also provided on a 20-year trend assumption for weather normalization.

Table 3.1.3.7: Total System Purchases

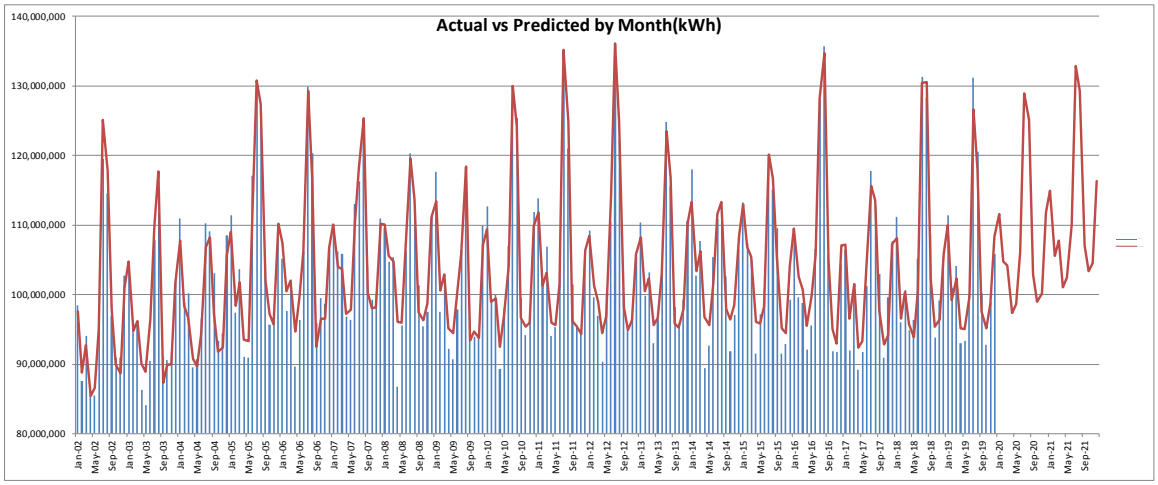
Year	Actual GWh	Predicted GWh	% Difference
2002	1,162.7	1,166.9	0.4%
2003	1,152.0	1,167.5	1.3%
2004	1,205.2	1,179.7	-2.1%
2005	1,272.2	1,272.0	0.0%
2006	1,248.1	1,248.3	0.0%
2007	1,283.9	1,273.2	-0.8%
2008	1,247.4	1,256.0	0.7%
2009	1,216.8	1,220.2	0.3%
2010	1,264.7	1,253.5	-0.9%
2011	1,266.3	1,261.4	-0.4%
2012	1,260.8	1,270.3	0.8%
2013	1,250.1	1,245.6	-0.4%
2014	1,236.4	1,243.2	0.6%
2015	1,243.5	1,251.2	0.6%
2016	1,257.8	1,277.0	1.5%
2017	1,212.2	1,215.8	0.3%
2018	1,270.8	1,255.9	-1.2%
2019	1,252.4	1,245.7	-0.5%
2020 Weather Normal - 10 Year Average		1,290.4	
2021 WeatherNormal - 10 Year Average		1,335.2	
2020 Weather Normal - 20 Year Trend		1,294.6	
2021 WeatherNormal - 20 Year Trend		1,339.4	

The weather normalized amount for 2021 is determined by using the 2021 values of the dependent variables in the prediction formula on a monthly basis together with the average monthly heating degree days and cooling degree days that occurred from January 2010 to December 2019 (10 years). The 20-year trend value is based on the trends in monthly heating degree days and cooling degree days that occurred from January 2000 to December 2019, which were calculated using Microsoft Excel's TREND function.

NPEI's 2021 proposed load forecast is based on utilizing 10-year average weather data, which is consistent with the load forecasting methodology approved in NPEI's last COS Rate Application (EB-2014-0096).

Table 3.1.3.8 below displays the actual versus predicted kWh purchases from 2002 to 2019 on a monthly basis, and also displays the monthly predicted values for the 2020 Bridge Year and 2021 Test Year, using 10-year average weather as discussed above.

Table 3.1.3.8: Actual vs. Predicted (Monthly kWh)



Billed kWh Load Forecast

To determine the total weather normalized energy billed forecast, the total system weather normalized purchases forecast is adjusted by a historical loss factor. Table 3.1.3.9 below shows NPEI's historical purchased and billed kWh for the most recent 10 years, from 2015 to 2019, as well as the resulting annual loss factors. The average distribution loss factor over the entire 10-year period is 1.0387. The average distribution loss factor over the most recent 5-year period (2015 to 2019) is 1.0376. For the purposes of converting the weather normalized purchases to billed quantities for the 2020 Bridge Year and 2021 Test Year, NPEI has used the 5-year average distribution loss factor of 1.0376, as this value more accurately reflects NPEI's current actual distribution losses.

Table 3.1.3.9: Historical Distribution Loss Factors

Year	Total Purchases (kWh)	Total Billed (kWh)	Distribution Loss Factor
2010	1,264,714,637	1,193,712,076	1.0595
2011	1,266,311,662	1,232,998,827	1.0270
2012	1,260,789,451	1,214,015,314	1.0385
2013	1,250,108,324	1,202,305,265	1.0398
2014	1,236,354,091	1,195,394,887	1.0343
2015	1,243,499,330	1,195,656,487	1.0400
2016	1,257,831,314	1,212,742,877	1.0372
2017	1,212,201,216	1,168,010,031	1.0378
2018	1,270,822,507	1,224,357,127	1.0380
2019	1,252,366,738	1,210,020,079	1.0350
10 Year Average			1.0387
5 Year Average			**1.0376**

The adjustment from the weather normalized purchases to the weather normalized billed quantities has been made by NPEI using the 5-year average loss factor from 2015 to 2019 of 1.0376, as discussed above. With this average loss factor, the total weather normalized billed energy is 1,243.7 GWh for 2020 (i.e. 1,290.4 GWh / 1.0376) and 1,286.8 GWh for 2021 (i.e. 1,335.2 GWh / 1.0373).

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

Once 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/connection forecast is based on reviewing historical customer/connection data that is available as shown in Table 3.1.3.10. Historical customer/connection and billing data is available for all rate classes from the year 2003 and onward.

Table 3.1.3.10: Historical Customer/Connection

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL	Total
2015 Board Approved	47,067	4,385	862	303	12,989	422	66,028
2003	42,507	3,982	864	582	11,358	422	59,715
2004	42,859	4,033	819	602	11,588	422	60,323
2005	43,068	4,437	802	522	11,752	422	61,003
2006	43,724	4,438	871	594	11,807	422	61,856
2007	44,325	4,339	853	569	11,933	440	62,459
2008	44,955	4,260	847	564	11,986	445	63,057
2009	45,761	4,257	852	566	12,136	454	64,026
2010	45,840	4,357	851	417	12,334	465	64,264
2011	45,996	4,307	859	369	12,540	424	64,494
2012	45,871	4,260	855	343	12,507	384	64,220
2013	46,274	4,315	863	337	12,702	422	64,913
2014	46,773	4,377	823	330	12,745	421	65,469
2015	47,555	4,434	781	334	12,897	358	66,360
2016	48,401	4,457	759	311	13,177	389	67,493
2017	49,606	4,505	808	324	13,308	373	68,924
2018	50,324	4,479	790	312	13,310	356	69,571
2019	50,792	4,475	800	296	13,360	335	70,058

From the historical customer/connection data, the growth rates in customers/connections can be evaluated. The annual growth rates are provided in Table 3.1.3.11. The geometric mean growth rate in number of customers/connections is also provided for each rate class. The geometric mean approach provides the average compounding growth rate from 2004 to 2019.

Table 3.1.3.11: Growth Rate in Customer/ Connections

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
2004	1.0083	1.0128	0.9479	1.0344	1.0203	1.0000
2005	1.0049	1.1002	0.9792	0.8671	1.0142	1.0000
2006	1.0152	1.0002	1.0860	1.1379	1.0047	1.0000
2007	1.0137	0.9777	0.9793	0.9579	1.0107	1.0427
2008	1.0142	0.9818	0.9930	0.9917	1.0044	1.0113
2009	1.0179	0.9992	1.0062	1.0022	1.0126	1.0203
2010	1.0017	1.0235	0.9986	0.7374	1.0163	1.0242
2011	1.0034	0.9885	1.0088	0.8851	1.0166	0.9119
2012	0.9973	0.9891	0.9961	0.9299	0.9974	0.9045
2013	1.0088	1.0130	1.0088	0.9832	1.0156	1.0992
2014	1.0108	1.0143	0.9536	0.9774	1.0034	0.9980
2015	1.0167	1.0130	0.9493	1.0127	1.0119	0.8519
2016	1.0178	1.0052	0.9718	0.9297	1.0217	1.0841
2017	1.0249	1.0108	1.0646	1.0433	1.0099	0.9596
2018	1.0145	0.9942	0.9777	0.9618	1.0002	0.9555
2019	1.0093	0.9991	1.0127	0.9499	1.0038	0.9403
Geometric Mean (2004-2019)	1.0112	1.0073	0.9952	0.9586	1.0102	0.9857
Geometric Mean (2015-2019)				0.9786		
Geometric Mean (2016-2019)			1.0060			

In reviewing the resulting geometric means for 2004-2019 in the table above, NPEI notes that the geometric means for the GS>50 kW class and the Sentinel class do not appear to be reasonable. In NPEI's view, the 2004-2019 geometric means for these two rate classes are too low to be used to forecast the customer / connection counts for 2020 and 2021.

For the GS>50 kW class, the customer counts for 2014 and 2015 were significantly impacted by the closure of a mall in Niagara Falls, as well as reclassification between the GS > 50 kW and GS < 50 kW rate classes. Therefore, for the GS>50 kW class, NPEI proposes to use the 4-year geometric mean from 2016-2019 of 1.0060.

For the Sentinel rate class, NPEI notes that there was a significant reduction in the number of sentinel lights over the period 2009 to 2014, which appears to have stabilized

in more recent years. Therefore, for the Sentinel rate class, NPEI proposes to use the 5-year geometric mean from 2015-2019 of 0.9786.

For all of the other rate classes, NPEI proposes to use the 2004-2019 geometric means to forecast the 2020 and 2021 customer/connection counts. For each rate class, the geometric mean that has been utilized is highlighted in table 3.1.3.11 above.

The geometric means are applied to the 2019 customer/connection numbers to determine the forecast of customer/connections for 2020. Then the geometric means are applied again to the 2020 values to determine the 2021 customer/connection forecast. Table 3.1.3.12 outlines the forecast of customers and connections by rate class.

Table 3.1.3.12: Customer/ Connection Forecast

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
2020 Bridge	51,360	4,508	805	290	13,496	330
2021 Test	51,935	4,541	810	283	13,634	325

The next step in the process is to review the historical customer/connection usage and to reflect this usage per customer in the forecast. Table 3.1.3.13 provides the average annual usage per customer by rate class from 2004 to 2019.

Table 3.1.3.13 Historical Annual usage per Customer

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
2015 Board Approved	8,732	28,218	786,781	857	576	5,255
2004 Actual	9,433	30,483	730,685	497	606	5,747
2005 Actual	10,763	28,216	760,536	645	635	5,668
2006 Actual	10,292	27,495	690,260	534	698	5,629
2007 Actual	10,439	29,038	729,299	519	589	5,289
2008 Actual	10,020	28,794	715,076	508	626	5,175
2009 Actual	9,592	28,175	695,793	520	599	5,190
2010 Actual	9,846	27,840	718,056	704	597	5,045
2011 Actual	9,106	30,111	786,394	667	582	4,241
2012 Actual	9,038	29,453	776,553	779	586	5,904
2013 Actual	8,910	28,776	760,337	787	578	5,332
2014 Actual	8,906	29,692	777,087	776	583	4,400
2015 Actual	8,742	28,447	825,960	670	535	4,395
2016 Actual	8,952	29,241	846,354	688	376	4,021
2017 Actual	8,278	28,203	772,403	650	337	4,114
2018 Actual	8,963	29,305	804,831	708	338	4,275
2019 Actual	8,560	28,322	802,947	737	328	4,670

From the historical usage per customer/connection data the growth rate in usage per customer/connection can be reviewed. That information is provided in Table 3.1.3.14. The geometric mean growth rates have also been shown.

Table 3.1.3.14: Growth Rate in Usage per Customer/Connection

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
2004	0.9573	0.9606	1.1401	0.9685	1.0259	1.0023
2005	1.1411	0.9256	1.0409	1.2979	1.0466	0.9863
2006	0.9562	0.9744	0.9076	0.8278	1.0992	0.9931
2007	1.0143	1.0561	1.0566	0.9717	0.8437	0.9395
2008	0.9599	0.9916	0.9805	0.9797	1.0638	0.9785
2009	0.9573	0.9785	0.9730	1.0237	0.9570	1.0029
2010	1.0265	0.9881	1.0320	1.3528	0.9971	0.9720
2011	0.9248	1.0816	1.0952	0.9476	0.9737	0.8406
2012	0.9925	0.9781	0.9875	1.1681	1.0074	1.3921
2013	0.9858	0.9770	0.9791	1.0102	0.9867	0.9031
2014	0.9996	1.0319	1.0220	0.9864	1.0081	0.8252
2015	0.9816	0.9581	1.0629	0.8625	0.9177	0.9989
2016	1.0240	1.0279	1.0247	1.0279	0.7023	0.9148
2017	0.9246	0.9645	0.9126	0.9438	0.8963	1.0232
2018	1.0828	1.0391	1.0420	1.0893	1.0029	1.0390
2019	0.9550	0.9665	0.9977	1.0416	0.9707	1.0926
Geometric Mean	0.9912	0.9929	1.0142	1.0229	0.9638	0.9873
Used	0.9912	0.9929	1.0142	1.0229	1.0000	0.9873

NPEI notes that the geometric means of growth rates in use per customer / connection in Table 3.1.3.14 above all appear reasonable, with the exception of the Streetlighting class. During 2015 and 2016, municipalities within NPEI's service territory undertook a series of projects under the Retrofit Program to retrofit streetlights to a more energy efficient light emitting diode (LED) technology. This had a significant impact on the average usage per streetlight, and the resulting geometric mean calculation. NPEI has utilized a growth rate of 1.00 to estimate the Streetlighting usage per connection for 2020 and 2021.

For the forecast of usage per customer/connection, the historical geometric means are applied to the 2019 usage per customer/connection to determine the 2020 forecast. The geometric mean is applied again to the 2020 values to determine the 2021 forecast and the resulting energy usage forecast is as follows in Table 3.1.3.15 below:

Table 3.1.3.15: Forecast Annual kWh Usage per Customer/ Connection

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
2020 Bridge	8,485	28,121	814,342	754	328	4,611
2021 Test	8,410	27,922	825,898	771	328	4,552

With the preceding information, the non-normalized weather billed energy forecast can be determined by multiplying the forecast numbers of customers/connections from Table 3.1.3.13 by the forecast of annual usage per customer/connection from Table 3.1.3.15. The resulting non-normalized weather billed energy forecast is shown in Table 3.1.3.16.

Table 3.1.3.16: Non-normalized Weather Billed Energy Forecast (MWh)

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL	Total
2020 Bridge (Non-Normalized)	435,774	126,765	655,400	218	4,424	1,523	1,224,104
2021 Test (Non-Normalized)	436,791	126,788	668,707	219	4,469	1,482	1,238,456

The non-normalized weather billed energy forecast has been determined, but this now needs to be adjusted in order to be aligned with the total weather normalized billed energy forecast. As previously determined, the total weather normalized billed energy forecast is 1,243.7 GWh for 2020 and 1,286.8 GWh for 2021.

The difference between the weather normalized and non-normalized forecasts is 19.5 GWh in 2020 (i.e. 1,243.7 GWh - 1,224.1 GWh) and 48.4 GWh in 2021 (i.e. 1,286.8 GWh - 1,238.5 GWh). The difference is assumed to be associated with moving the forecast from a non-normalized to a weather normal basis and this amount will be assigned to those rate classes that are weather sensitive. NPEI proposes to use the same percentages of weather sensitivity by rate class as were approved by the OEB in NPEI's last COS Rate Application (EB-2014-0096). Table 3.1.3.17 below indicates NPEI's proposed percentages of weather sensitivity by rate class.

Table 3.1.3.17: Weather Sensitivity by Rate Class

Weather Sensitivity	Residential	GS<50	GS>50	Sentinels	Streetlights	USL
% of Load Weather Sensitive	93.5%	93.5%	87.0%	0.0%	0.0%	0.0%

The differences between the weather normalized and non-normalized forecasts of 19.5 GWh in 2020 and 48.4 GWh in 2021 have been assigned on a per MWh basis to each rate class based on the above level of weather sensitivity.

The resulting weather normalized forecasts for the 2020 Bridge Year and the 2021 Test Year are shown in Table 3.1.3.18 below.

Table 3.1.3.18: Weather Normalized Billed Forecast (MWh)

Year	Residential	GS<50	GS>50	Sentinels	Streetlights	USL	Total
2020 Bridge (Weather Normalized)	443,040	128,878	665,568	218	4,424	1,523	1,243,651
2021 Test (Weather Normalized)	454,614	131,962	694,096	219	4,469	1,482	1,286,841

Billed kW Load Forecast

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

Table 3.1.3.19 provides the annualized kW of demand by applicable rate class.

Table 3.1.3.19: Historical Annual kW per Applicable Rate Class

Year	GS>50	Sentinels	Streetlights	Total
2015 Board Approved	1,771,675	705	21,184	1,793,564
2004 Actual	1,673,046	933	19,480	1,693,459
2005 Actual	1,719,941	892	19,789	1,740,622
2006 Actual	1,777,691	831	19,932	1,798,454
2007 Actual	1,884,479	825	20,188	1,905,492
2008 Actual	1,735,816	733	20,371	1,756,920
2009 Actual	1,753,191	695	20,319	1,774,205
2010 Actual	1,769,836	653	19,656	1,790,145
2011 Actual	1,793,543	679	20,391	1,814,614
2012 Actual	1,761,221	721	21,037	1,782,980
2013 Actual	1,721,554	716	20,809	1,743,079
2014 Actual	1,662,695	676	20,750	1,684,121
2015 Actual	1,643,856	672	20,270	1,664,798
2016 Actual	1,616,038	643	13,925	1,630,606
2017 Actual	1,603,355	646	12,517	1,616,517
2018 Actual	1,621,855	650	12,519	1,635,024
2019 Actual	1,639,987	643	12,447	1,653,077

Table 3.1.3.20 illustrates the historical ratios of kW/kWh as well as the 16-year average ratio from 2004 to 2019, and the 3-year average ratio from 2017 to 2019. NPEI notes that the ratios of kW to kWh have changed over time, particularly in the General Service > 50 kW and Sentinel classes. NPEI proposes to base the 2020 Bridge Year and 2021 Test Year forecast values for kW on the 3 year ratios, as this more accurately reflects current demand patterns for NPEI's customers

Table 3.1.3.20: Historical Ratios of kW to kWh

Year	GS>50	Sentinels	Streetlights
2015 Board Approved	0.2644%	0.2717%	0.2833%
2004 Actual	0.2796%	0.3118%	0.2772%
2005 Actual	0.2820%	0.2649%	0.2653%
2006 Actual	0.2957%	0.2620%	0.2420%
2007 Actual	0.3029%	0.2794%	0.2874%
2008 Actual	0.2866%	0.2556%	0.2715%
2009 Actual	0.2957%	0.2362%	0.2794%
2010 Actual	0.2896%	0.2225%	0.2667%
2011 Actual	0.2657%	0.2760%	0.2795%
2012 Actual	0.2652%	0.2695%	0.2870%
2013 Actual	0.2624%	0.2696%	0.2833%
2014 Actual	0.2601%	0.2640%	0.2793%
2015 Actual	0.2548%	0.3004%	0.2938%
2016 Actual	0.2516%	0.3006%	0.2813%
2017 Actual	0.2569%	0.3067%	0.2793%
2018 Actual	0.2551%	0.2948%	0.2785%
2019 Actual	0.2553%	0.2947%	0.2842%
16 Year Average	0.2724%	0.2755%	0.2772%
3 Year Average	0.2558%	0.2987%	0.2807%

The 3-year average ratios were applied to the weather normalized billed energy forecasts in Table 3.1.3.18 to provide the forecast of kW by rate class as shown below in Table 3.1.3.21.

Table 3.1.3.21: Annual kW Forecast by Applicable Rate Class

Year	GS>50	Sentinels	Streetlights	Total
2020 Bridge	1,702,291	652	12,418	1,715,361
2021 Test	1,775,257	653	12,545	1,788,455

Table 3.1.3.22 provides a summary of the billing determinants, by rate class, that are used to develop the proposed rates.

Table 3.1.3.22: Summary of Load Forecast

	2015 Board Approved	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Normalized Bridge	2021 Normalized Test
Actual kWh Purchases		1,243,499,330	1,257,831,314	1,212,201,216	1,270,822,507			
Predicted kWh Purchases with loss	1,268,921,954	1,251,167,407	1,277,012,253	1,215,759,325	1,255,906,064	1,245,662,788	1,290,405,695	1,335,220,170
% Difference		0.62%	1.52%	0.29%	-1.17%			
By Class								
Residential								
Customers	47,067	47,555	48,401	49,606	50,324	50,792	51,360	51,935
kWh	407,092,792	415,749,082	433,305,471	410,629,996	451,047,288	434,759,152	443,039,730	454,614,210
GS<50								
Customers	4,385	4,434	4,457	4,505	4,479	4,475	4,508	4,541
kWh	121,037,129	126,134,211	130,328,462	127,052,978	131,255,411	126,741,416	128,878,403	131,961,769
GS>50								
Customers	862	781	759	808	790	800	805	810
kWh	669,981,013	645,074,725	642,382,592	624,101,455	635,816,201	642,357,413	665,567,632	694,096,099
kW	1,771,675	1,643,856	1,616,038	1,603,355	1,621,855	1,639,987	1,702,291	1,775,257
Sentinels								
Connections	303	334	311	324	312	296	290	283
kWh	259,459	223,690	213,770	210,489	220,524	218,186	218,400	218,613
kW	705	672	643	646	650	643	652	653
Streetlights								
Connections	12,989	12,897	13,177	13,308	13,310	13,360	13,496	13,634
kWh	7,477,962	6,899,420	4,950,220	4,481,099	4,494,762	4,379,324	4,423,985	4,469,101
kW	21,184	20,270	13,925	12,517	12,519	12,447	12,418	12,545
USL								
Connections	422	358	389	373	356	335	330	325
kWh	2,215,047	1,575,358	1,562,362	1,534,015	1,522,941	1,564,588	1,522,536	1,481,614
Total of Above								
Customer/Connections	66,028	66,360	67,493	68,924	69,571	70,058	70,789	71,529
kWh	1,208,063,402	1,195,656,487	1,212,742,877	1,168,010,031	1,224,357,127	1,210,020,079	1,243,650,684	1,286,841,405
kW from applicable classes	1,793,564	1,664,798	1,630,606	1,616,517	1,635,024	1,653,077	1,715,361	1,788,455

Rationale for Model Selected

In preparing the proposed load forecasts for the 2020 Bridge Year and 2021 Test Year, NPEI tested several different linear regression models. Table 3.1.3.23 shows the correlation between the explanatory variables that are used in the linear regression calculation in NPEI's proposed load forecasting model.

Table 3.1.3.23: Correlation of Explanatory Variables

Correlation	*Heating Degree Days*	*Cooling Degree Days*	*Ontario Real GDP Monthly %*	*Number of Days in Month*	*CDM kWh Saved in month*	*Spring Fall Flag*	*Population*
Heating Degree Days	1.00						
Cooling Degree Days	(0.70)	1.00					
Ontario Real GDP Monthly %	(0.04)	0.02	1.00				
Number of Days in Month	(0.19)	0.22	0.01	1.00			
CDM kWh Saved in month	(0.03)	0.03	0.97	0.01	1.00		
Spring Fall Flag	(0.06)	(0.40)	0.01	0.08	0.01	1.00	
Population	(0.04)	0.02	0.99	0.01	0.97	0.01	1.00

As shown in the table above, there is significant correlation between the following pairs of explanatory variables:

- Ontario Real GDP and Population
- Ontario Real GDP and CDM kWh Saved
- Population and CDM kWh Saved

NPEI tested various models involving dropping one or more of the explanatory variables with high correlation values, as summarized in Table 3.1.3.24 below.

Table 3.1.3.24: Summary of Linear Regression Models Tested

Weather Normalization Regression Model Version	Weather Normalized		Variables Included in Model							Regression Results		Additional Statistical Tests	
	2020 Predicted Purchases (GWh)	2021 Predicted Purchases (GWh)	HDD	CDD	GDP	Days in Month	CDM kWh	Spring Fall Flag	Population	Adjusted R-Square	Statistical Significance of Variables	MAPE	Durbin-Watson
Version 1 - Proposed	1,290.4	1,335.2	✔	✔	✔	✔	✔	✔	✔	0.940	All	2.01%	1.82
Version 2	1,286.2	1,323.7	✔	✔	✔	✔	✔	✔		0.937	All	2.08%	1.74
Version 3	1,232.6	1,284.2	✔	✔		✔	✔	✔	✔	0.931	All	2.59%	0.98
Version 4	1,277.0	1,277.7	✔	✔	✔	✔		✔		0.889	Intercept not significant	2.79%	0.99
Version 5	1,276.6	1,278.1	✔	✔		✔		✔	✔	0.888	All	2.79%	0.98
Version 6	1,275.5	1,274.6	✔	✔	✔	✔		✔	✔	0.889	Several not significant	2.79%	1.00

As indicated in Table 3.1.3.24 above, of the six models tested, the model proposed by NPEI has the highest adjusted R-squared value and the lowest Mean Absolute Percentage Error (MAPE), with all explanatory variables considered statistically significant. For the purposes of these regression analyses, NPEI defined an explanatory variable as being statistically significant if the absolute value of the t Stat is greater than 2.0 and the P-value is less than 0.05.

Historical Weather Normalized Actuals

Section 2.3.2 of the Filing Requirements requires a comparison of historical weather-normalized actuals over time.

NPEI employed the following methodology to calculate historical weather normalized actual consumption for 2015-2019:

1) The difference between 10-year average annual HDD and actual annual HDD for each year is multiplied by the HDD coefficient from the load forecasting regression model in order to determine the consumption adjustment required each year to weather normalize for HDD.
2) The difference between 10-year average annual CDD and actual annual CDD for each year is multiplied by the CDD coefficient from the load forecasting regression model in order to determine the consumption adjustment required each year to weather normalize for CDD.
3) The weather normalization adjustments calculated in 1) and 2) are added to the actual annual kWh purchased to obtain weather normalized purchased kWh.
4) The weather normalized purchased kWh calculated in 3) is divided by the actual distribution loss factor each year, to obtain weather normalized billed consumption.
5) The weather normalized bill consumption is compared to actual billed consumption each year to determine the adjustment required for weather normalization.
6) The weather normalization adjustment from 5) is applied to the weather sensitive rate classes, based on the same weather sensitivity percentages that are used in the load forecasting model.

Details of the process described above are shown in Table 3.1.3.25 below:

Table 3.1.3.25: Calculation of Weather Normalized Actual Consumption

Calculation of Weather Normalized Actual	2015	2016	2017	2018	2019
Actual Purchased kWh	1,243,499,330	1,257,831,314	1,212,201,216	1,270,822,507	1,245,662,788
Actual HDD	3,454	3,068	3,127	3,413	3,514
10 Year Average HDD	3,314	3,314	3,314	3,314	3,314
Difference	(140)	246	187	(99)	(200)
HDD Regression Coefficient	24,552	24,552	24,552	24,552	24,552
Adjustment to Weather Normalize HDD	(3,439,212)	6,044,425	4,594,356	(2,441,154)	(4,909,905)
Actual CDD	341	563	354	519	350
10 Year Average CDD	414	414	414	414	414
Difference	73	(150)	60	(105)	64
CDD Regression Coefficient	192,796	192,796	192,796	192,796	192,796
Adjustment to Weather Normalize CDD	14,104,494	(28,842,485)	11,596,536	(20,320,889)	12,387,001
Weather Normalized Purchased kWh	1,254,164,612	1,235,033,255	1,228,392,108	1,248,060,464	1,253,139,884
Distribution Loss Factor	1.040	1.037	1.038	1.038	1.038
Weather Normalized Billed kWh	**1,205,911,429**	**1,190,762,040**	**1,183,610,679**	**1,202,427,338**	**1,207,321,038**
Actual Billed kWh	1,195,394,887	1,212,742,877	1,168,010,031	1,224,357,127	1,210,020,079
Billed Adjustment for Weather Normalization	10,516,542	(21,980,836)	15,600,648	(21,929,789)	(2,699,041)
Allocation By Rate Class:					
Residential	3,828,204	(8,201,097)	5,727,921	(8,425,949)	(999,587)
GS < 50 kW	1,161,440	(2,466,704)	1,772,275	(2,451,963)	(291,401)
GS > 50 kW	5,526,898	(11,313,036)	8,100,451	(11,051,876)	(1,374,220)

The weather normalization adjustment for each rate class is then added to the actual billed consumption. The resulting weather normalized actual consumption, for 2015-2019, is shown in Table 3.1.3.26 below for the three weather sensitive rate classes (Residential, General Service < 50 kW and General Service > 50 kW).

Table 3.1.3.26: Weather Normalized Actual Consumption

Year	Residential	GS<50	GS>50
2015 Board Approved	407,092,792	121,037,129	669,981,013
2015 Actual	419,577,286	127,295,651	650,601,623
2016 Actual	425,104,375	127,861,758	631,069,556
2017 Actual	416,357,918	128,825,253	632,201,906
2018 Actual	442,621,339	128,803,448	624,764,325
2019 Actual	433,759,565	126,450,015	640,983,194

The resulting weather normalized actual consumption per customer is given in Table 3.1.3.27 below:

Table 3.1.3.27: Weather Normalized Actual Consumption per Customer

Year	Residential	GS<50	GS>50
2015 Board Approved	8,732	28,218	786,781
2015 Actual	8,823	28,709	833,037
2016 Actual	8,783	28,688	831,449
2017 Actual	8,393	28,596	782,428
2018 Actual	8,795	28,757	790,841
2019 Actual	8,540	28,257	801,229

For the GS>50 kW class, the weather normalized actual demand is determined by applying the actual kW to kWh ratio for each year to the weather normalized actual consumption. The resulting weather normalized demand and weather normalized demand per customer are provided below.

Table 3.1.3.28: Weather Normalized Demand

Year	GS>50
2015 Board Approved	1,771,675
2015 Actual	1,657,940
2016 Actual	1,587,578
2017 Actual	1,624,165
2018 Actual	1,593,664
2019 Actual	1,636,478

Table 3.1.3.29: Weather Normalized Demand per Customer

Year	GS>50
2015 Board Approved	2,055
2015 Actual	2,123
2016 Actual	2,092
2017 Actual	2,010
2018 Actual	2,017
2019 Actual	2,046

CDM ADJUSTMENT

3.1.4 CDM Adjustment

On March 20, 2019, the Minister of Energy, Northern Development and Mines issued a directive to the IESO that concluded the Conservation First Framework.

The OEB's *Addendum to Filing Requirements for Electricity Distribution Rate Applications – 2020 Rate Applications*, issued July 15, 2019, provides the following guidance on CDM adjustments to the load forecast:

"As distributors are no longer working towards the former 2015-2020 CDM targets, for 2019 and 2020 activity only, CDM projects that are subject to a contractual agreement entered into between the distributor and a customer by April 30, 2019 under a former CFF program should be included in the proposed CDM manual adjustment to the load forecast for 2019 and 2020. Distributors should provide relevant documentation to support the manual adjustments for 2019 and 2020 CDM projects, including the corresponding CFF program, project timelines and projected savings. Distributors should not include any savings at this time from new projects that begin on or after May 1, 2019 that are under the IESO's interim framework (May 1, 2019 to December 31, 2020).

For 2020 rate applications, distributors should ensure that the sum of the results for the 2015 to 2018 program years is consistent with the results provided by the IESO. Distributors should rely on the monthly Participation and Cost Reports made available by the IESO for 2018 CDM savings."

As discussed above in Exhibit 3, Tab 1, Schedule 3, the CDM results that have been included in NPEI's load forecasting model explanatory variable up to 2018 are based on results issued by the IESO, most recently in the final monthly Participation and Cost Report, issued in April 2019.

For 2019, NPEI has incorporated CDM results from projects that that were entered into

prior to April 30, 2019 and have been completed during 2019 as part of its CDM explanatory variable.

For 2020 and 2021, the CDM explanatory variable includes persistence results from previous years (i.e. persistence of 2006 to 2019 CDM activities into 2020 and 2021). NPEI has not incorporated any manual CDM adjustments for the 2020 Bridge Year or the 2021 Test Year.

NPEI has completed the OEB's Appendix 2-I, which has been filed in live Excel format, and is also included as Appendix 3-2 to this Exhibit.

CDM SAVINGS FOR LRAMVA

3.1.5 CDM Savings for LRAMVA

As discussed above in Exhibit 3.1.3, for 2020 and 2021, the CDM explanatory variable includes persistence results from previous years (i.e. persistence of 2006 to 2019 CDM activities into 2020 and 2021). NPEI has not incorporated any manual CDM adjustments for the 2020 Bridge Year or the 2021 Test Year. Further, NPEI understands that no further verification of results for 2018 or 2019 will be issued by the IESO.

Therefore, in NPEI's view, the level of CDM activity that is embedded in the proposed 2021 Test Year load forecast through the explanatory variable is not eligible for future LRAMVA adjustments.

In this current application, NPEI is requesting approval for LRAMVA recovery relating to the years 2016 – 2018. Further details are provided in Exhibit 9.

PASS-THROUGH CHARGES

3.1.6 Pass-Through Charges

This schedule provides details NPEI's estimated power supply expenses for the 2020 Bridge Year and 2021 Test Year.

The pass through charges include the commodity, retail transmission charges, wholesale market charges, capacity based recovery, rural rate protection, smart metering entity charge and low voltage charges. Details of each of these charges follow below.

Commodity Price

"The commodity price estimate used to calculate the CoP must be determined by the split between RPP and non-RPP Class A and Class B customers based on actual data and using the most current RPP (TOU) prices established for the May 1, 2019 to October 31, 2019 period. The calculation must fully consider all other impacts resulting from the Ontario Fair Hydro Plan Act, 2017 (Fair Hydro Plan) as described in the OEB report Regulated Price Plan and Global Adjustment Modifier for the Period May 1, 2019 to October 31, 2019. Distributors must complete Appendix 2-Z – Commodity Expense.
In consideration of the impact of the Fair Hydro Plan, Non-RPP actual data must be split between Class A and Class B customers (RPP and Non-RPP). Non-RPP Class B consumption data must further be split between customers eligible for the Global Adjustment (GA) modifier vs. non-eligible. The GA modifier must be applied to eligible customers and a weighted average commodity price must be determined by the split between RPP, eligible non-RPP and non-eligible non-RPP customers. For customer classes that include Class A customers, a distributor must incorporate Class A GA cost by completing the relevant section in Appendix 2-Z."

NPEI notes that the GA Modifier was discontinued as of November 1, 2019. In Step 2) Commodity Expense of Appendix 2-Z, Forecast Commodity Prices, NPEI has utilized the rates in *Table ES-1 Average RPP Supply Cost Summary* from the *Regulated Price Plan Price Report November 1, 2019 to October 31, 2020,* issued October 22, 2019, as shown in Table 3.1.6.1 below:

Table 3.1.6.1: Commodity Prices

Per MWh	Non-RPP	RPP
HOEP	20.09	20.09
Global Adjustment	106.94	106.94
Adjustments		1.00
Total	127.03	128.03

In accordance with Appendix 2-Z, NPEI has calculated an average Class A GA per kWh of $.0684, based on actual 2018 data, as follows:

Table 3.1.6.2: Average Class A GA Charge per kWh

2018 Class A kWh with Losses	2018 Total Class A GA Charge from IESO	Class A GA per kWh
162,074,517	11,085,749	0.06840

Utilizing the rates set out above in Tables 3.1.6.1 and 3.1.6.2, and Appendix 2-Z, NPEI has calculated forecast commodity expense of $154,494,701 for the 2020 Bridge Year and $162,374,642 for the 2021 Test Year.

NPEI has completed the OEB's Appendix 2-Z, which has been filed in live Excel format, and is also included as Appendix 3-3 to this Exhibit.

Retail Transmission Service ("RTSR") Rates

In forecasting pass through charges, NPEI has utilized proposed RTSR rates for Network and Connection Charges as described in Exhibit 8. The proposed RTSR rates were determined using the 2020 RTSR Workform issued by the Board on July 9, 2019, modified by OEB Staff to be utilized for 2021 Rates.

Wholesale Market Service ("WMS") Rate

NPEI proposes to maintain the current WMS rate of $0.0030 per kWh, as described in Exhibit 8, subject to any update in the WMS rate issued by the Board.

Rural or Remote Electricity Rate Protection ("RRRP") Charge

NPEI proposes to maintain the current RRRP rate of $0.0005 per kWh, as described in Exhibit 8, subject to any update in the RRRP rate issued by the Board.

Capacity Based Recovery ("CBR") Charge

NPEI proposes to maintain the current Class B CBR rate of $0.0004 per kWh, as described in Exhibit 8, subject to any update in the CBR rate issued by the Board.

To forecast Class A CBR charges, NPEI has calculated the average Class A CBR charger per kWh, using 2018 actual data, as follows:

Table 3.1.6.3: Average Class A CBR Charge per kWh

2018 Class A kWh with Losses	2018 Total Class A CBR Charge from IESO	Class A CBR per kWh
162,074,517	46,839	0.0003

Smart Metering Entity Charge

The Smart Meter Entity Charge, at a cost of $0.57 cents per month, is charged to Residential and GS < 50 kW customers, and is effective until December 31, 2022.

Low Voltage Charges

NPEI's projected 2021 Test Year low voltage charges are described in Exhibit 8.3.2.

Ontario Electricity Rebate ("OER")

Following the methodology prescribed in Appendix 2-Z, the OER rebate of 31.8% has been applied to all cost of power amounts relating to forecast RPP consumption.

The tables below provide a summary of total cost of power pass through charges for 2020 and 2021.

Table 3.1.6.4: 2020 Cost of Power Forecast

		2020 Bridge Year	RPP		2020 Bridge Year	non-RPP		Total
Electricity Commodity	Units	Volume	Rate	$	Volume	Rate	$	$
Class per Load Forecast				-				
Residential	kWh	447,514,877		57,295,330	16,746,455		336,436	
General Service < 50 kW	kWh	110,995,393		14,210,740	24,056,286		483,291	
General Service 50 to 4999 kW	kWh*	26,512,021		3,394,334	670,936,301		13,479,110	
Unmetered Scattered Load	kWh*	1,595,465		204,267	0		-	
Sentinel Lighting	kWh	228,861		29,301	0		-	
Street Lighting	kWh	0		-	4,635,893		93,135	
	kWh	0		-	0		-	
SUB-TOTAL		586,846,617		75,133,972	716,374,935		14,391,972	$ 89,525,945

Global Adjustment non-RPP	Units	Volume	Rate	$	Volume	Rate	$	Total
Class per Load Forecast								
Residential	kWh			0			1,790,866	
General Service < 50 kW	kWh			0			2,572,579	
General Service 50 to 4999 kW	kWh*			0			63,109,549	
Unmetered Scattered Load	kWh*			0			-	
Sentinel Lighting	kWh			0			-	
Street Lighting	kWh			0			495,762	
	kWh			0			-	
SUB-TOTAL		0		0			67,968,756	$ 67,968,756

Transmission - Network								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0074	3,311,610	16,746,455	0.0074	123,924	
General Service < 50 kW	kWh	110,995,393	0.0067	743,669	24,056,286	0.0067	161,177	
General Service 50 to 4999 kW	kW	64,709	2.7628	178,778	1,637,582	2.7628	4,524,312	
Unmetered Scattered Load	kWh	1,595,465	0.0067	10,690	0	0.0067	-	
Sentinel Lighting	kW	652	2.0455	1,334	0	2.0455	-	
Street Lighting	kW	-	2.0884	-	12,418	2.0884	25,934	
				-			-	
SUB-TOTAL				4,246,081			4,835,346	9,081,428

Transmission - Connection								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0054	2,416,580	16,746,455	0.0054	90,431	
General Service < 50 kW	kWh	110,995,393	0.0047	521,678	24,056,286	0.0047	113,065	
General Service 50 to 4999 kW	kW	64,709	1.9004	122,973	1,637,582	1.9004	3,112,061	
Unmetered Scattered Load	kWh	1,595,465	0.0047	7,499	0	0.0047	-	
Sentinel Lighting	kW	652	1.5881	1,036	0	1.5881	-	
Street Lighting	kW	-	1.46	-	12,418	1.46	18,130	
				-	0		-	
SUB-TOTAL				3,069,766			3,333,687	6,403,453

Wholesale Market Service								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0034	1,521,551	16,746,455	0.0034	56,938	
General Service < 50 kW	kWh	110,995,393	0.0034	377,384	24,056,286	0.0034	81,791	
General Service 50 to 4999 kW (Class B)	kWh	26,512,021	0.0034	90,141	446,749,116	0.0034	1,518,947	
Unmetered Scattered Load	kWh	1,595,465	0.0034	5,425	0	0.0034	-	
Sentinel Lighting	kWh	228,861	0.0034	778	0	0.0034	-	
Street Lighting	kWh	-	0.0034	-	4,635,893	0.0034	15,762	
General Service 50 to 4999 kW (Class A)	kWh			-	224,187,185	0.0037	827,025	
SUB-TOTAL				1,995,278			2,500,464	4,495,742

RRRP								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0005	223,757	16,746,455	0.0005	8,373	
General Service < 50 kW	kWh	110,995,393	0.0005	55,498	24,056,286	0.0005	12,028	
General Service 50 to 4999 kW	kWh	26,512,021	0.0005	13,256	670,936,301	0.0005	335,468	
Unmetered Scattered Load	kWh	1,595,465	0.0005	798	0	0.0005	-	
Sentinel Lighting	kWh	228,861	0.0005	114	0	0.0005	-	
Street Lighting	kWh	-	0.0005	-	4,635,893	0.0005	2,318	
	kWh	-	0.0005	-	0	0.0005	-	
SUB-TOTAL				293,423			358,187	651,611

Low Voltage - No TLF adjustment								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh**	427,058,763	0.0005	213,529	15,980,967	0.0005	7,990	
General Service < 50 kW	kWh**	105,921,741	0.0004	42,369	22,956,662	0.0004	9,183	
General Service 50 to 4999 kW	kW	64,709	0.1612	10,431	1,637,582	0.1612	263,978	
Unmetered Scattered Load	kWh**	1,522,536	0.0004	609	0	0.0004	-	
Sentinel Lighting	kW	652	0.1347	88	0	0.1347	-	
Street Lighting	kW	-	0.1239	-	12,418	0.1239	1,539	
				-			-	
SUB-TOTAL		534568401.2		267,026			282,690	549,716

Smart Meter Entity Charge								
Class per Load Forecast		Customers	Rate	$	Customers	Rate	$	Total
Residential		49,508	0.57	338,633	1,853	0.57	12,672.00	
General Service < 50 kW		3,705	0.57	25,341	803	0.57	5,492.20	
				-				
SUB-TOTAL				363,974			18,164	382,139
SUB- TOTAL				85,369,522			93,689,267	179,058,789
ORECA CREDIT	31.80%			(27,147,508)			0	(27,147,508)
TOTAL				**58,222,014**			**93,689,267**	**151,911,281**

***The ORRECA Credit of 31.8% will only apply to RPP proportion of the listed components. Impacts on distribution charges are excluded for the purpose of calculating the cost of power.

2020 Bridge Year - CoP	
4705 -Power Purchased	$ 89,525,945
4707- Global Adjustment	$ 67,968,756
4708-Charges-WMS	$ 5,147,353
4714-Charges-NW	$ 9,081,428
4716-Charges-CN	$ 6,403,453
4750-Charges-LV	$ 549,716
4751-IESO SME	$ 382,139
Misc A/R or A/P	$ (27,147,508)
TOTAL	**$ 151,911,281**

Table 3.1.6.5: 2021 Cost of Power Forecast

		2021 Test Year	RPP		2021 Test Year	non-RPP		Total
Electricity Commodity	Units	Volume	Rate	$	Volume	Rate	$	$
Class per Load Forecast				-				
Residential	kWh	456,715,993		58,473,349	17,090,770		343,354	
General Service < 50 kW	kWh	113,034,586		14,471,818	24,498,245		492,170	
General Service 50 to 4999 kW	kWh*	28,033,876		3,589,177	695,365,038		13,969,884	
Unmetered Scattered Load	kWh*	1,544,163		197,699	0		-	
Sentinel Lighting	kWh	227,843		29,171	0		-	
Street Lighting	kWh	0		-	4,657,774		93,575	
	kWh	0		-	0		-	
SUB-TOTAL		599,556,461		76,761,214	741,611,827		14,898,982	$ 91,660,195

Global Adjustment non-RPP	Units	Volume	Rate	$	Volume	Rate	$	Total
Class per Load Forecast								
Residential	kWh			0			1,827,687	
General Service < 50 kW	kWh			0			2,619,842	
General Service 50 to 4999 kW	kWh*			0			65,768,815	
Unmetered Scattered Load	kWh*			0			-	
Sentinel Lighting	kWh			0			-	
Street Lighting	kWh			0			498,102	
	kWh			0			-	
SUB-TOTAL		0		0			70,714,446	$ 70,714,446

Transmission - Network								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0072	3,288,355	17,090,770	0.0072	123,054	
General Service < 50 kW	kWh	113,034,586	0.0065	734,725	24,498,245	0.0065	159,239	
General Service 50 to 4999 kW	kW	68,797	2.6864	184,815	1,706,460	2.6864	4,584,235	
Unmetered Scattered Load	kWh	1,544,163	0.0065	10,037	0	0.0065	-	
Sentinel Lighting	kW	653	1.9889	1,299	0	1.9889	-	
Street Lighting	kW	-	2.0306	-	12,545	2.0306	25,473	
				-			-	
SUB-TOTAL				4,219,231			4,892,000	9,111,231

Transmission - Connection								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0052	2,374,923	17,090,770	0.0052	88,872	
General Service < 50 kW	kWh	113,034,586	0.0045	508,656	24,498,245	0.0045	110,242	
General Service 50 to 4999 kW	kW	68,797	1.8247	125,533	1,706,460	1.8247	3,113,778	
Unmetered Scattered Load	kWh	1,544,163	0.0045	6,949	0	0.0045	-	
Sentinel Lighting	kW	653	1.5248	996	0	1.5248	-	
Street Lighting	kW	-	1.4018	-	12,545	1.4018	17,585	
				-	0		-	
SUB-TOTAL				3,017,056			3,330,477	6,347,534

Wholesale Market Service								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0034	1,552,834	17,090,770	0.0034	58,109	
General Service < 50 kW	kWh	113,034,586	0.0034	384,318	24,498,245	0.0034	83,294	
General Service 50 to 4999 kW (Class B)	kWh	28,033,876	0.0034	95,315	472,393,622	0.0034	1,606,138	
Unmetered Scattered Load	kWh	1,544,163	0.0034	5,250	0	0.0034	-	
Sentinel Lighting	kWh	227,843	0.0034	775	0	0.0034	-	
Street Lighting	kWh	-	0.0034	-	4,657,774	0.0034	15,836	
General Service 50 to 4999 kW (Class A)	kWh			-	222,971,416	0.0037	822,540	
SUB-TOTAL				2,038,492			2,585,918	4,624,410

RRRP								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0005	228,358	17,090,770	0.0005	8,545	
General Service < 50 kW	kWh	113,034,586	0.0005	56,517	24,498,245	0.0005	12,249	
General Service 50 to 4999 kW	kWh	28,033,876	0.0005	14,017	695,365,038	0.0005	347,683	
Unmetered Scattered Load	kWh	1,544,163	0.0005	772	0	0.0005	-	
Sentinel Lighting	kWh	227,843	0.0005	114	0	0.0005	-	
Street Lighting	kWh	-	0.0005	-	4,657,774	0.0005	2,329	
	kWh	-	0.0005	-	0	0.0005	-	
SUB-TOTAL				299,778			370,806	670,584

Low Voltage - No TLF adjustment								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh**	438,215,738	0.0014	613,502	16,398,472	0.0014	22,958	
General Service < 50 kW	kWh**	108,455,879	0.0012	130,147	23,505,891	0.0012	28,207	
General Service 50 to 4999 kW	kW	68,797	0.4776	32,857	1,706,460	0.4776	815,006	
Unmetered Scattered Load	kWh**	1,481,614	0.0012	1,778	0	0.0012	-	
Sentinel Lighting	kW	653	0.3991	261	0	0.3991	-	
Street Lighting	kW	-	0.3669	-	12,545	0.3669	4,603	
				-			-	
SUB-TOTAL		548,222,679		778,545			870,773	1,649,318

Smart Meter Entity Charge								
Class per Load Forecast		Customers	Rate	$	Customers	Rate	$	Total
Residential		50,062	0.57	342,422	1,873	0.57	12,813.76	
General Service < 50 kW		3,732	0.57	25,528	809	0.57	5,532.69	
				-				
SUB-TOTAL				367,949			18,346	386,296
SUB- TOTAL				87,482,265			97,681,749	185,164,014
ORECA CREDIT	31.80%			(27,819,360)			0	(27,819,360)
TOTAL				**59,662,905**			**97,681,749**	**157,344,654**

***The ORRECA Credit of 31.8% will only apply to RPP proportion of the listed components. Impacts on distribution charges are excluded for the purpose of calculating the cost of power.

2020 Test Year - CoP	
4705 -Power Purchased	$ 91,660,195
4707- Global Adjustment	$ 70,714,446
4708-Charges-WMS	$ 5,294,994
4714-Charges-NW	$ 9,111,231
4716-Charges-CN	$ 6,347,534
4750-Charges-LV	$ 1,649,318
4751-IESO SME	$ 386,296
Misc A/R or A/P	$ (27,819,360)
TOTAL	**$ 157,344,654**

1

2

Exhibit 3: Operating Revenue

Tab 2 (of 3): Accuracy of Load Forecast and Variance Analysis

VARIANCE ANALYSIS OF LOAD FORECAST

3.2.1 Variance Analysis of Load Forecast

Provided below is the analysis of the historical load forecast and revenues covering Board approved 2015, historical actual 2015 to 2019 and the forecasted 2020 Bridge Year and 2021 Test Years. The analysis has been completed on the following basis:

- Distribution Revenues;
- Billing Determinants (Customer/Connection counts, billed kWh and billed kW);
- Weather-normalized average historical actual consumption per customer;
- Distribution Revenue calculated on basis of existing and proposed rates.

NPEI has completed the OEB's Appendix 2-IB, which is included as Appendix 3-4 to this Exhibit.

NPEI has six OEB-approved rate classes: Residential, GS < 50 kW, GS > 50 kW, Sentinel Lighting, Street Lighting and Unmetered Scattered Load.

On April 2, 2015, the OEB released its Board Policy: *A New Distribution Rate Design for Residential Electricity Customers (EB-2014-0210)*, which stated that electricity distributors will transition to a fully fixed monthly distribution service charge for residential customers. The transition began in 2016, and in most cases was to be implemented over a period of four years.

The OEB approved NPEI's transition to full fixed monthly distribution service charges for Residential customers over a period of 4 years, as approved in NPEI's 2016 (EB-2015-0090), 2017 (EB-2016-0094), 2018 (EB-2017-0063) and 2019 (EB-2018-0054) IRM Rate Applications. As a result, NPEI's currently bills Residential customers using a fully fixed distribution monthly service charge, and no volumetric charge. Each of the other five rate classes are billed using the OEB approved monthly service charge (per customer or connection) and distribution volumetric charge (per kWh or per kW). The GS < 50 kW

and Unmetered Scattered Load classes are billed distribution volumetric revenue on the basis of kWh. The GS > 50 kW, Sentinel Lighting and Street Lighting rate classes are billed distribution volumetric revenue on the basis of kW.

The OEB's *Handbook for Utility Rate Applications,* issued October 13, 2016, sets out the rate setting options that are available to distributors under the *Renewed Regulatory Framework for Electricity:*

"*To support the move to an outcomes based approach, the OEB recognized the need to provide flexibility in rate setting options to give utilities the necessary tools to develop business plans that meet their needs. The RRFE established three incentive rate-setting (IR) methodologies for electricity distributors: Price Cap IR (previously known as 4th Generation IR), Custom IR, and the annual IR Index."*

NPEI's annual rate applications for 2016-2020 were all filed on a Price Cap IR basis.

The *Handbook for Utility Rate Applications* states:

"Price Cap IR: Under this methodology, base rates are set through a cost of service process for the first year and the rates for the following four years are adjusted using a formula specific to each year. For electricity distributors, the formula includes an industry-specific inflation factor and two factors for productivity. One productivity factor is a fixed amount for industry-wide productivity and the other is a stretch factor, which is set each year based on the level of productivity the electricity distributor has achieved."

Table 3.2.1.1 below shows NPEI's Board-approved Price Cap Indices for the years 2016-2020.

Table 3.2.1.1: NPEI's 2016-2020 Price Cap Indices

Rate Year	OEB Case Number	Effective Date	Inflation Factor	Productivity Factor	NPEI's Stretch Factor	NPEI's Approved Price Cap Index
2016	EB-2015-0090	May 1, 2016	2.10%	0.00%	0.30%	1.80%
2017	EB-2016-0094	May 1, 2017	1.90%	0.00%	0.30%	1.60%
2018	EB-2017-0063	May 1, 2018	1.20%	0.00%	0.30%	0.90%
2019	EB-2018-0054	May 1, 2019	1.50%	0.00%	0.30%	1.20%
2020	EB-2019-0054	May 1, 2020	2.00%	0.00%	0.30%	1.70%

Table 3.2.1.2: 2015 Actual vs 2015 Board Approved

Rate Class	2015 Actual					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	47,555	415,749,082		10,062,702	7,309,679	17,372,381
GS < 50 kW	4,434	126,134,211		2,028,931	1,731,081	3,760,012
GS > 50 kW	781	645,074,725	1,643,856	1,284,575	5,664,046	6,948,621
Umetered Scattered Load	358	1,575,358		84,004	21,563	105,567
Sentinel Lighting	334	223,690	673	59,985	12,787	72,772
Street Lighting	12,897	6,899,420	20,270	182,668	91,740	274,409
Total	**66,360**	**1,195,656,487**	**1,664,799**	**13,702,865**	**14,830,896**	**28,533,760**
Rate Class	**2015 Board Approved**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	47,067	407,092,792		10,307,808	7,448,114	17,755,922
GS < 50 kW	4,385	121,037,129		1,967,303	1,652,338	3,619,641
GS > 50 kW	862	669,981,013	1,771,675	1,050,977	5,453,733	6,504,710
Umetered Scattered Load	422	2,215,047		97,645	29,995	127,640
Sentinel Lighting	303	259,459	705	61,058	14,769	75,827
Street Lighting	12,989	7,477,962	21,184	186,061	98,196	284,257
Total	**66,028**	**1,208,063,402**	**1,793,564**	**13,670,852**	**14,697,145**	**28,367,997**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	488	8,656,290	-	(245,106)	(138,435)	(383,541)
GS < 50 kW	49	5,097,082	-	61,628	78,743	140,371
GS > 50 kW	(81)	(24,906,288)	(127,819)	233,598	210,313	443,911
Umetered Scattered Load	(64)	(639,689)	-	(13,641)	(8,432)	(22,073)
Sentinel Lighting	31	(35,769)	(32)	(1,073)	(1,982)	(3,055)
Street Lighting	(92)	(578,542)	(914)	(3,393)	(6,456)	(9,848)
Total	**332**	**(12,406,915)**	**(128,765)**	**32,013**	**133,751**	**165,763**
Percent Variance	**0.5%**	**-1.0%**	**-7.2%**	**0.2%**	**0.9%**	**0.6%**

The total customer/connection counts for 2015 Actual was 0.5% higher than 2015 Board Approved, mostly in Residential customers. For the GS>50 kW class, the 2015 Actual customer count, kWh consumption and kW demand were all lower than 2015 Board Approved, partially offset by higher 2015 actual customer counts and kWh consumption in the GS<50 kW class due to some rate reclassification. The total 2015 Actual kWh consumption was 12,406,915 kWh (1.0%) lower than 2015 Board Approved.

Table 3.2.1.3 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between 2015 Actual and 2015 Board Approved, based on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.3: 2015 Actual vs. 2015 Board Approved - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2015 Actual	3,453.8	340.6	
2015 Board Approved	3,375.3	395.0	
Variance (Degree Days)	78.5	(54.4)	
Coefficient from Regression Analysis	24,438.6	203,082.5	
Estimated Variance (purchased kWh)	1,918,453	(11,051,072)	(9,132,619)
Distribution Loss Factor	1.040	1.040	1.040
Estimated Variance (Billed kWh)	1,844,642	(10,625,889)	(8,781,248)

Table 3.2.1.4 below shows NPEI's OEB-approved 2014 and 2015 distribution rates.

Table 3.2.1.4: 2014 and 2015 Distribution Rates

Rate Class	2014 Monthly Service Charge	2014 Distribution Volumetric Rate	2015 Monthly Service Charge	2015 Distribution Volumetric Rate
Residential	16.06	0.0161	18.43	0.0185
GS < 50 kW	37.79	0.0138	37.76	0.0138
GS > 50 kW	179.58	4.2400	102.31	3.3629
Umetered Scattered Load	19.53	0.0137	19.53	0.0137
Sentinel Lighting	12.87	16.0553	16.95	21.1488
Street Lighting	1.15	4.4657	1.21	4.6966

Although the 2015 Actual Residential customer counts and kWh consumption were both higher than 2015 Board Approved, the 2015 Actual revenue for the Residential class was $383,541 (2.2%) lower than 2015 Board Approved. This is due to the fact that NPEI's OEB-approved 2015 rates became effective June 1, 2015. Therefore, NPEI's

2015 Actual revenue consists of 5 months at 2014 rates, and 7 months at 2015 rates. For the Residential class, NPEI's 2014 distribution rates were lower than the 2015 rates, resulting in lower 2015 Actual revenue compared to 2015 Board Approved.

For the GS>50 kW class, although the 2015 Actual customer counts, kWh consumption and kW demand were all lower than 2015 Board Approved, the 2015 Actual revenue was $443,911 (6.8%) higher than 2015 Board Approved. This is due to the fact that NPEI's OEB-approved 2015 rates became effective June 1, 2015. Therefore, NPEI's 2015 Actual revenue consists of 5 months at 2014 rates, and 7 months at 2015 rates. For the GS>50 kW class, NPEI's 2014 distribution rates were higher than the 2015 rates, resulting in higher 2015 Actual revenue compared to 2015 Board Approved.

For the GS<50 kW class, 2015 Actual customer counts and kWh consumption were both higher than 2015 Board Approved, resulting in 2015 Actual revenue for the GS<50 kW class that was $140,371 (3.9%) higher than 2015 Board Approved. NPEI's distribution rates for the GS<50 kW class did not change significantly between 2014 and 2015.

NPEI's total 2015 Actual distribution revenue was $165,763 (0.6%) higher than 2015 Board Approved.

Table 3.2.1.5: 2016 Actual vs 2015 Actual

Rate Class	2016 Actual					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	48,401	433,305,471		11,864,530	6,541,410	18,405,941
GS < 50 kW	4,457	130,328,462		2,026,988	1,789,931	3,816,919
GS > 50 kW	759	642,382,592	1,616,038	952,236	4,998,013	5,950,249
Umetered Scattered Load	389	1,562,362		91,375	21,478	112,853
Sentinel Lighting	311	213,770	645	63,471	13,698	77,169
Street Lighting	13,177	4,950,220	13,925	191,329	65,571	256,900
Total	**67,493**	**1,212,742,877**	**1,630,608**	**15,189,929**	**13,430,101**	**28,620,030**
Rate Class	**2015 Actual**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	47,555	415,749,082	-	10,062,702	7,309,679	17,372,381
GS < 50 kW	4,434	126,134,211	-	2,028,931	1,731,081	3,760,012
GS > 50 kW	781	645,074,725	1,643,856	1,284,575	5,664,046	6,948,621
Umetered Scattered Load	358	1,575,358	-	84,004	21,563	105,567
Sentinel Lighting	334	223,690	673	59,985	12,787	72,772
Street Lighting	12,897	6,899,420	20,270	182,668	91,740	274,409
Total	**66,360**	**1,195,656,487**	**1,664,799**	**13,702,865**	**14,830,896**	**28,533,760**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	846	17,556,390	-	1,801,829	(768,269)	1,033,560
GS < 50 kW	23	4,194,250	-	(1,943)	58,850	56,907
GS > 50 kW	(22)	(2,692,133)	(27,818)	(332,339)	(666,033)	(998,371)
Umetered Scattered Load	30	(12,996)	-	7,370	(85)	7,285
Sentinel Lighting	(23)	(9,921)	(28)	3,486	911	4,397
Street Lighting	279	(1,949,201)	(6,345)	8,661	(26,170)	(17,509)
Total	**1,133**	**17,086,390**	**(34,191)**	**1,487,064**	**(1,400,795)**	**86,269**
Percent Variance	**1.7%**	**1.4%**	**-2.1%**	**10.9%**	**-9.4%**	**0.3%**

NPEI's total distribution revenue for 2016 Actual is $86,269 (0.3%) higher than 2015 Actual.

As shown in Table 3.2.1.1 above, the price cap index approved by the Board in NPEI's 2016 IRM Rate Application (EB-2015-0090) was 1.80%.

The total customer/connection counts for 2016 Actual was 1.7% higher than 2015 Actual, mostly in Residential customers and Street Lighting connections.

The total kWh consumption for 2016 Actual was 17,086,390 kWh (1.4%) higher than 2015 Actual, largely in the Residential and GS<50 kW classes, partially offset by decreases in the GS>50 kW and Street Lighting classes.

Table 3.2.1.6 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between 2016 Actual and 2015 Actual, based on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.6: 2016 Actual vs. 2015 Actual - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2016 Actual	3,067.5	563.4	
2015 Actual	3,453.8	340.6	
Variance (Degree Days)	(386.3)	222.8	
Coefficient from Regression Analysis	24,438.6	203,082.5	
Estimated Variance (purchased kWh)	(9,439,665)	45,238,317	35,798,652
Distribution Loss Factor	1.037	1.037	1.037
Estimated Variance (Billed kWh)	(9,101,289)	43,616,697	34,515,408

Total kW demand was 34,181 kW (2.1%) lower than 2015 Actual. The decrease in consumption and demand for the Street Lighting class is due to LED conversion projects implemented by the City of Niagara Falls, the Town of Lincoln and the Township of West Lincoln. These projects were completed during the period December 2015 to May 2016. Further details are provided in Exhibit 9.

In NPEI's 2016 IRM Rate Application (EB-2015-0090), the OEB approved the first stage of transition toward fully fixed Residential distribution rates. NPEI's fixed / variable split for the Residential class moved from 58.0 % Fixed / 42.0% Variable to 68.5% Fixed / 31.5% Variable. As shown in Table 3.2.1.5 above, 2016 Actual volumetric distribution revenue for the Residential class was $769,269 less than 2015 Actual, offset by an increase in fixed distribution revenue.

The total Actual 2016 distribution revenue for the Residential class is $1,033,560 (5.9%) higher than 2015 Actual. The total Actual 2016 distribution revenue for the GS>50 kW class is $998,371 (14.4%) lower than 2015 Actual. These variances are partly due to the fact that 2015 Actual revenue includes 5 months of 2014 rates as explained above.

Table 3.2.1.7: 2017 Actual vs 2016 Actual

Rate Class	2017 Actual					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	49,606	410,629,996		14,411,640	4,452,503	18,864,142
GS < 50 kW	4,505	127,052,978		2,078,042	1,790,913	3,868,955
GS > 50 kW	808	624,101,455	1,603,355	955,130	5,023,052	5,978,182
Umetered Scattered Load	373	1,534,015		88,695	21,220	109,915
Sentinel Lighting	324	210,489	646	67,064	13,915	80,979
Street Lighting	13,308	4,481,099	12,517	195,087	59,693	254,779
Total	**68,924**	**1,168,010,031**	**1,616,518**	**17,795,656**	**11,361,296**	**29,156,952**
Rate Class	**2016 Actual**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	48,401	433,305,471	-	11,864,530	6,541,410	18,405,941
GS < 50 kW	4,457	130,328,462	-	2,026,988	1,789,931	3,816,919
GS > 50 kW	759	642,382,592	1,616,038	952,236	4,998,013	5,950,249
Umetered Scattered Load	389	1,562,362	-	91,375	21,478	112,853
Sentinel Lighting	311	213,770	645	63,471	13,698	77,169
Street Lighting	13,177	4,950,220	13,925	191,329	65,571	256,900
Total	**67,493**	**1,212,742,877**	**1,630,608**	**15,189,929**	**13,430,101**	**28,620,030**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	1,205	(22,675,475)	-	2,547,109	(2,088,908)	458,202
GS < 50 kW	48	(3,275,484)	-	51,054	982	52,036
GS > 50 kW	49	(18,281,137)	(12,684)	2,894	25,039	27,933
Umetered Scattered Load	(16)	(28,348)	-	(2,680)	(258)	(2,938)
Sentinel Lighting	13	(3,281)	1	3,592	217	3,810
Street Lighting	131	(469,121)	(1,408)	3,758	(5,878)	(2,120)
Total	**1,431**	**(44,732,846)**	**(14,091)**	**2,605,727**	**(2,068,805)**	**536,922**
Percent Variance	**2.1%**	**-3.7%**	**-0.9%**	**17.2%**	**-15.4%**	**1.9%**

NPEI's total distribution revenue for 2017 Actual is $536,922 (1.9%) higher than 2016 Actual.

As shown in Table 3.2.1.1 above, the price cap index approved by the Board in NPEI's 2017 IRM Rate Application (EB-2016-0094) was 1.60%.

The total customer/connection counts for 2017 Actual was 2.1% higher than 2016 Actual, mostly in Residential customers and Street Lighting connections.

The total kWh consumption for 2017 Actual was 44,732,846 kWh (3.7%) lower than 2016 Actual, largely in the Residential and GS>50 kW classes.

Table 3.2.1.8 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between 2017 Actual and 2016 Actual, based on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.8: 2017 Actual vs. 2016 Actual - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2017 Actual	3,126.6	353.6	
2016 Actual	3,067.5	563.4	
Variance (Degree Days)	59.1	(209.8)	
Coefficient from Regression Analysis	24,438.6	203,082.5	
Estimated Variance (purchased kWh)	1,443,345	(42,596,552)	(41,153,207)
Distribution Loss Factor	1.038	1.038	1.038
Estimated Variance (Billed kWh)	1,390,728	(41,043,681)	(39,652,954)

Total kW demand was 14,091 kW (0.9%) lower than 2016 Actual. The decrease in consumption and demand for the Street Lighting class is due to LED conversion projects that were implemented in 2016. Further details are provided in Exhibit 9.

In NPEI's 2017 IRM Rate Application (EB-2016-0094), the OEB approved the second stage of transition toward fully fixed Residential distribution rates. NPEI's fixed / variable split for the Residential class moved from 68.7 % Fixed / 31.3% Variable to 79.1% Fixed / 20.9% Variable. As shown in Table 3.2.1.7 above, 2017 Actual volumetric distribution revenue for the Residential class was $2,088,908 less than 2016 Actual, offset by an increase in fixed distribution revenue.

Table 3.2.1.9: 2018 Actual vs 2017 Actual

Rate Class	2018 Actual					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	50,324	451,047,288		16,734,993	2,763,308	19,498,301
GS < 50 kW	4,479	131,255,411		2,070,628	1,843,559	3,914,187
GS > 50 kW	790	635,816,201	1,621,855	981,384	5,184,615	6,165,999
Umetered Scattered Load	356	1,522,941		85,750	21,454	107,203
Sentinel Lighting	356	220,524	650	65,265	14,157	79,423
Street Lighting	13,310	4,494,762	12,519	197,382	60,330	257,712
Total	**69,615**	**1,224,357,127**	**1,635,024**	**20,135,402**	**9,887,422**	**30,022,824**
Rate Class	**2017 Actual**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	49,606	410,629,996	-	14,411,640	4,452,503	18,864,142
GS < 50 kW	4,505	127,052,978	-	2,078,042	1,790,913	3,868,955
GS > 50 kW	808	624,101,455	1,603,355	955,130	5,023,052	5,978,182
Umetered Scattered Load	373	1,534,015	-	88,695	21,220	109,915
Sentinel Lighting	324	210,489	646	67,064	13,915	80,979
Street Lighting	13,308	4,481,099	12,517	195,087	59,693	254,779
Total	**68,924**	**1,168,010,031**	**1,616,518**	**17,795,656**	**11,361,296**	**29,156,952**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	718	40,417,292	-	2,323,353	(1,689,195)	634,158
GS < 50 kW	(26)	4,202,433	-	(7,413)	52,646	45,232
GS > 50 kW	(18)	11,714,746	18,501	26,254	161,563	187,817
Umetered Scattered Load	(17)	(11,073)	-	(2,946)	234	(2,712)
Sentinel Lighting	32	10,035	4	(1,798)	242	(1,556)
Street Lighting	2	13,663	2	2,295	637	2,932
Total	**692**	**56,347,096**	**18,507**	**2,339,745**	**(1,473,874)**	**865,872**
Percent Variance	**1.0%**	**4.8%**	**1.1%**	**13.1%**	**-13.0%**	**3.0%**

NPEI's total distribution revenue for 2018 Actual is $865,872 (3.0%) higher than 2017 Actual.

As shown in Table 3.2.1.1 above, the price cap index approved by the Board in NPEI's 2018 IRM Rate Application (EB-2017-0063) was 0.9%.

The total customer/connection counts for 2018 Actual was 1.0% higher than 2017 Actual, mostly in Residential customers.

The total kWh consumption for 2018 Actual was 56,347,096 kWh (4.8%) higher than 2017 Actual, largely in the Residential and GS>50 kW classes.

Table 3.2.1.10 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between 2018 Actual and 2017 Actual, based on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.10: 2018 Actual vs. 2017 Actual - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2018 Actual	3,413.2	519.2	
2017 Actual	3,126.6	353.6	
Variance (Degree Days)	286.6	165.6	
Coefficient from Regression Analysis	24,438.6	203,082.5	
Estimated Variance (purchased kWh)	7,002,889	33,620,306	40,623,196
Distribution Loss Factor	1.038	1.038	1.038
Estimated Variance (Billed kWh)	6,748,115	32,397,155	39,145,270

Total kW demand was 18,507 kW (1.1%) higher than 2017 Actual, almost entirely in the GS>50 kW class.

In NPEI's 2018 IRM Rate Application (EB-2017-0063), the OEB approved the third stage of transition toward fully fixed Residential distribution rates. NPEI's fixed / variable split for the Residential class moved from 79.1% Fixed / 20.9% Variable to 89.6% Fixed / 10.4% Variable. As shown in Table 3.2.1.9 above, 2018 Actual volumetric distribution revenue for the Residential class was $1,689,195 less than 2017 Actual, offset by an increase in fixed distribution revenue.

Table 3.2.1.11: 2019 Actual vs 2018 Actual

Rate Class	2019 Actual					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	50,792	434,759,152		19,180,725	584,955	19,765,680
GS < 50 kW	4,475	126,741,416		2,105,877	1,811,897	3,917,774
GS > 50 kW	800	642,357,413	1,639,987	1,019,283	5,301,429	6,320,712
Umetered Scattered Load	335	1,564,588		87,889	21,338	109,226
Sentinel Lighting	296	218,186	643	64,276	20,295	84,570
Street Lighting	13,360	4,379,324	12,447	198,747	60,692	259,440
Total	**70,058**	**1,210,020,079**	**1,653,077**	**22,656,796**	**7,800,606**	**30,457,402**
Rate Class	**2018 Actual**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	50,324	451,047,288	-	16,734,993	2,763,308	19,498,301
GS < 50 kW	4,479	131,255,411	-	2,070,628	1,843,559	3,914,187
GS > 50 kW	790	635,816,201	1,621,855	981,384	5,184,615	6,165,999
Umetered Scattered Load	356	1,522,941	-	85,750	21,454	107,203
Sentinel Lighting	356	220,524	650	65,265	14,157	79,423
Street Lighting	13,310	4,494,762	12,519	197,382	60,330	257,712
Total	**69,615**	**1,224,357,127**	**1,635,024**	**20,135,402**	**9,887,422**	**30,022,824**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	468	(16,288,136)	-	2,445,732	(2,178,353)	267,379
GS < 50 kW	(4)	(4,513,995)	-	35,249	(31,662)	3,587
GS > 50 kW	10	6,541,213	18,132	37,899	116,814	154,713
Umetered Scattered Load	(21)	41,647	-	2,139	(116)	2,023
Sentinel Lighting	(60)	(2,338)	(7)	(990)	6,137	5,148
Street Lighting	50	(115,438)	(72)	1,365	363	1,728
Total	**443**	**(14,337,048)**	**18,053**	**2,521,394**	**(2,086,816)**	**434,578**
Percent Variance	**0.6%**	**-1.2%**	**1.1%**	**12.5%**	**-21.1%**	**1.4%**

NPEI's total distribution revenue for 2019 Actual is $434,578 (1.4%) higher than 2018 Actual.

As shown in Table 3.2.1.1 above, the price cap index approved by the Board in NPEI's 2019 IRM Rate Application (EB-2018-0054) was 1.2%.

The total customer/connection counts for 2019 Actual was 0.6% higher than 2018 Actual, mostly in Residential customers.

The total kWh consumption for 2019 Actual was 14,337,048 kWh (1.2%) lower than 2018 Actual, largely in the Residential class.

Table 3.2.1.12 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between 2019 Actual and 2018 Actual, based

on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.12: 2019 Actual vs. 2018 Actual - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2019 Actual	3,513.7	349.5	
2018 Actual	3,413.2	519.2	
Variance (Degree Days)	100.5	(169.7)	
Coefficient from Regression Analysis	24,552.5	203,919.3	
Estimated Variance (purchased kWh)	2,468,751	(34,594,906)	(32,126,155)
Distribution Loss Factor	1.035	1.035	1.035
Estimated Variance (Billed kWh)	2,385,274	(33,425,137)	(31,039,863)

Table 3.2.1.13: 2020 Bridge vs 2019 Actual

Rate Class	2020 Bridge					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	51,360	443,039,730		20,579,101	-	20,579,101
GS < 50 kW	4,508	128,878,403		2,153,720	1,868,737	4,022,457
GS > 50 kW	805	665,567,632	1,702,291	1,045,077	5,598,210	6,643,287
Umetered Scattered Load	330	1,522,536		81,447	21,772	103,220
Sentinel Lighting	290	218,400	652	62,149	14,555	76,705
Street Lighting	13,496	4,423,985	12,418	204,063	61,303	265,367
Total	**70,789**	**1,243,650,684**	**1,715,361**	**24,125,559**	**7,564,578**	**31,690,137**
Rate Class	**2019 Actual**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	50,792	434,759,152	-	19,180,725	584,955	19,765,680
GS < 50 kW	4,475	126,741,416	-	2,105,877	1,811,897	3,917,774
GS > 50 kW	800	642,357,413	1,639,987	1,019,283	5,301,429	6,320,712
Umetered Scattered Load	335	1,564,588	-	87,889	21,338	109,226
Sentinel Lighting	296	218,186	643	64,276	20,295	84,570
Street Lighting	13,360	4,379,324	12,447	198,747	60,692	259,440
Total	**70,058**	**1,210,020,079**	**1,653,077**	**22,656,796**	**7,800,606**	**30,457,402**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	568	8,280,578	-	1,398,377	(584,955)	813,422
GS < 50 kW	33	2,136,987	-	47,843	56,840	104,683
GS > 50 kW	5	23,210,218	62,305	25,794	296,781	322,575
Umetered Scattered Load	(5)	(42,052)	-	(6,441)	435	(6,007)
Sentinel Lighting	(6)	213	9	(2,126)	(5,739)	(7,865)
Street Lighting	136	44,661	(30)	5,316	611	5,927
Total	**731**	**33,630,605**	**62,284**	**1,468,763**	**(236,028)**	**1,232,735**
Percent Variance	**1.0%**	**2.8%**	**3.8%**	**6.5%**	**-3.0%**	**4.0%**

NPEI's total distribution revenue for the 2020 Bridge Year is $1,232,735 (4.0%) higher than 2019 Actual.

As shown in Table 3.2.1.1 above, the price cap index approved by the Board in NPEI's 2020 IRM Rate Application (EB-2019-0054) was 1.7%.

The total customer/connection count for the 2020 Bridge Year is 1.0% higher than 2019 Actual, mostly in Residential and GS<50 kW customers.

The total kWh consumption for the 2020 Bridge Year is 33,630,605 kWh (2.8%) higher than 2019 Actual, largely in the GS>50 kW class.

Table 3.2.1.14 below provides an estimate of the total kWh consumption variance that may be attributable to weather differences between the 2020 Bridge Year and 2019

Actual, based on Heating Degree Days (HDD), Cooling Degree Days (CDD) and the regression coefficients of these explanatory variables from NPEI's load forecasting model.

Table 3.2.1.14: 2020 Bridge Year vs. 2019 Actual - Estimate of Consumption Variance Due to HDD and CDD

Item	HDD	CDD	Total
2020 Bridge Year	3,313.7	413.7	
2019 Actual	3,513.7	349.5	
Variance (Degree Days)	(200.0)	64.2	
Coefficient from Regression Analysis	24,552.5	203,919.3	
Estimated Variance (purchased kWh)	(4,909,905)	13,101,644	8,191,739
Distribution Loss Factor	1.035	1.035	1.035
Estimated Variance (Billed kWh)	(4,743,885)	12,658,634	7,914,749

Table 3.2.1.15: 2021 Test Year at Existing Rates vs 2020 Bridge

Rate Class	2021 Test Year at Existing Rates					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	51,935	454,614,210		20,983,817	-	20,983,817
GS < 50 kW	4,541	131,961,769		2,187,854	1,926,642	4,114,496
GS > 50 kW	810	694,096,099	1,775,257	1,060,646	5,868,240	6,928,887
Umetered Scattered Load	325	1,481,614		80,964	21,335	102,299
Sentinel Lighting	283	218,613	653	61,328	14,693	76,021
Street Lighting	13,634	4,469,101	12,545	206,144	62,450	268,595
Total	**71,529**	**1,286,841,405**	**1,788,455**	**24,580,754**	**7,893,360**	**32,474,115**
Rate Class	**2020 Bridge**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	51,360	443,039,730	-	20,579,101	-	20,579,101
GS < 50 kW	4,508	128,878,403	-	2,153,720	1,868,737	4,022,457
GS > 50 kW	805	665,567,632	1,702,291	1,045,077	5,598,210	6,643,287
Umetered Scattered Load	330	1,522,536	-	81,447	21,772	103,220
Sentinel Lighting	290	218,400	652	62,149	14,555	76,705
Street Lighting	13,496	4,423,985	12,418	204,063	61,303	265,367
Total	**70,789**	**1,243,650,684**	**1,715,361**	**24,125,559**	**7,564,578**	**31,690,137**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	575	11,574,480	-	404,716	-	404,716
GS < 50 kW	33	3,083,366	-	34,134	57,905	92,039
GS > 50 kW	5	28,528,467	72,966	15,569	270,030	285,599
Umetered Scattered Load	(5)	(40,922)	-	(483)	(437)	(920)
Sentinel Lighting	(6)	214	1	(821)	137	(684)
Street Lighting	138	45,116	127	2,081	1,147	3,228
Total	**740**	**43,190,721**	**73,093**	**455,196**	**328,782**	**783,978**
Percent Variance	**1.0%**	**3.5%**	**4.3%**	**1.9%**	**4.3%**	**2.5%**

NPEI's total distribution revenue for the 2021 Test Year at existing rates is $783,978 (2.5%) higher than the 2020 Bridge Year, due to increases in customers counts and forecast billed kW and kWh.

Table 3.2.1.16: 2021 Test Year at Proposed Rates vs 2020 Bridge

Rate Class	2021 Test Year at Proposed Rates					
	Customers/ Connections	kWh	kW	Fixed Dist. Rev. $	Volumetric Dist. Rev. $	Total Dist. Rev. $
Residential	51,935	454,614,210		22,531,540	-	22,531,540
GS < 50 kW	4,541	131,961,769		2,349,225	2,068,747	4,417,972
GS > 50 kW	810	694,096,099	1,775,257	1,684,550	5,892,839	7,577,389
Umetered Scattered Load	325	1,481,614		82,570	21,759	104,329
Sentinel Lighting	283	218,613	653	65,852	15,776	81,628
Street Lighting	13,634	4,469,101	12,545	120,097	36,383	156,479
Total	**71,529**	**1,286,841,405**	**1,788,455**	**26,833,835**	**8,035,503**	**34,869,338**
Rate Class	**2021 Test Year at Existing Rates**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	51,935	454,614,210	-	20,983,817	-	20,983,817
GS < 50 kW	4,541	131,961,769	-	2,187,854	1,926,642	4,114,496
GS > 50 kW	810	694,096,099	1,775,257	1,060,646	5,868,240	6,928,887
Umetered Scattered Load	325	1,481,614	-	80,964	21,335	102,299
Sentinel Lighting	283	218,613	653	61,328	14,693	76,021
Street Lighting	13,634	4,469,101	12,545	206,144	62,450	268,595
Total	**71,529**	**1,286,841,405**	**1,788,455**	**24,580,754**	**7,893,360**	**32,474,115**
Rate Class	**Variance**					
	Customers/ Connections	**kWh**	**kW**	**Fixed Dist. Rev. $**	**Volumetric Dist. Rev. $**	**Total Dist. Rev. $**
Residential	-	-	-	1,547,723	-	1,547,723
GS < 50 kW	-	-	-	161,372	142,105	303,477
GS > 50 kW	-	-	-	623,904	24,599	648,502
Umetered Scattered Load	-	-	-	1,606	423	2,030
Sentinel Lighting	-	-	-	4,523	1,084	5,607
Street Lighting	-	-	-	(86,048)	(26,068)	(112,116)
Total	**-**	**-**	**-**	**2,253,081**	**142,143**	**2,395,224**
Percent Variance	**0.0%**	**0.0%**	**0.0%**	**9.2%**	**1.8%**	**7.4%**

NPEI's total distribution revenue for the 2021 Test Year at proposed rates is $2,395,224 (7.4%) higher than the 2021 Test Year at existing rates, corresponding to NPEI's calculated Revenue Deficiency for the 2021 Test Year. Further details of the Revenue Deficiency are provided in Exhibit 6.

Exhibit 3: Operating Revenue

Tab 3 (of 3): Other Revenue

OVERVIEW OF OTHER REVENUE

3.3.1 Overview of Other Revenue

Other Revenues are revenues that are sourced from means other than distribution rates. Other Revenues for the 2021 Teat Year are deducted from NPEI's 2021 proposed Service Revenue Requirement to arrive at NPEI's 2021 proposed Base Revenue Requirement. Details on the derivation of revenue requirement are provided in Exhibit 6. Other Revenue includes:

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

Table 3.2.1.1 below provides a summary of NPEI's Other Revenue for 2015 Board Approved, 2015-2018 Actual, 2019 Actual, 2020 Bridge Year and 2021 Test Year.

Table 3.3.1.1: Summary of Other Revenue

Revenue Item	USoA Account	2015 Board Approved ($)	2015 Actual ($)	2016 Actual ($)	2017 Actual ($)	2018 Actual ($)	2019 Actual ($)	2020 Bridge Year ($)	2021 Test Year ($)
MicroFIT Monthly Service Charge	4235	21,060	24,477	27,730	28,471	57,278	57,689	57,914	58,028
SSS Administration Charges	4086	146,703	149,441	149,419	156,050	158,072	160,440	165,072	166,911
Miscellaneous Service Revenues	4235	803,285	814,886	927,291	750,275	682,382	660,922	517,876	857,068
Late Payment Charge	4225	361,000	424,468	429,277	372,954	372,405	336,173	340,000	341,000
Retailer Revenues	4082/4084	45,471	39,219	35,017	30,621	26,646	39,736	44,041	39,927
Other Utility Operating Income	4215	44,000	57,932	41,442	29,141	28,867	19,294	24,500	25,500
Gain/Loss on Disposition/Retirements	4355/4360	-	29,600	(4,874)	(94,957)	(96,090)	(74,145)	-	-
Miscellaneous Non-Operating Income	4390	81,003	103,532	95,183	63,464	38,875	34,166	13,589	17,315
Revenue from Non-Utility Operations	4375		3,100,130	4,591,717	3,314,051	2,739,667	1,604,938	237,786	-
Expenses from Non-Utility Operations	4380		(2,821,818)	(4,607,804)	(3,320,281)	(2,302,137)	(1,604,938)	(237,786)	-
Interest and Dividend Income	4405	100,000	105,631	108,114	225,113	260,255	225,055	216,000	200,000
Amortization of Capital Contributions		903,332	613,263	738,438	824,191	894,004	1,002,764	1,126,809	1,211,588
Storm Aid for Other Utilities						394,229	100,295		
IT Services							41,144	40,200	54,000
Total Other Revenue		2,505,854	2,640,762	2,530,951	2,379,092	3,254,454	2,603,534	2,546,001	2,971,337

NPEI has completed the OEB's Appendix 2-H, which is included as Appendix 3-5 to this Exhibit.

NPEI notes that there have been several recent regulatory changes that impact Other Revenue:

Wireline Pole Attachment Charges

On March 22, 2018, the OEB issued the *Report on Wireline Pole Attachment Charges*, which set the province-wide wireline pole attachment charge at $28.09 per pole per year effective September 1, 2018 to December 31, 2018, increasing to $43.63 per pole per year effective January 1, 2019. The pole attachment charge will be adjusted annually based on the OEB's inflation factor commencing on January 1, 2020.

The province-wide pole attachment charge is applicable to all LDCs that have not received OEB approved for a distributor-specific pole attachment charge. As NPEI does not have an OEB-approved distributor-specific pole attachment charge, the new province-wide pole attachment charge is applicable to NPEI.

On July 20, 2018, the OEB issued its *Accounting Guidance on Wireline Pole Attachment Charges.* The Guidance states: "*Because the increase in the pole attachment charge will result in LDCs earning revenue above what is reflected in their current distribution rates, the excess incremental revenue will need to be recorded in a new variance account related to pole attachment charges, with the accumulated balance ultimately being refunded to ratepayers in the LDCs next cost-based rate application."*

"Once an LDC has had the new pole attachment charge incorporated into a cost based rate application, the variance account will no longer be required and must be closed after disposition of the last amounts have been tracked."

Commencing September 1, 2018, NPEI has recorded its incremental pole attachment revenue in Account 1508 – Sub Account – Pole Attachment Revenue. In this current application, NPEI is proposing disposition of the Account 1508 – Sub Account – Pole Attachment Revenue balances that accumulated in 2018, 2019 and forecast 2020. Further details on the variance account are provided in Exhibit 9.

Beginning in 2021, in accordance with the Accounting Guidance, NPEI will no longer record any portion of its pole attachment revenue in Account 1508.

Table 3.3.1.2 below shows the details of NPEI's forecast pole attachment revenue for the 2020 Bridge Year and 2021 Test Year. The pole attachment rates for 2021 has been estimated using an annual inflation factor of 1.5% applied to the approved 2020 rate.

Table 3.3.1.2: Pole Attachment Revenue for 2020 and 2021

2020 Transaction	# of Poles	Rate	Total Amount	Recorded as Pole Attachment Revenue	Recorded in Account 1508
LDCs on NPEI Poles	40	44.28	1,771.38	894.00	877.38
Telecommunications carriers on NPEI poles	14,917	44.28	660,591.14	333,394.95	327,196.19
NPEI on Bell poles	1,838	(44.28)	(81,394.82)	(81,394.82)	
NPEI on Hydro One poles	608	(87.86)	(53,417.91)	(53,417.91)	
Total			527,549.79	199,476.22	328,073.57

2021 Transaction	# of Poles	Rate	Total Amount	Recorded as Pole Attachment Revenue	Recorded in Account 1508
LDCs on NPEI Poles	40	44.95	1,797.95	1,797.95	-
Telecommunications carriers on NPEI poles	14,917	44.95	670,500.01	670,500.01	-
NPEI on Bell poles	1,838	(44.95)	(82,615.74)	(82,615.74)	
NPEI on Hydro One poles	608	(89.18)	(54,219.18)	(54,219.18)	
Total			535,463.04	535,463.04	-

Energy Retailer Service Charges

On February 14, 2019, the OEB issued its *Decision and Order in the Matter of Energy Retailer Service Charges Effective May 1, 2019.* The Decision and Order provides updated service charges for electricity distributors effective May 1, 2019, and provides accounting guidance related to the updated charges.

The Decision and Order states:

"Electricity Distributors that currently record the revenues and costs associated with the RCVAs are expected to do so until their next rebasing application. At rebasing, the balances will be disposed of and the RCVAs will be eliminated."

As NPEI currently records its retailer revenues and costs in RCVA accounts, NPEI will continue to do so until December 31, 2020. In this current application, NPEI is proposing to dispose of its RCVA balances. Further details are provided in Exhibit 9.

Table 3.3.1.3 below shows the details of NPEI's forecast retailer revenue for the 2020 Bridge Year and 2021 Test Year.

Table 3.3.1.3: Retailer Revenue for 2020 and 2021

Service	USoA Acct #	2020			2021		
		Volume	Rate	Revenue	Volume	Rate	Revenue
Retailer Service Agreement -- monthly fixed charge (per retailer)	4082	228	40.80	9,302	228	41.62	9,488
Retailer Service Agreement -- monthly variable charge (per customer)	4082	20,810	1.02	21,226	17,810	1.04	18,530
Distributor-Consolidated Billing -- monthly charge (per customer)	4082	20,810	0.61	12,736	17,810	0.62	11,118
Service Transaction Request -- request fee (per request)	4084	541	0.51	276	541	0.52	281
Service Transaction Request -- processing fee (per processed request)	4084	491	1.02	501	491	1.04	511
				44,041			**39,927**

Collection of Account Charge

On March 14, 2019, the OEB issued its *Notice of Amendments to Codes and a Rule – Amendments to the Distribution System Code, Standard Supply Code, Unit Sub-Metering Code, and Gas Distribution Access Rule (And Associated Rate Order.)*

The Notice includes the following Board Order:

*"1. Effective **July 1, 2019**, despite any previous rate order, no electricity distributor shall apply any charge identified as a "Collection of Account" charge in the distributor's tariff of rates and charges."*

NPEI's approved Tariff of Rates and Charges from its 2019 IRM Rate Application (EB-2018-0054) included the following Collection of Account Charges:

Collection of Account Charge – no disconnection	$30.00
Collection of Account Charge – no disconnection – after regular hours	$165.00

In accordance with the Board Order, NPEI ceased applying these charges on July 1, 2019. Therefore, no revenue from Collection of Account charges has been included NPEI's Other Revenue for 2020 or 2021.

Further details and variance analysis on Other Revenue are provided in Exhibit 3.3.2.

MicroFIT Service Charges

NPEI's current Tariff of Rates and Charges from its 2020 IRM Rate Application (EB-2019-0054), issued December 12, 2019, includes a generic MicroFIT monthly service charge of $5.40.

On February 24, 2020, the OEB issued a letter to all licensed distributors *Review of Fixed Monthly Charge for MicroFIT Generator Service Classification* which established a new generic monthly charge of $4.55.

The letter indicates: *"Distributors that have already received final rate orders for 2020 where the MicroFIT charge is based on the previously-approved province-wide rate should adopt the updated charge in their next annual rate application."*

Accordingly, NPEI has incorporated the updated MicroFIT service charge of $4.55 per month in this current application effective January 1, 2021

VARIANCE ANALYSIS OF OTHER REVENUE

3.3.2 Variance Analysis of Other Revenue

Provided below is the analysis of Other Revenue covering 2015 Board Approved, historical actual 2015 to 2019, the 2020 Bridge Year and 2021 Test Years.

Table 3.3.2.1: 2015 Actual vs. 2015 Board Approved

Revenue Item	2015 Actual	2015 Board Approved	Variance $	Variance %
MicroFIT Monthly Service Charge	24,477	21,060	3,417	16.2%
SSS Administration Charges	149,441	146,703	2,738	1.9%
Miscellaneous Service Revenues	814,886	803,285	11,602	1.4%
Late Payment Charge	424,468	361,000	63,468	17.6%
Retailer Revenues	39,219	45,471	(6,252)	-13.7%
Other Utility Operating Income	57,932	44,000	13,932	31.7%
Gain/Loss on Disposition/Retirements	29,600	-	29,600	0.0%
Miscellaneous Non-Operating Income	103,532	81,003	22,529	27.8%
Revenue/Expense from Non-Utility Operations	278,313	-	278,313	0.0%
Interest and Dividend Income	105,631	100,000	5,631	5.6%
Amortization of Capital Contributions	613,263	903,332	(290,069)	-32.1%
Storm Aid for Other Utilities	-	-	-	0.0%
Total Other Revenue	2,640,762	2,505,854	134,909	5.4%

Total Other Revenue for 2015 Actual is $134,909 (5.4%) higher than 2015 Board Approved. The main drivers of this variance are as follows:

- Late Payment Charge revenue was $63,468 (17.6%) higher than 2015 Board Approved.
- Revenue/Expense from Non-Utility Operations for 2015 Actual was $278,313, versus $Nil for 2015 Board Approved. This is due to NPEI's 2011-2014 CDM PAB Incentive of $278,313, which was received from the IESO in 2015.
- Amortization of Capital Contributions for 2015 Actual was $290,069 (32.1%) lower than 2015 Board Approved. The approved level of capital contribution amortization in NPEI's 2015 COS Rate Application (EB-2014-0096) was based on amortizing all capital contributions over 25 years. In 2015, NPEI began

amortizing capital contributions over the same useful life as the assets for which the contribution was received, which is longer than 25 years. This resulted in a decrease in revenue from the amortization of capital contributions.

Table 3.3.2.2: 2016 Actual vs. 2015 Actual

Revenue Item	2016 Actual	2015 Actual	Variance $	Variance %
MicroFIT Monthly Service Charge	27,730	24,477	3,253	13.3%
SSS Administration Charges	149,419	149,441	(22)	0.0%
Miscellaneous Service Revenues	927,291	814,886	112,405	13.8%
Late Payment Charge	429,277	424,468	4,809	1.1%
Retailer Revenues	35,017	39,219	(4,202)	-10.7%
Other Utility Operating Income	41,442	57,932	(16,490)	-28.5%
Gain/Loss on Disposition/Retirements	(4,874)	29,600	(34,474)	-116.5%
Miscellaneous Non-Operating Income	95,183	103,532	(8,349)	-8.1%
Revenue/Expense from Non-Utility Operations	(16,087)	278,313	(294,400)	-105.8%
Interest and Dividend Income	108,114	105,631	2,483	2.4%
Amortization of Capital Contributions	738,438	613,263	125,176	20.4%
Storm Aid for Other Utilities	-	-	-	
Total Other Revenue	2,530,951	2,640,762	(109,811)	-4.2%

Total Other Revenue for 2016 Actual is $109,811 (4.2%) lower than 2015 Actual. The main drivers of this variance are as follows:

- Miscellaneous Service Revenue was $112,405 (13.8%) higher than 2015 Actual, mainly due to an increase of $119,919 in revenue from project billing.
- Revenue/Expense from Non-Utility Operations for 2016 Actual was $294,400 lower than 2015 Actual, mainly due to NPEI's 2011-2014 CDM PAB Incentive of $278,313, which was received from the IESO in 2015.
- Amortization of Capital Contributions for 2016 Actual was $125,176 (20.4%) higher than 2015 Actual, due to capital contributions received.

Table 3.3.2.3: 2017 Actual vs. 2016 Actual

Revenue Item	2017 Actual	2016 Actual	Variance $	Variance %
MicroFIT Monthly Service Charge	28,471	27,730	741	2.7%
SSS Administration Charges	156,050	149,419	6,631	4.4%
Miscellaneous Service Revenues	750,275	927,291	(177,017)	-19.1%
Late Payment Charge	372,954	429,277	(56,323)	-13.1%
Retailer Revenues	30,621	35,017	(4,397)	-12.6%
Other Utility Operating Income	29,141	41,442	(12,301)	-29.7%
Gain/Loss on Disposition/Retirements	(94,957)	(4,874)	(90,082)	1848.1%
Miscellaneous Non-Operating Income	63,464	95,183	(31,719)	-33.3%
Revenue/Expense from Non-Utility Operations	(6,231)	(16,087)	9,856	-61.3%
Interest and Dividend Income	225,113	108,114	116,999	108.2%
Amortization of Capital Contributions	824,191	738,438	85,753	11.6%
Storm Aid for Other Utilities	-	-	-	
Total Other Revenue	2,379,092	2,530,951	(151,859)	-6.0%

Total Other Revenue for 2017 Actual is $151,859 (6.0%) lower than 2016 Actual. The main drivers of this variance are as follows:

- Miscellaneous Service Revenue was $177,017 (19.1%) lower than 2016 Actual. This is mainly due to a decrease of $52,871 in revenue from project billing, and a decrease of $131,584 in Collection of Account charge revenue. The lower Collection of Account charge revenue is a result of the OEB's implementation of a disconnection ban period for low-volume customers in 2017.
- Late Payment Charge revenue was $56,323 (13.1%) lower than 2016 Actual.
- Gain/Loss on Disposition/Retirement was $90,082 lower than 2016 Actual, mainly due to loss on retirement of meters during 2017 that communicated via the 2G cellular network.
- Interest and Dividend Income was $116,999 higher than 2016 Actual, due to higher interest earned on bank deposits.
- Amortization of Capital Contributions for 2017 Actual was $85,753 (11.6%) higher than 2016 Actual, due to capital contributions received.

Table 3.3.2.4: 2018 Actual vs. 2017 Actual

Revenue Item	2018 Actual	2017 Actual	Variance $	Variance %
MicroFIT Monthly Service Charge	57,278	28,471	28,807	101.2%
SSS Administration Charges	158,072	156,050	2,022	1.3%
Miscellaneous Service Revenues	682,382	750,275	(67,893)	-9.0%
Late Payment Charge	372,405	372,954	(548)	-0.1%
Retailer Revenues	26,646	30,621	(3,975)	-13.0%
Other Utility Operating Income	28,867	29,141	(273)	-0.9%
Gain/Loss on Disposition/Retirements	(96,090)	(94,957)	(1,133)	1.2%
Miscellaneous Non-Operating Income	38,875	63,464	(24,589)	-38.7%
Revenue/Expense from Non-Utility Operations	437,530	(6,231)	443,760	-7122.4%
Interest and Dividend Income	260,255	225,113	35,141	15.6%
Amortization of Capital Contributions	894,004	824,191	69,813	8.5%
Storm Aid for Other Utilities	394,229	-	394,229	
Total Other Revenue	3,254,454	2,379,092	875,361	36.8%

Total Other Revenue for 2018 Actual is $875,361 (36.8%) higher than 2017 Actual. The main drivers of this variance are as follows:

- Miscellaneous Service Revenue was $67,893 (9.0%) lower than 2017 Actual. This is mainly due to a decrease in revenue from Account Set-Up / Change of Occupancy charges of $28,440, and a decrease of $28,735 in Collection of Account charge revenue.
- Revenue/Expenses from Non-Utility Operations was $443,760 higher than 2017 Actual. This is due to NPEI's CDM mid-term incentive for the 2015-2020 Conservation First Framework of $437,530, which NPEI received from the IESO in 2018.
- Amortization of Capital Contributions for 2018 Actual was $69,813 (8.5%) higher than 2017 Actual, due to capital contributions received.
- During 2018, NPEI provided storm assistance to several other utilities. The costs incurred by NPEI to provide this assistance were recovered from the other utilities. For 2018, the total revenue from storm assistance was $394,229.

Table 3.3.2.5: 2019 Actual vs. 2018 Actual

Revenue Item	2019 Actual	2018 Actual	Variance $	Variance %
MicroFIT Monthly Service Charge	57,689	57,278	411	0.7%
SSS Administration Charges	160,440	158,072	2,367	1.5%
Miscellaneous Service Revenues	660,922	682,382	(21,460)	-3.1%
Late Payment Charge	336,173	372,405	(36,232)	-9.7%
Retailer Revenues	39,736	26,646	13,090	49.1%
Other Utility Operating Income	19,294	28,867	(9,573)	-33.2%
Gain/Loss on Disposition/Retirements	(74,145)	(96,090)	21,945	-22.8%
Miscellaneous Non-Operating Income	34,166	38,875	(4,709)	-12.1%
Revenue/Expense from Non-Utility Operations	0	437,530	(437,530)	-100.0%
Interest and Dividend Income	225,055	260,255	(35,199)	-13.5%
Amortization of Capital Contributions	1,002,764	894,004	108,760	12.2%
Storm Aid for Other Utilities	100,295	394,229	(293,934)	-74.6%
IT Services	41,144	-	41,144	0.0%
Total Other Revenue	2,603,534	3,254,454	(650,920)	-20.0%

Total Other Revenue for 2019 Actual is $650,920 (20.0%) lower than 2018 Actual. The main drivers of this variance are as follows:

- Revenue/Expenses from Non-Utility Operations was $437,530 lower than 2018 Actual. This is due to NPEI's CDM mid-term incentive for the 2015-2020 Conservation First Framework of $437,530, which NPEI received from the IESO in 2018.
- Amortization of Capital Contributions for 2019 Actual was $108,760 (12.2%) higher than 2018 Actual, due to capital contributions received.
- During 2019, NPEI provided storm assistance to several other utilities. The costs incurred by NPEI to provide this assistance were recovered from the other utilities. For 2019, the total revenue from storm assistance was $293,934 lower than 2018.

Table 3.3.2.6: 2020 Bridge Year vs. 2019 Actual

Revenue Item	2020 Bridge	2019 Actual	Variance $	Variance %
MicroFIT Monthly Service Charge	57,914	57,689	225	0.4%
SSS Administration Charges	165,072	160,440	4,632	2.9%
Miscellaneous Service Revenues	517,876	660,922	(143,046)	-21.6%
Late Payment Charge	340,000	336,173	3,827	1.1%
Retailer Revenues	44,041	39,736	4,305	10.8%
Other Utility Operating Income	24,500	19,294	5,206	27.0%
Gain/Loss on Disposition/Retirements	-	(74,145)	74,145	-100.0%
Miscellaneous Non-Operating Income	13,589	34,166	(20,577)	-60.2%
Revenue/Expense from Non-Utility Operations	-	0	(0)	-100.0%
Interest and Dividend Income	216,000	225,055	(9,055)	-4.0%
Amortization of Capital Contributions	1,126,809	1,002,764	124,045	12.4%
Storm Aid for Other Utilities	-	100,295	(100,295)	-100.0%
IT Services	40,200	41,144	(944)	-2.3%
Total Other Revenue	2,546,001	2,603,534	(57,533)	-2.2%

Total Other Revenue for the 2020 Bridge Year is $57,533 (2.2%) lower than 2019 Actual. The main drivers of this variance are as follows:

- Miscellaneous Service Revenues for the 2020 Bridge Year are $143,046 lower than 2019 Actual, mainly due to a reduction in Collection of Account charges of $39,441 and a reduction in customer billings of $87,995.
- Gain/Loss on Disposition/Retirements for 2019 Actual was a loss of $74,145. No amount has been included for the 2020 Bridge Year.
- Amortization of Capital Contributions for the 2020 Bridge Year is $124,045 (12.4%) higher than 2019 Actual, due to capital contributions received.
- During 2019, NPEI provided storm assistance to several other utilities. The costs incurred by NPEI to provide this assistance were recovered from the other utilities. For 2019, the total revenue from storm assistance was $100,295. No amount has been included for the 2020 Bridge Year.

Table 3.3.2.7: 2021 Test Year vs. 2020 Bridge Year

Revenue Item	2021 Test	2020 Bridge	Variance $	Variance %
MicroFIT Monthly Service Charge	58,028	57,914	114	0.2%
SSS Administration Charges	166,911	165,072	1,839	1.1%
Miscellaneous Service Revenues	857,068	517,876	339,192	65.5%
Late Payment Charge	341,000	340,000	1,000	0.3%
Retailer Revenues	39,927	44,041	(4,113)	-9.3%
Other Utility Operating Income	25,500	24,500	1,000	4.1%
Gain/Loss on Disposition/Retirements	-	-	-	0.0%
Miscellaneous Non-Operating Income	17,315	13,589	3,726	27.4%
Revenue/Expense from Non-Utility Operations	-	-	-	0.0%
Interest and Dividend Income	200,000	216,000	(16,000)	-7.4%
Amortization of Capital Contributions	1,211,588	1,126,809	84,779	7.5%
Storm Aid for Other Utilities	-	-	-	
IT Services	54,000	40,200	13,800	34.3%
Total Other Revenue	2,971,337	2,546,001	425,336	16.7%

Total Other Revenue for the 2021 Test Year is $425,336 (16.7%) higher than the 2020 Bridge Year. The main drivers of this variance are as follows:

- Amortization of Capital Contributions for the 2021 Test Year is $84,779 (7.5%) higher than the 2020 Bridge Year, due to capital contributions received.
- Miscellaneous Service Revenues is $339,192 (65.5%) higher than the 2020 Bridge Year, mainly due to an increase of $335,987 in Wireline Pole Attachment Revenue. As explained in Exhibit 3.3.1, beginning in 2021 NPEI will no longer record any portion of its pole attachment revenue in Account 1508.

NEW PROPOSED SPECIFIC SERVICE CHARGES

3.3.3 New Proposed Specific Service Charges

Section 2.3.3 of the Filing Requirements requires that information be provided on any new proposed specific service charges, changes to rates, or new rules for applying existing specific service charges.

NPEI is not proposing any new specific service charges or any changes to existing specific service charges in this application. Therefore, no discrete customer groups will be materially impacted by changes to other rates and charges.

3.3.4 REVENUE FROM AFFILIATES, SHARED SERVICES, CORPORATE COST ALLOCATIONS

3.3.4 Revenue from Affiliates, Shared Services, Corporate Cost Allocations

Table 3.3.4.1 below provides a summary of NPEI's revenue related to affiliate transactions and shared services.

From	To	Service Offered	Pricing Methodology	2015 Board Approved	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Bridge Year	2021 Test Year
NPEI	Peninsula West Power	Year End Accounting	Flat Fee	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
NPEI	Peninsula West Services	Year End Accounting	Flat Fee	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
NPEI	Peninsula West Power	Insurance	Actual Premium	1,080	1,080	1,296	1,620	1,890	2,646	2,646	2,646
NPEI	Peninsula West Services	Insurance	Actual Premium	1,080	1,080	1,296	1,620	1,890	2,646	2,646	2,646
NPEI	Niagara Falls Hydro Holding	Insurance	Actual Premium	1,080	1,080	1,296	1,620	1,890	2,646	2,646	2,646
NPEI	Niagara Falls Hydro Services	Insurance	Actual Premium	1,080	1,080	1,296	1,620	1,890	2,646	2,646	2,646
NPEI	Peninsula West Services	Customer Service	Actual Direct Labour	32,514	24,121	13,657	11,637	11,315	11,562	10,441	10,650
				38,834	30,441	20,841	20,117	20,875	24,146	23,025	23,234

NPEI has completed OEB Appendix 2-N, which is included in Exhibit 4, Appendix 4-1.

Appendix 3-1

Weather Normalization Regression Model

Niagara Peninsula Energy Weather Normal Load Forecast for 2021 Rate Application

	2002 Actual	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	1,162,710,674	1,152,043,160	1,205,241,074	1,272,191,339	1,248,057,840	1,283,916,366	1,247,360,138	1,216,807,819	1,264,714,637	1,266,311,662	1,260,789,451	1,250,108,324	1,236,354,091	1,243,499,330	1,257,831,314	1,212,201,216	1,270,822,507	1,252,366,738		
Predicted kWh Purchases with loss	1,166,878,827	1,167,516,734	1,179,700,628	1,271,985,550	1,248,261,416	1,273,234,355	1,256,017,282	1,220,189,722	1,253,498,781	1,261,411,452	1,270,343,282	1,245,572,289	1,243,209,523	1,251,167,407	1,277,012,253	1,215,759,325	1,255,906,064	1,245,662,788	1,290,405,695	1,335,220,170
% Difference	0.4%	1.3%	-2.1%	0.0%	0.0%	-0.8%	0.7%	0.3%	-0.9%	-0.4%	0.8%	-0.4%	0.6%	0.6%	1.5%	0.3%	-1.2%	-0.5%		
Predicted without loss																		1,210,020,079	1,243,650,684	1,286,841,405
Loss																		35,642,709	46,755,011	48,378,765
Loss Factor based on predicted kWh																				
Billed kWh Weather Normalized with CDM	0	1,108,347,420	1,135,405,804	1,208,894,249	1,184,184,647	1,220,452,820	1,188,897,732	1,161,778,118	1,193,712,076	1,232,998,827	1,214,015,314	1,202,305,265	1,195,394,887	1,195,656,487	1,212,742,877	1,168,010,031	1,224,357,127	1,210,020,079	1,243,650,684	1,286,841,405
Loss Factor																			1.0376	1.0376
Loss																			46,755,011	48,378,765
CDM Difference																			0	0
By Class																				
Residential																				
Customers	40,624	42,507	42,859	43,068	43,724	44,325	44,955	45,761	45,840	45,996	45,871	46,274	46,773	47,555	48,401	49,606	50,324	50,792	51,360	51,935
kWh	0	418,838,012	404,285,804	463,562,202	450,017,939	462,721,168	450,470,690	438,952,918	451,343,387	418,849,931	414,592,237	412,298,278	416,585,049	415,749,082	433,305,471	410,629,996	451,047,288	434,759,152	443,039,730	454,614,210
GS<50																				
Customers	4,171	3,982	4,033	4,437	4,438	4,339	4,260	4,257	4,357	4,307	4,260	4,315	4,377	4,434	4,457	4,505	4,479	4,475	4,508	4,541
kWh	0	126,366,945	122,937,633	125,194,926	122,020,708	125,994,115	122,663,804	119,930,976	121,294,614	129,680,926	125,465,897	124,179,905	129,969,466	126,134,211	130,328,462	127,052,978	131,255,411	126,741,416	128,878,403	131,961,769
GS>50																				
Customers	796	864	819	802	871	853	847	852	851	859	855	863	823	781	759	808	790	800	805	810
kWh	0	553,710,685	598,431,001	609,950,002	601,216,533	622,092,059	605,669,659	592,972,281	611,065,862	675,128,624	664,095,955	655,968,805	639,303,434	645,074,725	642,382,592	624,101,455	635,816,201	642,357,413	665,567,632	694,096,099
kW	1,529,263	1,573,551	1,673,046	1,719,941	1,777,691	1,884,479	1,735,816	1,753,191	1,769,836	1,793,543	1,761,221	1,721,554	1,662,695	1,643,856	1,616,038	1,603,355	1,621,855	1,639,987	1,702,291	1,775,257
Large User																				
Customers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kWh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sentinels																				
Connections	582	582	602	522	594	569	564	566	417	369	343	337	330	334	311	324	312	296	290	283
kWh	0	298,685	299,222	336,743	317,191	295,243	286,832	294,273	293,544	246,192	267,435	265,619	256,092	223,690	213,770	210,489	220,524	218,186	218,400	218,613
kW	956	968	933	892	831	825	733	695	653	679	721	716	676	672	643	646	650	643	652	653
Streetlights																				
Connections	11,157	11,358	11,588	11,752	11,807	11,933	11,986	12,136	12,334	12,540	12,507	12,702	12,745	12,897	13,177	13,308	13,310	13,360	13,496	13,634
kWh	0	6,713,622	7,027,058	7,458,446	8,236,754	7,023,291	7,504,236	7,271,510	7,368,898	7,294,838	7,329,519	7,344,781	7,429,625	6,899,420	4,950,220	4,481,099	4,494,762	4,379,324	4,423,985	4,469,101
kW	17,456	17,588	19,480	19,789	19,932	20,188	20,371	20,319	19,656	20,391	21,037	20,809	20,750	20,270	13,925	12,517	12,519	12,447	12,418	12,545
USL																				
Connections	419	422	422	422	422	440	445	454	465	424	384	422	421	358	389	373	356	335	330	325
kWh	0	2,419,471	2,425,087	2,391,930	2,375,520	2,326,944	2,302,512	2,356,161	2,345,772	1,798,316	2,264,271	2,247,877	1,851,221	1,575,358	1,562,362	1,534,015	1,522,941	1,564,588	1,522,536	1,481,614
Total of Above																				
Customer/Connections	57,749	59,715	60,323	61,003	61,856	62,459	63,057	64,026	64,264	64,494	64,220	64,913	65,469	66,360	67,493	68,924	69,571	70,058	70,789	71,529
kWh	0	1,108,347,420	1,135,405,804	1,208,894,249	1,184,184,647	1,220,452,820	1,188,897,732	1,161,778,118	1,193,712,076	1,232,998,827	1,214,015,314	1,202,305,265	1,195,394,887	1,195,656,487	1,212,742,877	1,168,010,031	1,224,357,127	1,210,020,079	1,243,650,684	1,286,841,405
kW from applicable classes	1,547,675	1,592,107	1,693,459	1,740,622	1,798,454	1,905,492	1,756,920	1,774,205	1,790,145	1,814,614	1,782,980	1,743,079	1,684,121	1,664,798	1,630,606	1,616,517	1,635,024	1,653,077	1,715,361	1,788,455
Total from Model																				
Customer/Connections		59,715	60,323	61,003	61,856	62,459	63,057	64,026	64,264	64,494	64,220	64,913	65,469	66,360	67,493	68,924	69,571	70,058	70,789	71,528
kWh		1,108,347,420	1,135,405,804	1,208,894,249	1,184,184,647	1,220,452,820	1,188,897,732	1,161,778,118	1,193,712,076	1,232,998,827	1,214,015,314	1,202,305,265	1,195,394,887	1,195,656,487	1,212,742,877	1,168,010,031	1,224,357,127	1,210,020,079	1,243,650,684	1,286,841,405
kW from applicable classes		1,592,107	1,693,459	1,740,622	1,798,454	1,905,492	1,756,920	1,774,205	1,790,145	1,814,614	1,782,980	1,743,079	1,684,121	1,664,798	1,630,606	1,616,517	1,635,024	1,653,077	1,715,361	1,788,455
Check should all be zero																				
Customer/Connections		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kWh		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kW from applicable classes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Actual	1,163	1,152	1,205	1,272	1,248	1,284	1,247	1,217	1,265	1,266	1,261	1,250	1,236	1,243	1,258	1,212	1,271	1,252
Predicted	1,167	1,168	1,180	1,272	1,248	1,273	1,256	1,220	1,253	1,261	1,270	1,246	1,243	1,251	1,277	1,216	1,256	1,246

Drivers of Differences 2021 over 2020 Predicted kWh

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	2021 Predicted kWh	114,934,423	105,549,053	107,785,057	101,088,897	102,402,180	110,029,036	132,909,921	129,266,318	107,118,736	103,322,466	104,547,599	116,266,484	1,335,220,170
	2020 Predicted kWh	111,522,509	104,727,697	104,174,310	97,378,734	98,592,601	106,120,040	128,901,509	125,158,489	102,911,491	99,015,804	100,141,521	111,760,990	1,290,405,695
	Difference (kWh)	3,411,914	821,356	3,610,747	3,710,163	3,809,580	3,908,996	4,008,412	4,107,829	4,207,245	4,306,661	4,406,078	4,505,494	44,814,475
HDD	2021 value	632	564	510	331	156	33	1	1	31	172	365	518	3,314
	2020 value	632	564	510	331	156	33	1	1	31	172	365	518	3,314
	Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
	Regression Coefficient	24,552	24,552	24,552	24,552	24,552	24,552	24,552	24,552	24,552	24,552	24,552	24,552	
	Impact on forecast (kWh)	0	0	0	0	0	0	0	0	0	0	0	0	0
CDD	2021 value	0	0	0	0	13	52	153	133	57	6	0	0	414
	2020 value	0	0	0	0	13	52	153	133	57	6	0	0	414
	Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
	Regression Coefficient	203,919	203,919	203,919	203,919	203,919	203,919	203,919	203,919	203,919	203,919	203,919	203,919	
	Impact on forecast (kWh)	0	0	0	0	0	0	0	0	0	0	0	0	0
GDP	2021 value	170	170	170	171	171	171	171	172	172	172	172	173	2,055
	2020 value	167	168	168	168	168	168	169	169	169	169	170	170	2,023
	Difference	3	3	3	3	3	3	3	3	3	3	3	3	32
	Regression Coefficient	436,556	436,556	436,556	436,556	436,556	436,556	436,556	436,556	436,556	436,556	436,556	436,556	
	Impact on forecast (kWh)	1,168,858	1,170,414	1,171,971	1,173,527	1,175,084	1,176,640	1,178,196	1,179,753	1,181,309	1,182,866	1,184,422	1,185,978	14,129,019
# Days in Month	2021 value	31	28	31	30	31	30	31	31	30	31	30	31	365
	2020 value	31	29	31	30	31	30	31	31	30	31	30	31	366
	Difference	0	-1	0	0	0	0	0	0	0	0	0	0	(1)
	Regression Coefficient	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	2,689,975	
	Impact on forecast (kWh)	0	-2,689,975	0	0	0	0	0	0	0	0	0	0	(2,689,975)
CDM kWh Saved	2021 value	6,767,599	6,732,359	6,697,120	6,661,881	6,626,641	6,591,402	6,556,163	6,520,923	6,485,684	6,450,445	6,415,205	6,379,966	78,885,388
	2020 value	6,933,913	6,921,998	6,910,082	6,898,166	6,886,250	6,874,334	6,862,418	6,850,502	6,838,586	6,826,670	6,814,754	6,802,838	82,420,510
	Difference	-166,315	-189,638	-212,961	-236,285	-259,608	-282,932	-306,255	-329,579	-352,902	-376,225	-399,549	-422,872	(3,535,122)
	Regression Coefficient	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	
	Impact on forecast (kWh)	697,819	795,679	893,539	991,399	1,089,259	1,187,119	1,284,979	1,382,839	1,480,699	1,578,559	1,676,419	1,774,279	14,832,593
Spring/Fall	2021 value	0	0	1	1	1	0	0	0	1	1	1	0	6
	2020 value	0	0	1	1	1	0	0	0	1	1	1	0	6
	Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
	Regression Coefficient	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	-4,890,419	
	Impact on forecast (kWh)	0	0	0	0	0	0	0	0	0	0	0	0	0
Population	2021 value	149,987	150,120	150,253	150,386	150,519	150,652	150,785	150,918	151,051	151,184	151,317	151,450	1,808,619
	2020 value	148,390	148,523	148,656	148,789	148,922	149,055	149,188	149,321	149,454	149,587	149,720	149,854	1,789,462
	Difference	1,596	1,596	1,596	1,596	1,596	1,596	1,596	1,596	1,596	1,596	1,596	1,596	19,157
	Regression Coefficient	968	968	968	968	968	968	968	968	968	968	968	968	
	Impact on forecast (kWh)	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	1,545,236	18,542,837
Peak Hours	2021 value	320	304	368	336	320	352	336	336	336	320	352	336	4,016
	2020 value	352	304	352	336	320	352	352	320	336	336	336	336	4,032
	Difference	-32	0	16	0	0	0	-16	16	0	-16	16	0	(16)
	Regression Coefficient	0	0	0	0	0	0	0	0	0	0	0	0	
	Impact on forecast (kWh)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Impact on Forecast (kWh)		3,411,914	821,356	3,610,747	3,710,163	3,809,580	3,908,996	4,008,412	4,107,829	4,207,245	4,306,661	4,406,078	4,505,494	44,814,475

	Purchased	Embedded Generation	Load Transfers	Total	Heating Degree Days	Cooling Degree Days	Ontario Real GDP Monthly %	Number of Days in Month	CDM kWh Saved in month	Spring Fall Flag	Population	Number of Peak Hours	Predicted Purchases	Variances (kWh)	% Variance
Jan-96	0			0	719.20	0.00	94.74	31		0	119,961	352	83,532,988		
Feb-96	0			0	648.20	0.00	94.83	29		0	120,112	336	76,594,046		
Mar-96	0			0	618.50	0.00	94.91	31		1	120,263	336	76,538,600		
Apr-96	0			0	360.60	0.00	95.00	30		1	120,414	336	67,700,775		
May-96	0			0	240.40	3.20	95.09	31		1	120,566	352	68,276,317		
Jun-96	0			0	37.30	21.90	95.17	30		0	120,717	320	69,487,677		
Jul-96	0			0	2.60	72.10	95.26	31		0	120,868	352	81,746,661		
Aug-96	0			0	0.40	115.40	95.35	31		0	121,019	336	90,706,582		
Sep-96	0			0	56.00	34.80	95.43	30		1	121,170	320	68,239,645		
Oct-96	0			0	228.30	1.40	95.52	31		1	121,322	352	68,533,338		
Nov-96	0			0	468.90	0.00	95.61	30		1	121,473	320	71,649,433		
Dec-96	0			0	496.20	0.00	95.69	31		0	121,624	320	80,084,341		
Jan-97	0			0	606.30	0.00	96.05	31		0	121,713	352	83,030,391		
Feb-97	0			0	503.80	0.00	96.41	28		0	121,802	320	72,686,663		
Mar-97	0			0	500.50	0.00	96.77	31		1	121,891	304	76,027,968		
Apr-97	0			0	320.90	0.00	97.13	30		1	121,980	352	69,171,193		
May-97	0			0	259.30	0.00	97.49	31		1	122,069	336	70,591,559		
Jun-97	0			0	39.40	64.40	97.85	30		0	122,158	336	80,768,140		
Jul-97	0			0	9.70	94.10	98.21	31		0	122,247	352	89,028,132		
Aug-97	0			0	9.00	58.50	98.56	31		0	122,336	320	81,994,243		
Sep-97	0			0	48.70	18.30	98.92	30		1	122,425	336	67,433,851		
Oct-97	0			0	221.50	2.10	99.28	31		1	122,514	352	71,305,823		
Nov-97	0			0	384.90	0.00	99.64	30		1	122,603	304	72,442,315		
Dec-97	0			0	490.00	0.00	100.00	31		0	122,692	336	82,845,997		
Jan-98	0			0	524.90	0.00	100.40	31		0	122,781	336	83,963,665		
Feb-98	0			0	462.90	0.00	100.80	28		0	122,870	320	74,632,275		
Mar-98	0			0	462.30	5.50	101.20	31		1	122,959	352	79,179,391		
Apr-98	0			0	258.90	0.00	101.60	30		1	123,048	336	70,634,675		
May-98	0			0	107.60	16.80	102.00	31		1	123,137	320	73,296,492		
Jun-98	0			0	47.60	92.20	102.40	30		0	123,226	352	89,660,089		
Jul-98	0			0	0.00	127.80	102.80	31		0	123,315	352	98,701,679		
Aug-98	0			0	0.00	135.60	103.20	31		0	123,404	320	100,553,036		
Sep-98	0			0	14.10	64.00	103.60	30		1	123,493	336	78,978,999		
Oct-98	0			0	157.00	0.30	104.00	31		1	123,582	336	72,448,651		
Nov-98	0			0	340.50	0.00	104.40	30		1	123,671	336	74,463,666		
Dec-98	0			0	466.20	0.00	104.80	31		0	123,760	336	85,391,091		
Jan-99	0			0	671.90	0.00	105.46	31		0	123,849	320	90,813,643		
Feb-99	0			0	502.70	0.00	106.11	28		0	123,938	320	78,961,550		
Mar-99	0			0	517.70	0.00	106.77	31		1	124,027	368	82,881,451		
Apr-99	0			0	312.50	0.00	107.42	30		1	124,116	336	75,525,418		
May-99	0			0	137.30	14.10	108.08	31		1	124,205	320	77,161,170		
Jun-99	0			0	17.70	72.60	108.73	30		0	124,295	352	88,726,526		
Jul-99	0			0	0.20	184.10	109.39	31		0	124,384	336	114,095,940		
Aug-99	0			0	1.60	91.00	110.04	31		0	124,473	336	95,517,537		
Sep-99	0			0	25.20	59.60	110.70	30		1	124,562	336	82,485,626		
Oct-99	0			0	201.00	1.00	111.35	31		1	124,651	320	77,914,363		
Nov-99	0			0	322.10	0.00	112.01	30		1	124,740	352	78,365,882		
Dec-99	0			0	516.00	0.00	112.66	31		0	124,829	336	91,079,108		
Jan-00	0			0	662.50	0.00	113.21	31		0	124,918	320	95,004,023		
Feb-00	0			0	542.50	0.00	113.77	29		0	125,007	336	87,005,756		
Mar-00	0			0	426.90	0.00	114.32	31		1	125,096	368	84,984,998		
Apr-00	0			0	337.10	0.00	114.88	30		1	125,185	304	80,418,190		
May-00	0			0	149.20	0.00	115.43	31		1	125,274	352	78,822,733		
Jun-00	0			0	44.80	33.10	115.98	30		0	125,363	352	85,537,606		
Jul-00	0			0	0.20	83.70	116.54	31		0	125,452	320	97,778,834		
Aug-00	0			0	2.80	109.10	117.09	31		0	125,541	352	103,350,198		
Sep-00	0			0	60.30	50.30	117.65	30		1	125,630	320	85,519,096		
Oct-00	0			0	196.60	0.00	118.20	31		1	125,719	336	81,626,410		
Nov-00	0			0	376.80	0.00	118.75	30		1	125,808	352	83,688,769		
Dec-00	0			0	628.60	0.00	119.31	31		0	125,897	304	97,779,452		
Jan-01	0			0	621.50	0.00	119.49	31		0	125,986	352	97,769,420		
Feb-01	0			0	530.30	0.00	119.66	28		0	126,075	320	87,624,602		
Mar-01	0			0	520.50	0.00	119.84	31		1	126,164	352	90,727,784		
Apr-01	0			0	322.80	0.00	120.02	30		1	126,253	320	83,348,077		
May-01	0			0	129.40	2.20	120.20	31		1	126,342	352	81,902,517		
Jun-01	0			0	27.70	61.00	120.38	30		0	126,431	336	93,760,719		
Jul-01	0			0	1.80	91.00	120.56	31		0	126,520	336	102,096,654		
Aug-01	0			0	0.00	0.00	120.74	31		0	126,609	352	83,660,096		
Sep-01	0			0	43.60	45.20	120.92	30		1	126,698	304	86,531,633		
Oct-01	0			0	184.90	3.80	121.10	31		1	126,787	352	84,412,904		
Nov-01	0			0	290.40	0.00	121.28	30		1	126,876	352	83,702,613		
Dec-01	0			0	455.00	0.00	121.45	31		0	126,965	304	95,488,634		
Jan-02	98,398,774			98,398,774	530.30	0.00	121.77	31	0	0	127,069	352	97,575,446		
Feb-02	87,515,454			87,515,454	492.30	0.00	122.08	28	0	0	127,174	320	88,810,540		
Mar-02	94,028,461			94,028,461	513.50	0.00	122.40	31	0	1	127,278	320	92,748,569		
Apr-02	86,184,466			86,184,466	314.10	0.00	122.71	30	0	1	127,383	352	85,400,844		
May-02	85,447,299			85,447,299	224.50	2.40	123.02	31	0	1	127,487	352	86,618,335		
Jun-02	95,651,673			95,651,673	39.30	54.80	123.34	30	0	0	127,591	320	95,195,043		
Jul-02	119,450,096			119,450,096	0.00	191.60	123.65	31	0	0	127,696	352	125,054,275		
Aug-02	114,483,163			114,483,163	0.00	155.00	123.96	31	0	0	127,800	336	117,828,841		
Sep-02	96,936,653			96,936,653	9.80	92.30	124.28	30	0	1	127,904	320	97,941,334		
Oct-02	90,917,731			90,917,731	234.60	11.40	124.59	31	0	1	128,009	352	89,891,646		
Nov-02	90,920,618			90,920,618	381.20	0.00	124.91	30	0	1	128,113	336	88,714,395		
Dec-02	102,776,286			102,776,286	567.20	0.00	125.22	31	0	0	128,218	320	101,099,560		
Jan-03	104,493,535			104,493,535	707.70	0.00	125.37	31	0	0	128,322	352	104,713,997		
Feb-03	96,011,347			96,011,347	625.70	0.00	125.51	28	0	0	128,426	320	94,795,586		
Mar-03	95,684,640			95,684,640	547.70	0.00	125.66	31	0	1	128,531	336	96,224,813		
Apr-03	86,343,957			86,343,957	398.30	0.00	125.80	30	0	1	128,635	336	90,031,515		

SUMMARY OUTPUT

Regression Sta

Multiple R	
R Square	
Adjusted R Square	
Standard Error	
Observations	

ANOVA

Regression	
Residual	
Total	

Intercept	
Heating Degree Days	
Cooling Degree Days	
Ontario Real GDP Monthly %	
Number of Days in Month	
CDM kWh Saved in month	
Spring Fall Flag	
Population	

	Purchased	Embedded Generation	Load Transfers	Total	Heating Degree Days	Cooling Degree Days	Ontario Real GDP Monthly %	Number of Days in Month	CDM kWh Saved in month	Spring Fall Flag	Population	Number of Peak Hours	Predicted Purchases	Variances (kWh)	% Variance	SUMMARY OUTPUT
May-03	84,100,206			84,100,206	235.40	0.00	125.95	31	0	1	128,740	336	88,886,707			
Jun-03	90,485,413			90,485,413	74.10	44.60	126.10	30	0	0	128,844	336	96,386,453			
Jul-03	107,838,219			107,838,219	3.40	105.00	126.24	31	0	0	128,948	352	109,822,108			
Aug-03	111,720,633			111,720,633	0.00	143.50	126.39	31	0	0	129,053	320	117,754,337			
Sep-03	90,994,824			90,994,824	26.80	27.40	126.53	30	0	1	129,157	336	87,321,737			
Oct-03	90,574,201			90,574,201	245.30	0.00	126.68	31	0	1	129,261	352	89,953,853			
Nov-03	91,660,392			91,660,392	348.00	0.00	126.83	30	0	1	129,366	320	89,950,232			
Dec-03	102,135,791			102,135,791	510.10	0.00	126.97	31	0	0	129,470	336	101,675,396			
Jan-04	110,906,403			110,906,403	750.20	0.00	127.24	31	0	0	129,575	336	107,786,964			
Feb-04	98,773,310			98,773,310	578.90	0.00	127.50	29	0	0	129,679	320	98,417,696			
Mar-04	100,169,246			100,169,246	479.80	0.00	127.77	31	0	1	129,783	368	96,690,596			
Apr-04	89,485,333			89,485,333	332.50	0.50	128.03	30	0	1	129,888	336	90,702,522			
May-04	90,686,143			90,686,143	169.70	1.20	128.30	31	0	1	129,992	320	89,754,617			
Jun-04	96,517,444			96,517,444	45.60	26.30	128.56	30	0	0	130,097	352	94,242,993			
Jul-04	110,297,642			110,297,642	1.90	79.30	128.82	31	0	0	130,201	336	106,884,266			
Aug-04	109,063,695			109,063,695	1.80	85.00	129.09	31	0	0	130,305	336	108,260,670			
Sep-04	103,094,592			103,094,592	14.60	65.30	129.35	30	0	1	130,410	336	97,193,858			
Oct-04	93,329,246			93,329,246	196.40	2.60	129.62	31	0	1	130,514	320	91,778,252			
Nov-04	94,434,399			94,434,399	341.00	0.00	129.88	30	0	1	130,618	352	92,324,894			
Dec-04	108,483,621			108,483,621	566.70	0.00	130.15	31	0	0	130,723	336	105,663,300			
Jan-05	111,357,551			111,357,551	693.30	0.00	130.44	31	0	0	130,827	320	109,000,518			
Feb-05	97,354,644			97,354,644	582.00	0.00	130.73	28	0	0	130,932	320	98,426,781			
Mar-05	103,696,307			103,696,307	576.10	0.00	131.03	31	0	1	131,036	352	101,690,302			
Apr-05	91,002,648			91,002,648	345.10	0.00	131.32	30	0	1	131,140	336	93,557,583			
May-05	90,914,555			90,914,555	215.30	0.00	131.61	31	0	1	131,245	336	93,289,522			
Jun-05	117,110,314			117,110,314	10.40	107.80	131.90	30	0	0	131,349	352	112,670,540			
Jul-05	130,492,623			130,492,623	0.00	183.50	132.20	31	0	0	131,453	320	130,770,734			
Aug-05	125,304,430			125,304,430	0.00	165.70	132.49	31	0	0	131,558	352	127,369,846			
Sep-05	103,515,709			103,515,709	7.30	76.60	132.78	30	0	1	131,662	336	102,028,354			
Oct-05	95,683,703			95,683,703	216.60	13.40	133.08	31	0	1	131,767	320	97,198,338			
Nov-05	95,832,424			95,832,424	369.30	0.00	133.37	30	0	1	131,871	352	95,753,884			
Dec-05	109,926,431			109,926,431	640.80	0.00	133.66	31	0	0	131,975	320	110,229,148			
Jan-06	105,189,786			105,189,786	520.40	0.00	133.94	31	26,995	0	132,080	336	107,382,367			
Feb-06	97,673,987			97,673,987	564.70	0.00	134.22	28	53,991	0	132,184	320	100,509,454			
Mar-06	102,138,407			102,138,407	488.70	0.00	134.50	31	80,986	1	132,289	368	101,932,307			
Apr-06	89,654,385			89,654,385	296.70	0.00	134.77	30	107,981	1	132,393	304	94,637,594			
May-06	96,375,371			96,375,371	135.30	29.20	135.05	31	134,977	1	132,497	352	99,428,579			
Jun-06	106,149,796			106,149,796	15.90	65.60	135.33	30	161,972	0	132,602	352	106,229,456			
Jul-06	129,944,898			129,944,898	0.60	166.80	135.61	31	188,967	0	132,706	320	129,289,744			
Aug-06	120,333,539			120,333,539	1.40	103.80	135.89	31	215,963	0	132,810	352	116,571,808			
Sep-06	95,914,535			95,914,535	45.90	17.00	136.17	30	242,958	1	132,915	320	92,493,142			
Oct-06	99,436,287			99,436,287	234.40	0.40	136.45	31	269,953	1	133,019	336	96,535,533			
Nov-06	98,699,343			98,699,343	341.90	0.00	136.72	30	296,949	1	133,124	352	96,512,717			
Dec-06	106,547,506			106,547,506	445.20	0.00	137.00	31	323,944	0	133,228	304	106,738,717			
Jan-07	110,076,804			110,076,804	578.00	0.00	137.25	31	351,106	0	133,273	352	110,038,384			
Feb-07	106,214,903			106,214,903	657.80	0.00	137.50	28	378,267	0	133,318	320	103,966,846			
Mar-07	105,901,314			105,901,314	515.50	0.00	137.76	31	405,429	1	133,363	352	103,691,634			
Apr-07	96,871,140			96,871,140	362.10	0.00	138.01	30	432,590	1	133,407	320	97,274,410			
May-07	96,387,835			96,387,835	157.90	13.60	138.26	31	459,752	1	133,452	352	97,763,171			
Jun-07	113,036,516			113,036,516	10.90	81.70	138.51	30	486,914	0	133,497	336	110,280,404			
Jul-07	116,239,482			116,239,482	0.00	109.00	138.76	31	514,075	0	133,542	336	118,308,853			
Aug-07	124,879,950			124,879,950	6.80	142.50	139.01	31	541,237	0	133,587	352	125,346,204			
Sep-07	104,023,176			104,023,176	19.20	54.70	139.26	30	568,398	1	133,632	304	100,205,248			
Oct-07	99,226,202			99,226,202	103.00	20.60	139.51	31	595,560	1	133,677	352	98,038,171			
Nov-07	100,079,144			100,079,144	385.40	0.00	139.77	30	622,721	1	133,721	352	98,120,176			
Dec-07	110,979,900			110,979,900	567.10	0.00	140.02	31	649,883	0	133,766	304	110,200,853			
Jan-08	109,593,071		(81,873)	109,511,198	562.40	0.00	139.95	31	660,141	0	133,811	352	110,055,268			
Feb-08	104,778,875		(81,873)	104,697,002	599.90	0.00	139.88	29	670,398	0	133,856	320	105,565,848			
Mar-08	105,424,609		(81,873)	105,342,736	548.00	0.00	139.81	31	680,656	1	133,901	304	104,750,917			
Apr-08	86,811,986		(81,873)	86,730,113	303.30	0.00	139.74	30	690,914	1	133,946	352	96,022,765			
May-08	95,673,539		(81,873)	95,591,666	192.70	0.00	139.67	31	701,171	1	133,990	336	95,967,049			
Jun-08	106,441,284		(81,873)	106,359,411	30.40	62.50	139.60	30	711,429	0	134,035	336	106,897,394			
Jul-08	120,363,654		(81,873)	120,281,780	0.00	115.40	139.53	31	721,686	0	134,080	352	119,598,115			
Aug-08	112,977,083		(81,873)	112,895,210	4.50	85.70	139.46	31	731,944	0	134,125	320	113,622,010			
Sep-08	101,476,765		(81,873)	101,394,891	38.60	39.60	139.39	30	742,202	1	134,170	336	97,447,989			
Oct-08	95,543,325		(81,873)	95,461,452	207.10	0.40	139.32	31	752,459	1	134,215	352	96,251,231			
Nov-08	97,619,273		(81,873)	97,537,400	420.90	0.00	139.25	30	762,717	1	134,260	304	98,698,819			
Dec-08	111,639,154		(81,873)	111,557,280	620.10	0.00	139.18	31	772,974	0	134,304	336	111,139,876			
Jan-09	117,706,103		(61,304)	117,644,799	723.90	0.00	138.81	31	798,306	0	134,349	336	113,463,527			
Feb-09	97,637,232		(61,304)	97,575,928	537.00	0.00	138.43	28	823,638	0	134,394	304	100,579,851			
Mar-09	102,033,201		(61,304)	101,971,897	509.10	0.00	138.06	31	848,970	1	134,439	352	102,849,446			
Apr-09	92,234,007		(61,304)	92,172,703	315.40	0.00	137.69	30	874,302	1	134,484	320	95,178,762			
May-09	90,740,353		(61,304)	90,679,049	185.90	0.00	137.32	31	899,634	1	134,529	320	94,464,296			
Jun-09	97,871,861		(61,304)	97,810,557	66.80	33.00	136.95	30	924,965	0	134,574	352	100,244,982			
Jul-09	106,379,010		(61,304)	106,317,706	0.60	56.80	136.58	31	950,297	0	134,618	352	105,937,966			
Aug-09	118,375,480		(61,304)	118,314,176	3.90	118.80	136.21	31	975,629	0	134,663	320	118,437,089			
Sep-09	96,821,587		(61,304)	96,760,283	32.40	30.70	135.84	30	1,000,961	1	134,708	336	93,366,257			
Oct-09	93,959,689		(61,304)	93,898,385	241.20	0.00	135.47	31	1,026,293	1	134,753	336	94,697,569			
Nov-09	93,794,433		(61,304)	93,733,129	320.80	0.00	135.09	30	1,051,624	1	134,798	320	93,737,076			
Dec-09	109,990,512		(61,304)	109,929,208	570.89	0.00	134.72	31	1,076,956	0	134,843	352	107,232,901			
Jan-10	112,413,953	411,293	(96,502)	112,728,743	653.30	0.00	135.08	31	1,086,477	0	134,887	320	109,416,572			
Feb-10	98,822,728	532,219	(96,502)	99,258,445	551.10	0.00	135.44	28	1,095,998	0	134,932	304	98,997,688			
Mar-10	99,590,880	545,833	(96,502)	100,040,210	434.70	0.00	135.80	31	1,105,519	1	134,977	368	99,479,588			
Apr-10	88,866,064	587,674	(96,502)	89,357,236	253.20	0.00	136.16	30	1,115,040	1	135,022	320	92,493,642			
May-10	97,708,833	438,525	(96,502)	98,050,856	129.40	22.40	136.52	31	1,124,561	1	135,067	320	96,872,115			
Jun-10	106,489,650	575,982	(96,502)	106,969,130	15.00	60.60	136.88	30	1,134,082	0	135,112	352	104,213,775			
Jul-10	129,819,711	468,792	(96,502)	130,192,001	1.90	174.60	137.24	31	1,143,603	0	135,157	336	129,989,213			
Aug-10	125,064,295	467,603	(96,502)	125,435,396	1.40	145.70	137.60	31	1,153,124	0	135,201	336	124,243,972			

	Purchased	Embedded Generation	Load Transfers	Total	Heating Degree Days	Cooling Degree Days	Ontario Real GDP Monthly %	Number of Days in Month	CDM kWh Saved in month	Spring Fall Flag	Population	Number of Peak Hours	Predicted Purchases	Variances (kWh)	% Variance	SUMMARY OUTPUT
Sep-10	98,983,964	627,245	(96,502)	99,514,707	54.40	40.20	137.96	30	1,162,645	1	135,246	336	96,611,678			
Oct-10	93,865,161	384,107	(96,502)	94,152,765	218.20	0.50	138.32	31	1,172,166	1	135,291	320	95,388,054			
Nov-10	96,656,392	560,522	(96,502)	97,120,412	346.60	0.00	138.67	30	1,181,687	1	135,336	336	95,908,959			
Dec-10	111,304,958	686,277	(96,502)	111,894,733	600.50	0.00	139.03	31	1,191,208	0	135,381	368	109,883,526			
Jan-11	113,431,520	490,789	(92,424)	113,829,885	678.00	0.00	139.24	31	1,227,361	0	135,426	320	111,769,113			
Feb-11	101,615,469	597,207	(92,424)	102,120,252	578.50	0.00	139.45	28	1,263,513	0	135,471	304	101,238,989			
Mar-11	105,339,679	1,602,527	(92,424)	106,849,783	527.00	0.00	139.66	31	1,299,665	1	135,515	368	103,136,812			
Apr-11	93,360,769	818,684	(92,424)	94,087,029	342.60	0.00	139.87	30	1,335,818	1	135,560	320	95,902,132			
May-11	94,535,391	868,682	(92,424)	95,311,649	187.10	4.10	140.08	31	1,371,970	1	135,605	320	95,593,036			
Jun-11	103,622,683	951,129	(92,424)	104,481,388	21.90	41.80	140.29	30	1,408,122	0	135,650	352	101,407,940			
Jul-11	131,926,638	481,410	(92,424)	132,315,624	0.00	196.90	140.49	31	1,444,274	0	135,695	336	135,170,865			
Aug-11	120,223,938	847,595	(92,424)	120,979,110	0.00	146.30	140.70	31	1,480,427	0	135,740	336	124,835,320			
Sep-11	100,218,739	1,330,377	(92,424)	101,456,692	26.90	39.90	140.91	30	1,516,579	1	135,784	336	96,201,147			
Oct-11	94,403,706	890,902	(92,424)	95,202,185	184.90	4.20	141.12	31	1,552,731	1	135,829	320	95,473,264			
Nov-11	93,722,005	809,920	(92,424)	94,439,501	284.90	0.00	141.33	30	1,588,883	1	135,874	336	94,364,845			
Dec-11	104,372,807	958,180	(92,424)	105,238,563	463.70	0.00	141.54	31	1,625,036	0	135,919	368	106,317,990			
Jan-12	108,352,391	950,033	(78,846)	109,223,578	554.40	0.00	141.73	31	1,683,207	0	136,045	336	108,504,994			
Feb-12	98,705,242	947,209	(78,846)	99,573,605	482.40	0.00	141.91	29	1,741,379	0	136,171	320	101,317,362			
Mar-12	96,296,941	722,234	(78,846)	96,940,329	366.70	0.00	142.10	31	1,799,551	1	136,296	352	98,926,267			
Apr-12	89,872,581	601,702	(78,846)	90,395,437	296.30	0.00	142.29	30	1,857,722	1	136,422	320	94,467,893			
May-12	98,707,869	1,571,841	(78,846)	100,200,864	99.50	22.40	142.48	31	1,915,894	1	136,548	352	96,853,828			
Jun-12	109,390,923	1,115,019	(78,846)	110,427,096	18.90	105.60	142.67	30	1,974,066	0	136,674	336	114,001,522			
Jul-12	133,058,609	1,039,699	(78,846)	134,019,462	0.00	203.50	142.86	31	2,032,237	0	136,800	336	136,151,248			
Aug-12	121,123,046	1,093,336	(78,846)	122,137,537	0.00	148.70	143.05	31	2,090,409	0	136,926	352	124,936,566			
Sep-12	99,680,085	646,474	(78,846)	100,247,713	37.90	50.30	143.23	30	2,148,581	1	137,051	304	98,181,149			
Oct-12	94,333,164	944,121	(78,846)	95,198,440	191.90	2.60	143.42	31	2,206,752	1	137,177	352	94,885,350			
Nov-12	96,179,067	931,868	(78,846)	97,032,089	381.90	0.00	143.61	30	2,264,924	1	137,303	352	96,290,249			
Dec-12	104,482,420	989,725	(78,846)	105,393,299	463.20	0.00	143.80	31	2,323,096	0	137,429	304	105,826,853			
Jan-13	109,467,098	930,414	(71,393)	110,326,119	556.40	0.00	143.96	31	2,349,707	0	137,555	352	108,193,282			
Feb-13	98,965,962	906,712	(71,393)	99,801,280	565.90	0.00	144.11	28	2,376,319	0	137,680	304	100,434,744			
Mar-13	102,422,656	894,061	(71,393)	103,245,324	508.70	0.00	144.27	31	2,402,930	1	137,806	320	102,287,986			
Apr-13	92,083,367	1,022,778	(71,393)	93,034,751	341.30	0.00	144.42	30	2,429,542	1	137,932	336	95,566,066			
May-13	95,266,526	1,234,580	(71,393)	96,429,712	153.90	14.30	144.58	31	2,456,153	1	138,058	352	96,649,092			
Jun-13	101,746,391	1,118,148	(71,393)	102,793,146	44.30	47.50	144.74	30	2,482,765	0	138,184	320	103,006,844			
Jul-13	123,815,621	1,104,432	(71,393)	124,848,660	2.30	139.40	144.89	31	2,509,376	0	138,310	352	123,483,934			
Aug-13	114,328,198	1,270,351	(71,393)	115,527,156	0.00	106.40	145.05	31	2,535,988	0	138,435	336	116,776,266			
Sep-13	96,921,113	1,399,910	(71,393)	98,249,630	51.60	34.40	145.20	30	2,562,599	1	138,561	320	95,858,730			
Oct-13	94,790,916	1,226,455	(71,393)	95,945,978	161.40	4.80	145.36	31	2,589,211	1	138,687	352	95,286,693			
Nov-13	98,272,590	1,105,762	(71,393)	99,306,959	412.90	0.00	145.51	30	2,615,822	1	138,813	336	97,870,990			
Dec-13	109,815,032	855,971	(71,393)	110,599,610	601.40	0.00	145.67	31	2,642,434	0	138,939	320	110,157,662			
Jan-14	117,246,823	771,851	(70,929)	117,947,745	727.80	0.00	146.00	31	2,694,394	0	139,064	352	113,307,951			
Feb-14	101,962,544	811,223	(70,929)	102,702,838	648.10	0.00	146.33	28	2,746,354	0	139,190	304	103,328,052			
Mar-14	106,897,420	920,445	(70,929)	107,746,936	636.20	0.00	146.65	31	2,798,315	1	139,316	336	106,262,238			
Apr-14	88,321,885	1,137,316	(70,929)	89,388,272	356.60	0.00	146.98	30	2,850,275	1	139,442	336	96,754,250			
May-14	91,424,651	1,279,581	(70,929)	92,633,303	174.70	3.00	147.31	31	2,902,236	1	139,568	336	95,636,744			
Jun-14	104,058,299	1,413,020	(70,929)	105,400,390	27.00	39.10	147.64	30	2,954,196	0	139,694	336	101,619,131			
Jul-14	109,587,464	1,300,570	(70,929)	110,817,105	0.60	77.90	147.96	31	3,006,156	0	139,819	352	111,619,844			
Aug-14	110,696,979	1,099,164	(70,929)	111,725,214	0.90	86.20	148.29	31	3,058,117	0	139,945	320	113,366,597			
Sep-14	97,721,499	4,944,362	(70,929)	102,594,932	42.70	42.30	148.62	30	3,110,077	1	140,071	336	97,907,296			
Oct-14	89,032,201	2,860,295	(70,929)	91,821,567	173.70	5.70	148.95	31	3,162,037	1	140,197	352	96,397,055			
Nov-14	93,451,537	3,682,070	(70,929)	97,062,678	416.00	0.00	149.28	30	3,213,998	1	140,323	320	98,540,661			
Dec-14	102,089,918	4,494,121	(70,929)	106,513,110	509.75	0.00	149.60	31	3,265,958	0	140,448	336	108,469,704			
Jan-15	109,554,911	3,562,298	185,647	113,302,856	696.25	0.00	149.92	31	3,346,851	0	140,574	336	112,967,179			
Feb-15	102,670,598	4,596,564	185,647	107,452,809	776.40	0.00	150.23	28	3,427,744	0	140,700	304	106,783,574			
Mar-15	101,056,829	3,778,683	185,647	105,021,159	596.90	0.00	150.54	31	3,508,638	1	140,826	352	105,474,349			
Apr-15	86,994,586	4,365,903	185,647	91,546,136	325.90	0.04	150.85	30	3,589,531	1	140,952	336	96,057,591			
May-15	92,753,226	4,241,451	185,647	97,180,324	131.80	9.75	151.16	31	3,670,424	1	141,077	320	95,880,086			
Jun-15	96,406,877	4,178,699	185,647	100,771,223	61.20	19.50	151.47	30	3,751,317	0	141,203	352	98,253,778			
Jul-15	116,368,725	3,237,902	185,647	119,792,274	2.60	121.20	151.79	31	3,832,210	0	141,329	352	120,162,007			
Aug-15	110,801,669	4,126,483	185,647	115,113,799	2.20	104.30	152.10	31	3,913,103	0	141,455	320	116,624,389			
Sep-15	106,266,884	3,155,002	185,647	109,607,533	17.10	84.00	152.41	30	3,993,997	1	141,581	336	105,188,705			
Oct-15	87,953,241	3,403,211	185,647	91,542,099	186.05	1.80	152.72	31	4,074,890	1	141,707	336	95,183,093			
Nov-15	88,072,405	4,616,734	185,647	92,874,786	284.45	0.00	153.03	30	4,155,783	1	141,832	336	94,460,465			
Dec-15	94,789,800	4,318,885	185,647	99,294,332	372.95	0.00	153.34	31	4,236,676	0	141,958	336	104,132,191			
Jan-16	103,534,587	4,210,616	168,586	107,913,789	597.29	0.00	153.64	31	4,318,903	0	142,084	320	109,545,380			
Feb-16	94,512,226	4,903,383	168,586	99,584,195	537.40	0.00	153.93	29	4,401,130	0	142,210	320	102,600,071			
Mar-16	94,155,531	4,513,978	168,586	98,838,095	444.60	0.00	154.23	31	4,483,357	1	142,336	352	100,716,220			
Apr-16	87,634,927	4,267,618	168,586	92,071,131	344.40	0.00	154.52	30	4,565,583	1	142,461	336	95,471,175			
May-16	91,346,495	4,015,774	168,586	95,530,855	157.95	31.00	154.81	31	4,647,810	1	142,587	336	99,809,927			
Jun-16	102,451,752	3,915,256	168,586	106,535,594	19.10	66.30	155.11	30	4,730,037	0	142,713	352	105,704,699			
Jul-16	123,874,074	4,029,521	168,586	128,072,181	0.00	166.60	155.40	31	4,812,264	0	142,839	320	128,283,913			
Aug-16	131,634,039	3,905,772	168,586	135,708,397	0.00	198.85	155.69	31	4,894,491	0	142,965	352	134,765,397			
Sep-16	102,319,072	3,194,537	168,586	105,682,195	14.40	88.80	155.99	30	4,976,717	1	143,091	336	105,002,330			
Oct-16	88,216,656	3,433,529	168,586	91,818,771	141.00	11.80	156.28	31	5,058,944	1	143,216	320	95,003,951			
Nov-16	87,354,880	4,171,603	168,586	91,695,069	270.50	0.00	156.58	30	5,141,171	1	143,342	352	92,992,361			
Dec-16	99,813,968	4,398,490	168,586	104,381,044	540.90	0.00	156.87	31	5,223,398	0	143,468	320	107,116,830			
Jan-17	101,034,777	5,226,762	147,069	106,408,608	550.05	0.00	157.24	31	5,325,712	0	143,601	336	107,200,758			
Feb-17	87,554,917	4,231,054	147,069	91,933,040	448.80	0.00	157.60	28	5,428,027	0	143,734	304	96,504,169			
Mar-17	95,725,074	4,288,707	147,069	100,160,850	528.40	0.00	157.97	31	5,530,342	1	143,867	368	101,497,323			
Apr-17	84,183,717	4,830,410	147,069	89,161,196	273.05	0.00	158.33	30	5,632,657	1	144,000	304	92,397,148			
May-17	87,638,822	3,963,517	147,069	91,749,408	181.80	2.80	158.70	31	5,734,971	1	144,133	352	93,276,956			
Jun-17	97,110,013	4,016,690	147,069	101,273,772	27.00	62.80	159.07	30	5,837,286	0	144,266	352	103,771,107			
Jul-17	113,372,512	4,206,468	147,069	117,726,049	0.00	111.60	159.43	31	5,939,601	0	144,399	320	115,608,699			
Aug-17	109,245,844	3,234,481	147,069	112,627,394	0.00	102.00	159.80	31	6,041,916	0	144,532	352	113,510,346			
Sep-17	99,155,311	3,668,563	147,069	102,970,943	25.10	59.50	160.16	30	6,144,230	1	144,665	320	97,738,923			
Oct-17	87,841,862	2,902,664	147,069	90,891,595	93.80	14.90	160.53	31	6,246,545	1	144,798	336	92,880,125			
Nov-17	94,733,238	4,717,832	147,069	99,598,139	381.40	0.00	160.90	30	6,348,860	1	144,931	352	94,072,316			
Dec-17	103,319,503	4,233,651	147,069	107,700,223	617.20	0.00	161.26	31	6,451,175	0	145,064	304	107,301,455			

	Purchased	Embedded Generation	Load Transfers	Total	Heating Degree Days	Cooling Degree Days	Ontario Real GDP Monthly %	Number of Days in Month	CDM kWh Saved in month	Spring Fall Flag	Population	Number of Peak Hours	Predicted Purchases	Variances (kWh)	% Variance	SUMMARY OUTPUT
Jan-18	105,861,989	5,144,977	127,001	111,133,967	647.40	0.00	161.56	31	6,486,225	0	145,197	352	108,153,714			
Feb-18	90,261,757	5,663,956	127,001	96,052,715	498.70	0.00	161.85	28	6,521,275	0	145,330	304	96,543,612			
Mar-18	95,800,839	4,747,155	127,001	100,674,995	518.80	0.00	162.15	31	6,556,325	1	145,463	336	100,327,396			
Apr-18	89,637,359	5,107,019	127,001	94,871,379	434.20	0.00	162.45	30	6,591,375	1	145,597	336	95,671,057			
May-18	91,603,538	4,677,507	127,001	96,408,047	118.50	15.35	162.74	31	6,626,425	1	145,730	352	93,850,752			
Jun-18	100,277,595	4,696,653	127,001	105,101,250	31.90	47.60	163.04	30	6,661,475	0	145,863	336	100,612,123			
Jul-18	127,416,837	3,701,266	127,001	131,245,104	0.00	184.00	163.33	31	6,696,525	0	145,996	336	130,444,238			
Aug-18	123,940,434	4,212,975	127,001	128,280,410	0.00	183.70	163.63	31	6,731,575	0	146,129	352	130,493,837			
Sep-18	103,744,387	4,881,085	127,001	108,752,474	23.90	78.70	163.92	30	6,766,626	1	146,262	304	102,199,497			
Oct-18	90,882,511	2,863,107	127,001	93,872,620	204.65	9.80	164.22	31	6,801,676	1	146,395	352	95,388,067			
Nov-18	94,485,403	4,558,013	127,001	99,170,418	434.30	0.00	164.52	30	6,836,726	1	146,528	352	96,448,933			
Dec-18	100,847,762	4,284,365	127,001	105,259,129	500.80	0.00	164.81	31	6,871,776	0	146,661	304	105,772,840			
Jan-19	107,250,432	4,077,384	127,001	111,454,817	663.40	0.00	165.00	31	6,877,947	0	146,794	352	109,951,889			
Feb-19	95,290,142	5,524,653	127,001	100,941,796	548.30	0.00	165.20	28	6,884,118	0	146,927	304	99,242,793			
Mar-19	99,265,114	4,694,006	127,001	104,086,121	536.40	0.00	165.39	31	6,890,289	1	147,060	336	102,316,941			
Apr-19	87,651,061	5,249,455	127,001	93,027,517	345.90	0.00	165.58	30	6,896,460	1	147,193	336	95,136,539			
May-19	88,332,579	4,884,427	127,001	93,344,007	226.50	0.00	165.77	31	6,902,631	1	147,326	352	95,081,766			
Jun-19	96,231,591	3,660,122	127,001	100,018,715	63.10	30.30	165.96	30	6,908,803	0	147,459	320	99,635,908			
Jul-19	127,560,090	3,532,409	127,001	131,219,500	0.00	155.90	166.16	31	6,914,974	0	147,592	352	126,575,701			
Aug-19	116,518,628	3,879,981	127,001	120,525,610	0.90	112.60	166.35	31	6,921,145	0	147,725	336	117,954,911			
Sep-19	96,264,117	3,742,111	127,001	100,133,230	12.70	47.60	166.54	30	6,927,316	1	147,858	320	97,596,301			
Oct-19	88,992,299	3,664,705	127,001	92,784,005	163.10	3.10	166.73	31	6,933,487	1	147,991	352	95,091,377			
Nov-19	94,564,686	4,270,274	127,001	98,961,961	439.10	0.00	166.93	30	6,939,658	1	148,124	336	98,732,552			
Dec-19	101,790,296	3,952,160	127,001	105,869,457	514.30	0.00	167.12	31	6,945,829	0	148,257	320	108,346,109			
Jan-20	0			0	632.43	0.00	167.34	31	6,933,913	0	148,390	352	111,522,509			
Feb-20	0			0	563.56	0.00	167.56	29	6,921,998	0	148,523	304	104,727,697			
Mar-20	0			0	509.84	0.00	167.79	31	6,910,082	1	148,656	352	104,174,310			
Apr-20	0			0	331.35	0.00	168.01	30	6,898,166	1	148,789	336	97,378,734			
May-20	0			0	156.12	12.51	168.23	31	6,886,250	1	148,922	320	98,592,601			
Jun-20	0			0	32.94	52.11	168.46	30	6,874,334	0	149,055	352	106,120,040			
Jul-20	0			0	0.74	153.16	168.68	31	6,862,418	0	149,188	352	128,901,509			
Aug-20	0			0	0.54	133.48	168.90	31	6,850,502	0	149,321	320	125,158,489			
Sep-20	0			0	30.67	56.57	169.12	30	6,838,586	1	149,454	336	102,911,491			
Oct-20	0			0	171.87	5.92	169.35	31	6,826,670	1	149,587	336	99,015,804			
Nov-20	0			0	365.21	0.00	169.57	30	6,814,754	1	149,720	336	100,141,521			
Dec-20	0			0	518.47	0.00	169.79	31	6,802,838	0	149,854	336	111,760,990			
Jan-21	0			0	632.43	0.00	170.02	31	6,767,599	0	149,987	320	114,934,423			
Feb-21	0			0	563.56	0.00	170.24	28	6,732,359	0	150,120	304	105,549,053			
Mar-21	0			0	509.84	0.00	170.47	31	6,697,120	1	150,253	368	107,785,057			
Apr-21	0			0	331.35	0.00	170.70	30	6,661,881	1	150,386	336	101,088,897			
May-21	0			0	156.12	12.51	170.92	31	6,626,641	1	150,519	320	102,402,180			
Jun-21	0			0	32.94	52.11	171.15	30	6,591,402	0	150,652	352	110,029,036			
Jul-21	0			0	0.74	153.16	171.38	31	6,556,163	0	150,785	336	132,909,921			
Aug-21	0			0	0.54	133.48	171.60	31	6,520,923	0	150,918	336	129,266,318			
Sep-21	0			0	30.67	56.57	171.83	30	6,485,684	1	151,051	336	107,118,736			
Oct-21	0			0	171.87	5.92	172.06	31	6,450,445	1	151,184	320	103,322,466			
Nov-21	0			0	365.21	0.00	172.28	30	6,415,205	1	151,317	352	104,547,599			
Dec-21	0			0	518.47	0.00	172.51	31	6,379,966	0	151,450	336	116,266,484			
					Weather Normal								30,897,343,869			
1996	0	0	0	0									903,090,403	903,090,403		
1997	0	0	0	0									917,326,277	917,326,277		
1998	0	0	0	0									981,903,710	981,903,710		
1999	0	0	0	0									1,033,528,216	1,033,528,216		
2000	0	0	0	0									1,061,516,065	1,061,516,065		
2001	0	0	0	0									1,071,025,654	1,071,025,654		
2002	1,162,710,674	0	0	1,162,710,674									1,166,878,827	4,168,154	0.4%	
2003	1,152,043,160	0	0	1,152,043,160									1,167,516,734	15,473,574	1.3%	
2004	1,205,241,074	0	0	1,205,241,074									1,179,700,628	(25,540,446)	-2.1%	
2005	1,272,191,339	0	0	1,272,191,339									1,271,985,550	(205,789)	0.0%	
2006	1,248,057,840	0	0	1,248,057,840									1,248,261,416	203,577	0.0%	
2007	1,283,916,366	0	0	1,283,916,366									1,273,234,355	(10,682,011)	-0.8%	
2008	1,248,342,618	0	-982,480	1,247,360,138									1,256,017,282	8,657,144	0.7%	
2009	1,217,543,467	0	-735,648	1,216,807,819									1,220,189,722	3,381,903	0.3%	
2010	1,259,586,591	6,286,072	-1,158,026	1,264,714,637									1,253,498,781	(11,215,856)	-0.9%	
2011	1,256,773,343	10,647,402	-1,109,083	1,266,311,662									1,261,411,452	(4,900,210)	-0.4%	
2012	1,250,182,338	11,553,261	-946,148	1,260,789,451									1,270,343,282	9,553,831	0.8%	
2013	1,237,895,470	13,069,574	-856,720	1,250,108,324									1,245,572,289	(4,536,035)	-0.4%	
2014	1,212,491,220	24,714,018	-851,147	1,236,354,091									1,243,209,523	6,855,433	0.6%	
2015	1,193,689,750	47,581,815	2,227,765	1,243,499,330									1,251,167,407	7,668,077	0.6%	
2016	1,206,848,206	48,960,077	2,023,031	1,257,831,314									1,277,012,253	19,180,938	1.6%	
2017	1,160,915,591	49,520,799	1,764,826	1,212,201,216									1,215,759,325	3,558,109	0.3%	
2018	1,214,760,411	54,538,079	1,524,017	1,270,822,507									1,255,906,064	(14,916,442)	-1.2%	
2019	1,199,711,035	51,131,686	1,524,017	1,252,366,738									1,245,662,788	(6,703,950)		
2020	0	0	0	0									1,290,405,695	1,290,405,695		
2021	0	0	0	0									1,335,220,170	1,335,220,170		
Total to 2019	21,982,900,494	318,002,783	2,424,404	22,303,327,680									22,303,327,680	0		
													30,897,343,869	0		
													Check total above sould be zero			

tistics
0.970344821
0.941569072
0.939602646
2634789.966
216

df	*SS*	*MS*	*F*	*Significance F*
7	2.32683E+16	3.32404E+15	478.8226599	1.6041E-124
208	1.44396E+15	6.94212E+12		
215	2.47123E+16			

Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
(174,990,778.15)	25685501.28	-6.812823165	1.01212E-10	-225628065.6	-124353490.7	-225628065.6	-124353491
24,552.47	1266.345306	19.38844781	1.64189E-48	22055.95286	27048.98691	22055.95286	27048.9869
203,919.28	6248.672615	32.63401538	9.07618E-84	191600.4284	216238.128	191600.4284	216238.128
436,555.70	133423.841	3.27194672	0.001250451	173519.3145	699592.0834	173519.3145	699592.083
2,689,974.56	228550.189	11.76973238	7.66335E-25	2239402.796	3140546.324	2239402.796	3140546.32
(4.20)	0.317634529	-13.20945851	2.49174E-29	-4.821975845	-3.569584408	-4.821975845	-3.56958441
(4,890,418.81)	470771.937	-10.38808482	1.24566E-20	-5818514.925	-3962322.699	-5818514.925	-3962322.7
967.96	300.400104	3.22223974	0.001476453	375.7419766	1560.18033	375.7419766	1560.18033

	Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	GS<50	GS>50	Large User	Sentinels	Streetlights	USL
	Weather Normal Projection												
1996	0	903,090,403	903,090,403										
1997	0	917,326,277	917,326,277										
1998	0	981,903,710	981,903,710										
1999	0	1,033,528,216	1,033,528,216										
2000	0	1,061,516,065	1,061,516,065										
2001	0	1,071,025,654	1,071,025,654										
2002	1,162,710,674	1,166,878,827	4,168,154	0.4%		0	0	0	0	0	0	0	0
2003	1,152,043,160	1,167,516,734	15,473,574	1.3%	1.0394	1,108,347,420	418,838,012	126,366,945	553,710,685	0	298,685	6,713,622	2,419,471
2004	1,205,241,074	1,179,700,628	(25,540,446)	-2.1%	1.0615	1,135,405,804	404,285,804	122,937,633	598,431,001	0	299,222	7,027,058	2,425,087
2005	1,272,191,339	1,271,985,550	(205,789)	0.0%	1.0524	1,208,894,249	463,562,202	125,194,926	609,950,002	0	336,743	7,458,446	2,391,930
2006	1,248,057,840	1,248,261,416	203,577	0.0%	1.0539	1,184,184,647	450,017,939	122,020,708	601,216,533	0	317,191	8,236,754	2,375,520
2007	1,283,916,366	1,273,234,355	(10,682,011)	-0.8%	1.0520	1,220,452,820	462,721,168	125,994,115	622,092,059	0	295,243	7,023,291	2,326,944
2008	1,247,360,138	1,256,017,282	8,657,144	0.7%	1.0492	1,188,897,732	450,470,690	122,663,804	605,669,659	0	286,832	7,504,236	2,302,512
2009	1,216,807,819	1,220,189,722	3,381,903	0.3%	1.0474	1,161,778,118	438,952,918	119,930,976	592,972,281	0	294,273	7,271,510	2,356,161
2010	1,264,714,637	1,253,498,781	(11,215,856)	-0.9%	1.0595	1,193,712,076	451,343,387	121,294,614	611,065,862	0	293,544	7,368,898	2,345,772
2011	1,266,311,662	1,261,411,452	(4,900,210)	-0.4%	1.0270	1,232,998,827	418,849,931	129,680,926	675,128,624	0	246,192	7,294,838	1,798,316
2012	1,260,789,451	1,270,343,282	9,553,831	0.8%	1.0385	1,214,015,314	414,592,237	125,465,897	664,095,955	0	267,435	7,329,519	2,264,271
2013	1,250,108,324	1,245,572,289	(4,536,035)	-0.4%	1.0398	1,202,305,265	412,298,278	124,179,905	655,968,805	0	265,619	7,344,781	2,247,877
2014	1,236,354,091	1,243,209,523	6,855,433	0.6%	1.0343	1,195,394,887	416,585,049	129,969,466	639,303,434	0	256,092	7,429,625	1,851,221
2015	1,243,499,330	1,251,167,407	7,668,077	0.6%	1.0400	1,195,656,487	415,749,082	126,134,211	645,074,725	0	223,690	6,899,420	1,575,358
2016	1,257,831,314	1,277,012,253	19,180,938	1.5%	1.0372	1,212,742,877	433,305,471	130,328,462	642,382,592	0	213,770	4,950,220	1,562,362
2017	1,212,201,216	1,215,759,325	3,558,109	0.3%	1.0378	1,168,010,031	410,629,996	127,052,978	624,101,455	0	210,489	4,481,099	1,534,015
2018	1,270,822,507	1,255,906,064	(14,916,442)	-1.2%	1.0380	1,224,357,127	451,047,288	131,255,411	635,816,201	0	220,524	4,494,762	1,522,941
2019	1,252,366,738	1,245,662,788	(6,703,950)	0.0%	1.0350	1,210,020,079	434,759,152	126,741,416	642,357,413	0	218,186	4,379,324	1,564,588
2020	0	1,290,405,695				1,243,650,684							
2021	0	1,335,220,170				1,286,841,405							
							7,348,008,604	2,137,212,392	10,619,337,286	0	4,543,729	113,207,404	34,864,346
							38.6%	11.2%	55.8%	0.0%	0.0%	0.6%	0.2%
Before Supply Facility Loss Factor of 1.0045				5 year average 2015-20	1.0376								
				5 year average 2015-20	1.0376								

Average

2005 to 2006	-1.90%					-2.04%	-2.92%	-2.54%	-1.43%		-5.81%	10.44%	-0.69%
2006 to 2007	2.87%					3.06%	2.82%	3.26%	3.47%		-6.92%	-14.73%	-2.04%
2007 to 2008	-2.85%					-2.59%	-2.65%	-2.64%	-2.64%		-2.85%	6.85%	-1.05%
2008 to 2009	-2.45%					-2.28%	-2.56%	-2.23%	-2.10%		2.59%	-3.10%	2.33%
2009 to 2010	3.94%					2.75%	2.82%	1.14%	3.05%		-0.25%	1.34%	-0.44%
2010 to 2011	0.13%					3.29%	-7.20%	6.91%	10.48%		-16.13%	-1.01%	-23.34%
2011 to 2012	-0.44%					-1.54%	-1.02%	-3.25%	-1.63%		8.63%	0.48%	25.91%
2012 to 2013	-0.85%					-0.96%	-0.55%	-1.02%	-1.22%		-0.68%	0.21%	-0.72%
2013 to 2014	-1.10%					-0.57%	1.04%	4.66%	-2.54%		-3.59%	1.16%	-17.65%
2014 to 2015	0.58%					0.02%	-0.20%	-2.95%	0.90%		-12.65%	-7.14%	-14.90%
2015 to 2016	1.15%					1.43%	4.22%	3.33%	-0.42%		-4.43%	-28.25%	-0.82%
2016 to 2017	-3.63%					-3.69%	-5.23%	-2.51%	-2.85%		-1.53%	-9.48%	-1.81%
2017 to 2018	4.84%					4.82%	9.84%	3.31%	1.88%		4.77%	0.30%	-0.72%
2018 to 2019	-1.45%					-1.17%	-3.61%	-3.44%	1.03%		-1.06%	-2.57%	2.73%

Usage Per Customer

2003							9,853	31,735	640,869	0	513	591	5,733
2004							9,433	30,483	730,685	0	497	606	5,747
2005							10,763	28,216	760,536	0	645	635	5,668
2006							10,292	27,495	690,260	0	534	698	5,629
2007							10,439	29,038	729,299	0	519	589	5,289
2008							10,020	28,794	715,076	0	508	626	5,175
2009							9,592	28,175	695,793	0	520	599	5,190
2010							9,846	27,840	718,056	0	704	597	5,045
2011							9,106	30,111	786,394	0	667	582	4,241
2012							9,038	29,453	776,553	0	779	586	5,904
2013							8,910	28,776	760,337	0	787	578	5,332
2014							8,906	29,692	777,087	0	776	583	4,400
2015							8,742	28,447	825,960	0	670	535	4,395
2016							8,952	29,241	846,354	0	688	376	4,021

2017			8,278	28,203	772,403	0	650	337	4,114
2018			8,963	29,305	804,831	0	708	338	4,275
2019			8,560	28,322	802,947	1	737	328	4,570
2020			8,485	28,121	814,342	0	754	328	4,611
2021			8,410	27,922	825,898	0	771	328	4,552
1999									
2000									
2001									
2002									
2003									
2004			0.9573	0.9606	1.1401	0.0000	0.9685	1.0259	1.0023
2005			1.1411	0.9256	1.0409	0.0000	1.2979	1.0466	0.9863
2006			0.9562	0.9744	0.9076	0.0000	0.8278	1.0992	0.9931
2007			1.0143	1.0561	1.0566	0.0000	0.9717	0.8437	0.9395
2008			0.9599	0.9916	0.9805	0.0000	0.9797	1.0638	0.9785
2009			0.9573	0.9785	0.9730	0.0000	1.0237	0.9570	1.0029
2010			1.0265	0.9881	1.0320	0.0000	1.3528	0.9971	0.9720
2011			0.9248	1.0816	1.0952	0.0000	0.9476	0.9737	0.8406
2012			0.9925	0.9781	0.9875	0.0000	1.1681	1.0074	1.3921
2013			0.9858	0.9770	0.9791	0.0000	1.0102	0.9867	0.9031
2014			0.9996	1.0319	1.0220	0.0000	0.9864	1.0081	0.8252
2015			0.9816	0.9581	1.0629	0.0000	0.8625	0.9177	0.9989
2016			1.0240	1.0279	1.0247	0.0000	1.0279	0.7023	0.9148
2017			0.9246	0.9645	0.9126	0.0000	0.9438	0.8963	1.0232
2018			1.0828	1.0391	1.0420	0.0000	1.0893	1.0029	1.0390
2019			0.9550	0.9665	0.9977	1.0000	1.0416	0.9707	1.0926
Used			0.9912	0.9929	1.0142	0.0000	1.0229	1.0000	0.9873
Geomean			0.9912	0.9929	1.0142	0.0000	1.0229	0.9638	0.9873

Non Weather Corrected Forecast

									Total
2019	1,210,020,079	434,759,152	126,741,416	642,357,413	0	218,186	4,379,324	1,564,588	1,210,020,079
2020	1,224,103,697	435,774,083	126,764,857	655,399,836	0	218,400	4,423,985	1,522,536	1,224,103,697
2021	1,238,456,087	436,791,384	126,788,303	668,707,072	0	218,613	4,469,101	1,481,614	1,238,456,087

Weather Corrected Forecast

									Total
2019	1,210,020,079	434,759,152	126,741,416	642,357,413	0	218,186	4,379,324	1,564,588	1,210,020,079
2020	1,243,650,684	443,039,730	128,878,403	665,567,632	0	218,400	4,423,985	1,522,536	1,243,650,684
2021	1,286,841,405	454,614,210	131,961,769	694,096,099	0	218,613	4,469,101	1,481,614	1,286,841,405
		Weather Normalization Percentage from 2006 Hydro One Study							
% Weather Sensitive		93.50%	93.50%	87.00%	0.00%	0.00%	0.00%	0.00%	Total
2019	0	406,499,807	118,503,224	558,850,950	0	0	0	0	1,083,853,980
2020	19,546,988	407,448,768	118,525,141	570,197,857	0	0	0	0	1,096,171,767
2021	48,385,319	408,399,944	118,547,063	581,775,153	0	0	0	0	1,108,722,160

Allocation of Weather Sensitive Amount

									Total
2019		0	0	0	0	0	0	0	0
2020		7,265,646	2,113,546	10,167,796	0	0	0	0	19,546,988
2021		17,822,825	5,173,467	25,389,026	0	0	0	0	48,385,319

CDM Manual Adjustment to the Load Forecast from 2020 and 2021 Programs on a Net Level

									Total
2020	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0

Weather Corrected Forecast after 2020 and 2021 CDM Adjustments

									Adj Weather Total
2019	1,210,020,079	434,759,152	126,741,416	642,357,413	0	218,186	4,379,324	1,564,588	1,210,020,079
2020	1,243,650,684	443,039,730	128,878,403	665,567,632	0	218,400	4,423,985	1,522,536	1,243,650,684
2021	1,286,841,405	454,614,210	131,961,769	694,096,099	0	218,613	4,469,101	1,481,614	1,286,841,405
	0.00%	0.00%	0.00%	0.00%	#DIV/0!	0.00%	0.00%	0.00%	0.00%
	1.60%	1.67%	1.67%	1.55%	#DIV/0!	0.00%	0.00%	0.00%	1.60%
	3.91%	4.08%	4.08%	3.80%	#DIV/0!	0.00%	0.00%	0.00%	3.91%

% of Total for CDM

2020	#DIV/0!	#DIV/0!	#DIV/0!
2021	#DIV/0!	#DIV/0!	#DIV/0!

Average Number of Customers or Connections

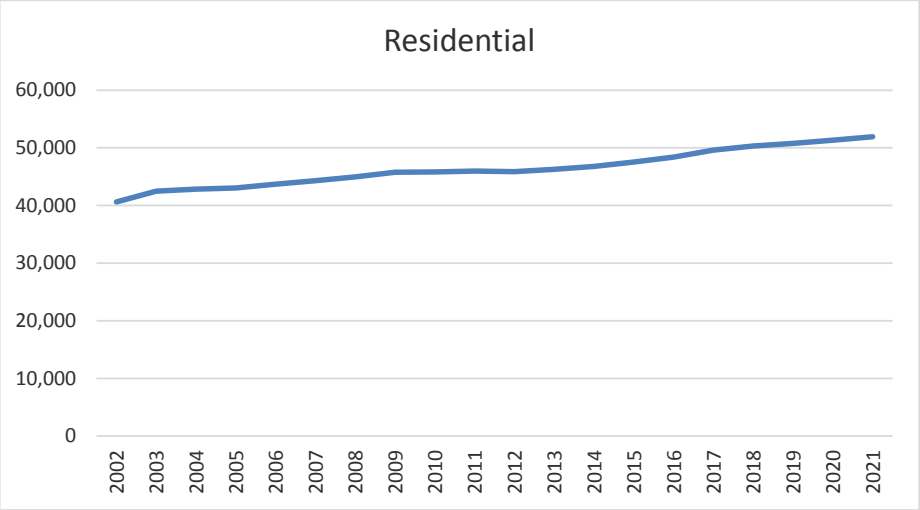
	Residential	GS<50	GS>50	Large User	Sentinels	Streetlights	USL	Total
2002	40,624	4,171	796	0	582	11,157	419	57,749
2003	42,507	3,982	864	0	582	11,358	422	59,715
2004	42,859	4,033	819	0	602	11,588	422	60,323
2005	43,068	4,437	802	0	522	11,752	422	61,003
2006	43,724	4,438	871	0	594	11,807	422	61,856
2007	44,325	4,339	853	0	569	11,933	440	62,459
2008	44,955	4,260	847	0	564	11,986	445	63,057
2009	45,761	4,257	852	0	566	12,136	454	64,026
2010	45,840	4,357	851	0	417	12,334	465	64,264
2011	45,996	4,307	859	0	369	12,540	424	64,494
2012	45,871	4,260	855	0	343	12,507	384	64,220
2013	46,274	4,315	863	0	337	12,702	422	64,913
2014	46,773	4,377	823	0	330	12,745	421	65,469
2015	47,555	4,434	781	0	334	12,897	358	66,360
2016	48,401	4,457	759	0	311	13,177	389	67,493
2017	49,606	4,505	808	0	324	13,308	373	68,924
2018	50,324	4,479	790	0	312	13,310	356	69,571
2019	50,792	4,475	800	0	296	13,360	335	70,058
2020	51,360	4,508	805	0	290	13,496	330	70,789
2021	51,935	4,541	810	0	283	13,634	325	71,528

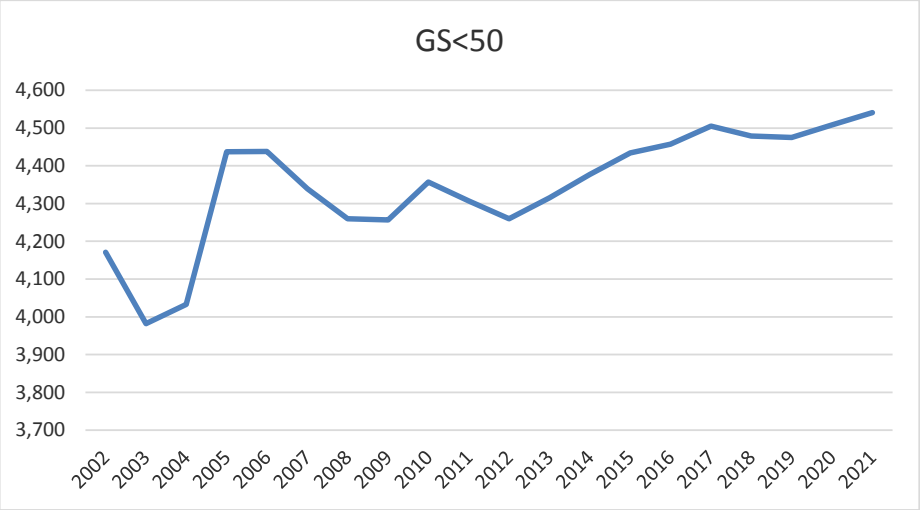
For Graphs

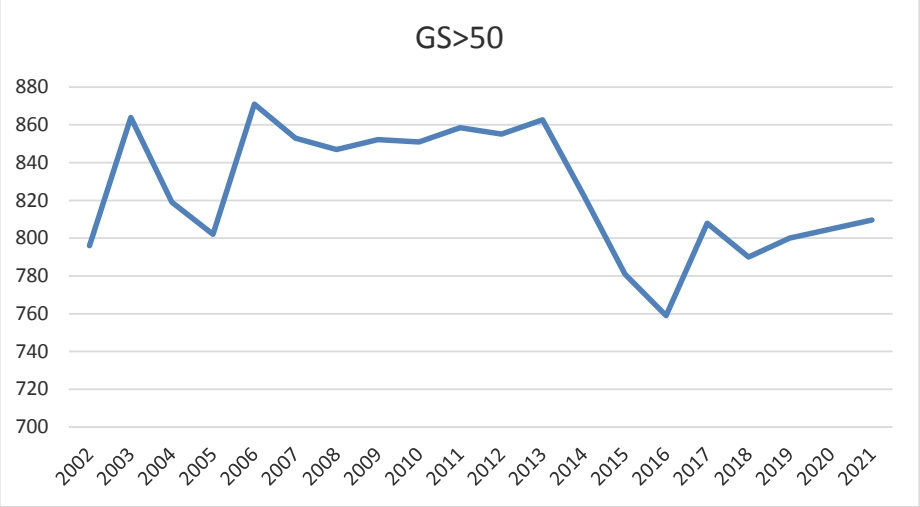
Residential		GS<50		GS>50	
2002	40,624	2002	4,171	2002	796
2003	42,507	2003	3,982	2003	864
2004	42,859	2004	4,033	2004	819
2005	43,068	2005	4,437	2005	802
2006	43,724	2006	4,438	2006	871
2007	44,325	2007	4,339	2007	853
2008	44,955	2008	4,260	2008	847
2009	45,761	2009	4,257	2009	852
2010	45,840	2010	4,357	2010	851
2011	45,996	2011	4,307	2011	859
2012	45,871	2012	4,260	2012	855
2013	46,274	2013	4,315	2013	863
2014	46,773	2014	4,377	2014	823
2015	47,555	2015	4,434	2015	781
2016	48,401	2016	4,457	2016	759
2017	49,606	2017	4,505	2017	808
2018	50,324	2018	4,479	2018	790
2019	50,792	2019	4,475	2019	800
2020	51,360	2020	4,508	2020	805
2021	51,935	2021	4,541	2021	810

Growth Rate in Customer Numbers

1999							
2000							
2001							
2002							
2003							
2004	1.0083	1.0128	0.9479	0.0000	1.0344	1.0203	1.0000
2005	1.0049	1.1002	0.9792	0.0000	0.8671	1.0142	1.0000
2006	1.0152	1.0002	1.0860	0.0000	1.1379	1.0047	1.0000
2007	1.0137	0.9777	0.9793	0.0000	0.9579	1.0107	1.0427
2008	1.0142	0.9818	0.9930	0.0000	0.9917	1.0044	1.0113
2009	1.0179	0.9992	1.0062	0.0000	1.0022	1.0126	1.0203
2010	1.0017	1.0235	0.9986	0.0000	0.7374	1.0163	1.0242
2011	1.0034	0.9885	1.0088	0.0000	0.8851	1.0166	0.9119
2012	0.9973	0.9891	0.9961	0.0000	0.9299	0.9974	0.9045
2013	1.0088	1.0130	1.0088	0.0000	0.9832	1.0156	1.0992
2014	1.0108	1.0143	0.9536	0.0000	0.9774	1.0034	0.9980
2015	1.0167	1.0130	0.9493	0.0000	1.0127	1.0119	0.8519
2016	1.0178	1.0052	0.9718	0.0000	0.9297	1.0217	1.0841
2017	1.0249	1.0108	1.0646	0.0000	1.0433	1.0099	0.9596
2018	1.0145	0.9942	0.9777	0.0000	0.9618	1.0002	0.9555
2019	1.0093	0.9991	1.0127	0.0000	0.9499	1.0038	0.9403
Used	1.0112	1.0073	1.0060	0.0000	0.9786	1.0102	0.9857
Geomean	1.0112	1.0073	0.9952	0.0000	0.9586	1.0102	0.9857


Residential
60,000
50,000
40,000
30,000
20,000
10,000
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


GS<50
4,600
4,500
4,400
4,300
4,200
4,100
4,000
3,900
3,800
3,700
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021


GS>50
880
860
840
820
800
780
760
740
720
700
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

Average Load by Rate Class

	GS>50	Large User	Sentinels	Streetlights	Total	Transformer Allowance Amount	Transformer Allowance Rate	kW for Transformer Allowance	Percentage of kW that Receive Transformer Allowance
1999									
2000									
2001									
2002	1,529,263	0	956	17,456	1,547,675				
2003	1,573,551	0	968	17,588	1,592,107				
2004	1,673,046	0	933	19,480	1,693,459				
2005	1,719,941	0	892	19,789	1,740,622				
2006	1,777,691	0	831	19,932	1,798,454				
2007	1,884,479	0	825	20,188	1,905,492				
2008	1,735,816	0	733	20,371	1,756,920				
2009	1,753,191	0	695	20,319	1,774,205				
2010	1,769,836	0	653	19,656	1,790,145				
2011	1,793,543	0	679	20,391	1,814,614				
2012	1,761,221	0	721	21,037	1,782,980				
2013	1,721,554	0	716	20,809	1,743,079				
2014	1,662,695	0	676	20,750	1,684,121				
2015	1,643,856	0	672	20,270	1,664,798	437,273.77	0.60	728,790	44%
2016	1,616,038	0	643	13,925	1,630,606	441,866.19	0.60	736,444	45%
2017	1,603,355	0	646	12,517	1,616,517	425,381.64	0.60	708,969	44%
2018	1,621,855	0	650	12,519	1,635,024	412,865.65	0.60	688,109	42%
2019	1,639,987	0	643	12,447	1,653,077	429,135	0.60	715,226	43%
2020	1,702,291	0	652	12,418	1,715,361			742,174	
2021	1,775,257	0	653	12,545	1,788,455			773,798	

kW/kWh

1999				
2000				
2001				
2002				
2003	0.2842%	0.0000%	0.3241%	0.2620%
2004	0.2796%	0.0000%	0.3118%	0.2772%
2005	0.2820%	0.0000%	0.2649%	0.2653%
2006	0.2957%	0.0000%	0.2620%	0.2420%
2007	0.3029%	0.0000%	0.2794%	0.2874%
2008	0.2866%	0.0000%	0.2556%	0.2715%
2009	0.2957%	0.0000%	0.2362%	0.2794%
2010	0.2896%	0.0000%	0.2225%	0.2667%
2011	0.2657%	0.0000%	0.2760%	0.2795%
2012	0.2652%	0.0000%	0.2695%	0.2870%
2013	0.2624%	0.0000%	0.2696%	0.2833%
2014	0.2601%	0.0000%	0.2640%	0.2793%
2015	0.2548%	0.0000%	0.3004%	0.2938%
2016	0.2516%	0.0000%	0.3006%	0.2813%
2017	0.2569%	0.0000%	0.3067%	0.2793%
2018	0.2551%	0.0000%	0.2948%	0.2785%
2019	0.2553%	0.0000%	0.2947%	0.2842%
15 Year Aver	0.2724%	0.0000%	0.2755%	0.2772%
3 Year Avera	0.2558%	0.0000%	0.2987%	0.2807%

Long-Term Load Transfer Data

NPEI Geographic (A/P)

		2008	2009	2010	2011	2012
Physical Distributor	**Customer Class**	**kWh**	**kWh**	**kWh**	**kWh**	**kWh**
CNP	Residential	132,652	142,273	145,366	124,739	113,652
NOTL	Residential	110141	132870	129,366	102,698	109,292
Hydro One	Residential	1,006,943	1,039,014	1,096,349	1,225,535	1,246,238
	GS<50	167,608	176,995	169,698	187,767	187,406
	GS>50	0	0	159,816	159,600	161,520
Welland Horizon	Residential	122,030	129,571	137,514	119,214	139,802
Horizon	Residential	201,016	116,619	96,514	75,198	74,601
	GS<50	7434	7,830	7,667	10,596	12,211
Grimsby	Residential	37,880	34,050	33,735	33,000	27,693
	GS<50	4,069	8,280	29,920	12,510	6,930
Total		1,789,773	1,787,502	2,005,945	2,050,856	2,079,345

NPEI Physical (A/R)

		2008	2009	2010	2011	2012
Physical Distributor	**Customer Class**	**kWh**	**kWh**	**kWh**	**kWh**	**kWh**
Hydro One	Residential	1,764,940	1,749,584	1,607,727	1,826,404	1,770,935
	GS<50	458,287	516,008	670,650	335,668	249,984
	GS>50	174,460	70,720	710,920	831,960	838,860
Horizon	Residential	40,303	44,356	39,541	36,332	34,441
Grimsby	Residential	317,659	117,478	115,641	106,860	104,598
	GS<50	16,604	25,004	19,492	22,715	26,675
		2,772,253	2,523,150	3,163,971	3,159,939	3,025,493

Summary Net Load Transfer	**(982,480.00)**	**(735,648.00)**	**(1,158,026.16)**	**(1,109,082.61)**	**(946,148.32)**

Month	Kwh per month
Jan-08	(81,873)
Feb-08	(81,873)
Mar-08	(81,873)
Apr-08	(81,873)
May-08	(81,873)
Jun-08	(81,873)
Jul-08	(81,873)
Aug-08	(81,873)
Sep-08	(81,873)
Oct-08	(81,873)
Nov-08	(81,873)
Dec-08	(81,873)
Jan-09	(61,304)
Feb-09	(61,304)
Mar-09	(61,304)
Apr-09	(61,304)
May-09	(61,304)
Jun-09	(61,304)
Jul-09	(61,304)
Aug-09	(61,304)
Sep-09	(61,304)
Oct-09	(61,304)
Nov-09	(61,304)
Dec-09	(61,304)
Jan-10	(96,502)
Feb-10	(96,502)
Mar-10	(96,502)
Apr-10	(96,502)

May-10	(96,502)
Jun-10	(96,502)
Jul-10	(96,502)
Aug-10	(96,502)
Sep-10	(96,502)
Oct-10	(96,502)
Nov-10	(96,502)
Dec-10	(96,502)
Jan-11	(92,424)
Feb-11	(92,424)
Mar-11	(92,424)
Apr-11	(92,424)
May-11	(92,424)
Jun-11	(92,424)
Jul-11	(92,424)
Aug-11	(92,424)
Sep-11	(92,424)
Oct-11	(92,424)
Nov-11	(92,424)
Dec-11	(92,424)
Jan-12	(78,846)
Feb-12	(78,846)
Mar-12	(78,846)
Apr-12	(78,846)
May-12	(78,846)
Jun-12	(78,846)
Jul-12	(78,846)
Aug-12	(78,846)
Sep-12	(78,846)
Oct-12	(78,846)
Nov-12	(78,846)
Dec-12	(78,846)
	(4,931,385)

Check:	(4,931,385)
Difference	-

Long-Term Load Transfer Data

NPEI Geographic (A/P)

		2013	2013	2014	2014	2015	2015	2016	2016	2017	2017	2018	2018	2019	2019
Physical Distributor	**Customer Class**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**
CNP	Residential	111,246	13,143	111,246	13,143	103,267.32	11,908	97,837	13,585	65,102	9,100				
NOTL	Residential	109,292	12,837	109,292	12,837	106,694.78	13,361	105,904	14,262	48,200	6,717				
	GS<50									24,079	3,321				
Welland Hydro	Residential	153,968	17,949	153,968	17,949	140,737	18,222	145,264	20,585	98,374	14,503				
	GS<50									1,572	237				
Horizon	Residential	174,840	20,787	174,840	20,787	182,454	22,982	154,724	22,145	148,115	21,235				
	GS<50	11,586	1,289	11,586	1,289	13,205	1,564	14,700	1,997	9,177	1,373				
Grimsby	Residential	28,352	3,448	27,063	3,457	25,960	3,618	25,631	3,976	38,409	4,073				
	GS<50	24,373	2,963	37,416	4,699	20,770	2,916	23,091	3,628	47,673	7,399				
Hydro One	Residential	1,217,154	177,102	1,217,154	177,102	1,318,482	199,556	1,158,875	184,658	1,072,639	174,890	1,102,285	185,126	1,102,285	
	GS<50	162,920	20,400	162,920	20,400	168,835	21,993	170,524	24,572	211,484	34,774	373,132	63,544	373,132	
	GS>50	162,240	21,210	162,240	21,210	147,360	20,478	126,480	19,487	0	0	48,600	10,041	48,600	
Total		2,155,972	291,128	2,167,727	292,873	2,227,765	316,597	2,023,031	308,896	1,764,826	277,621	1,524,017	258,711	1,524,017	-

NPEI Physical (A/R)

		2013	2013	2014	2014	2015	2015	2016	2016	2017	2017	2018	2018	2019	2019
Geographical Distributor	**Customer Class**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**	**kWh**	**$**
Horizon	Residential	37,571	4,426	37,571	4,426	35,135	4,448	37,471	5,214	32,094	4,904				
Grimsby	Residential	97,214	12,190	104,719	12,190	104,933	14,368	119,302	18,349	98,372	14,913				
	GS<50	28,686	3,501	27,363	3,501	28,276	3,822	3,708	553	2,036	311				
NOTL	Residential							44,946	6,239	18,703	2,803				
	GS<50							43,806	6,258	24,021	3,662				
CNP	Residential							27,000	7,150	27,857	4,223				
Hydro One	Residential	1,823,409	226,711	1,823,409	226,711	1,244,231	165,170	1,028,685	149,919	962,507	145,099	1,095,173	158,821	1,095,173	
	GS<50	217,892	28,156	217,892	28,156	225,957	29,073	232,547	32,101	620,257	94,452	1,214,063	180,739	1,214,063	
	GS>50	807,920	103,414	807,920	103,414	681,836	85,583	623,440	87,051	512,520	77,170				
Sub-Total (Not including Victoria PME)		3,012,692	378,397	3,018,874	378,397	2,320,368	302,463	2,160,906	312,834	2,298,367	347,535	2,309,236	339,560	2,309,236	0
Victoria PME - accrued based on 2013 LTLT settlement	Residential									670,217	388,754				
	GS<50									1,455	830				
	GS>50									31,600	39,526				
Total LTLT A/R (including Victoria PME)		3,012,692	378,397	3,018,874	378,397	2,320,368	302,463	2,160,906	312,834	3,001,639	776,645	2,309,236	339,560	2,309,236	-

LTLT A/R by Rate Class	Residential	1,958,194	243,326	1,965,699	243,326	1,384,299	183,986	1,257,405	186,871	1,809,750	560,694	1,095,173	158,821	1,095,173	-
	GS<50	246,578	31,657	245,255	31,657	254,233	32,894	280,061	38,911	647,769	99,254	1,214,063	180,739	1,214,063	-
	GS>50	807,920	103,414	807,920	103,414	681,836	85,583	623,440	87,051	544,120	116,696	-	-	-	-
		3,012,692	378,397	3,018,874	378,397	2,320,368	302,463	2,160,906	312,834	3,001,639	776,645	2,309,236	339,560	2,309,236	-

LTLT A/R by Rate Class (revised to exclude Victoria PME)	Residential	1,958,194		1,965,699		1,384,299		1,257,405		1,139,533		1,095,173		1,095,173	
	GS<50	246,578		245,255		254,233		280,061		646,314		1,214,063		1,214,063	
	GS>50	807,920		807,920		681,836		623,440		512,520		-		-	
		3,012,692		3,018,874		2,320,368		2,160,906		2,298,367		2,309,236		2,309,236	
Summary Net Load Transfer		(856,720)		(851,147)		(92,603)		(137,874)		(533,541)		(785,219)		(785,219)	

Month	**Kwh per month**
Jan-13	(71,393)
Feb-13	(71,393)
Mar-13	(71,393)
Apr-13	(71,393)
May-13	(71,393)
Jun-13	(71,393)
Jul-13	(71,393)
Aug-13	(71,393)
Sep-13	(71,393)
Oct-13	(71,393)
Nov-13	(71,393)
Dec-13	(71,393)
Jan-14	(70,929)
Feb-14	(70,929)
Mar-14	(70,929)
Apr-14	(70,929)
May-14	(70,929)
Jun-14	(70,929)
Jul-14	(70,929)
Aug-14	(70,929)
Sep-14	(70,929)
Oct-14	(70,929)
Nov-14	(70,929)
Dec-14	(70,929)
Jan-15	185,647.09
Feb-15	185,647.09
Mar-15	185,647.09
Apr-15	185,647.09
May-15	185,647.09
Jun-15	185,647.09
Jul-15	185,647.09
Aug-15	185,647.09
Sep-15	185,647.09
Oct-15	185,647.09
Nov-15	185,647.09
Dec-15	185,647.09
Jan-16	168,585.94
Feb-16	168,585.94
Mar-16	168,585.94
Apr-16	168,585.94
May-16	168,585.94
Jun-16	168,585.94
Jul-16	168,585.94
Aug-16	168,585.94
Sep-16	168,585.94
Oct-16	168,585.94
Nov-16	168,585.94
Dec-16	168,585.94
Jan-17	147,068.84
Feb-17	147,068.84
Mar-17	147,068.84
Apr-17	147,068.84
May-17	147,068.84
Jun-17	147,068.84
Jul-17	147,068.84
Aug-17	147,068.84
Sep-17	147,068.84
Oct-17	147,068.84
Nov-17	147,068.84
Dec-17	147,068.84
Jan-18	127,001.42
Feb-18	127,001.42
Mar-18	127,001.42
Apr-18	127,001.42
May-18	127,001.42
Jun-18	127,001.42
Jul-18	127,001.42
Aug-18	127,001.42
Sep-18	127,001.42
Oct-18	127,001.42
Nov-18	127,001.42

Dec-18	127,001.42
Jan-19	127,001.42
Feb-19	127,001.42
Mar-19	127,001.42
Apr-19	127,001.42
May-19	127,001.42
Jun-19	127,001.42
Jul-19	127,001.42
Aug-19	127,001.42
Sep-19	127,001.42
Oct-19	127,001.42
Nov-19	127,001.42
Dec-19	127,001.42
	7,355,789
Check:	7,355,789
Difference	-

OPA Conservation & Demand Management Programs

Annual Results at the End-User Level

For: Niagara Peninsula Energy Inc.

Net Summer Peak Demand Savings (MW)

#	Program Year	Results Status	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	2006 Programs	Final	3.0901	0.2039	0.2039	0.2039	0.2039	0.2039	0.1898	0.1898	0.1484	0.1484	0.1484	0.1484	0.1484	0.1484	0.0909	0.0620
2	2007 Programs	Final	0.0000	4.7648	0.5359	0.3880	0.3880	0.3861	0.3712	0.3712	0.3712	0.3296	0.3147	0.2892	0.2892	0.2762	0.2762	0.1401
3	2008 Programs	Final	0.0000	0.0000	6.6749	1.0099	1.0099	1.0099	1.0040	1.0040	0.9912	0.9869	0.9638	0.9374	0.9335	0.9335	0.9233	0.3540
4	2009 Programs	Final	0.0000	0.0000	0.0000	5.7505	0.8720	0.8720	0.8701	0.8556	0.8256	0.8220	0.7988	0.7880	0.5356	0.5288	0.3478	0.3324
5	2010 Programs	Final	0.0000	0.0000	0.0000	0.0000	4.8693	1.0760	1.0755	1.0728	1.0545	1.0076	1.0069	1.0069	0.6948	0.6883	0.4019	0.4019
Total			**3.0901**	**4.9687**	**7.4147**	**7.3524**	**7.3432**	**3.5479**	**3.5106**	**3.4934**	**3.3910**	**3.2946**	**3.2327**	**3.1701**	**2.6016**	**2.5751**	**2.0400**	**1.2904**

Net Energy Savings (MWh)

#	Program Year	Results Status	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	2006 Programs	Final	4,211	4,211	4,211	4,211	731	731	669	669	629	629	594	594	594	594	538	467
2	2007 Programs	Final	0	3,589	2,152	1,974	1,974	1,973	1,908	1,908	1,908	653	515	307	307	307	307	238
3	2008 Programs	Final	0	0	3,033	2,473	2,473	2,473	2,297	2,297	2,113	1,976	1,485	1,276	1,159	1,159	1,142	1,115
4	2009 Programs	Final	0	0	0	4,448	3,613	3,613	3,611	3,522	3,287	3,045	2,940	2,379	1,825	1,522	534	484
5	2010 Programs	Final	0	0	0	0	5,435	4,043	4,037	4,035	3,930	3,511	3,489	3,178	2,515	993	629	629
Total			**4,211**	**7,801**	**9,397**	**13,106**	**14,226**	**12,834**	**12,522**	**12,430**	**11,867**	**9,814**	**9,023**	**7,734**	**6,400**	**4,576**	**3,150**	**2,934**

Gross Summer Peak Demand Savings (MW)

#	Program Year	Results Status	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	2006 Programs	Final	3.1277	0.2416	0.2416	0.2416	0.2416	0.2416	0.2258	0.2258	0.1799	0.1799	0.1799	0.1799	0.1799	0.1799	0.1159	0.0709
2	2007 Programs	Final	0.0000	11.9992	2.8446	1.6122	1.6122	1.6077	1.5299	1.5299	1.5299	1.4635	1.4257	1.3914	1.3914	1.3769	1.3769	0.2429
3	2008 Programs	Final	0.0000	0.0000	7.0825	1.3853	1.3853	1.3853	1.3697	1.3697	1.3418	1.3303	1.2890	1.2386	1.2303	1.2303	1.2070	0.5742
4	2009 Programs	Final	0.0000	0.0000	0.0000	6.2763	1.3930	1.3930	1.3892	1.3590	1.3039	1.2962	1.2678	1.2435	0.9778	0.9624	0.6760	0.6465
5	2010 Programs	Final	0.0000	0.0000	0.0000	0.0000	5.5019	1.7094	1.7094	1.7019	1.6628	1.5754	1.5742	1.5742	1.2590	1.2472	0.7198	0.7198
Total			**3.1277**	**12.2408**	**10.1687**	**9.5153**	**10.1340**	**6.3370**	**6.2241**	**6.1863**	**6.0183**	**5.8453**	**5.7366**	**5.6276**	**5.0384**	**4.9968**	**4.0957**	**2.2543**

Gross Energy Savings (MWh)

#	Program Year	Results Status	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	2006 Programs	Final	4,703	4,703	4,703	4,703	837	837	767	767	722	722	684	684	684	684	621	521
2	2007 Programs	Final	0	17,078	5,211	3,720	3,720	3,719	3,537	3,537	3,537	1,613	1,263	988	988	988	988	411
3	2008 Programs	Final	0	0	5,842	5,113	5,113	5,113	4,655	4,655	4,244	3,879	3,028	2,644	2,413	2,413	2,373	2,341
4	2009 Programs	Final	0	0	0	6,821	5,876	5,876	5,872	5,699	5,256	4,903	4,774	4,026	3,442	2,883	1,314	1,217
5	2010 Programs	Final	0	0	0	0	8,091	6,724	6,723	6,716	6,511	5,638	5,601	5,286	4,610	1,907	1,206	1,206
Total			**4,703**	**21,781**	**15,757**	**20,357**	**23,636**	**22,268**	**21,554**	**21,373**	**20,271**	**16,756**	**15,350**	**13,629**	**12,137**	**8,875**	**6,503**	**5,697**

Summary Achievement Against CDM Targets

Results are recognized using current IESO reporting policies. Energy efficiency resources persist for the duration of the effective useful life. Any upcoming code changes are taken into account. Demand response resources persist for 1 year (Scenario 1). Please see methodology tab for more detailed information.

Table 4: Net Peak Demand Savings at the End User Level (MW) (Scenario 1)

Implementation Period	Annual			
	2011	2012	2013	2014
2011 - Verified	1.4	1.2	1.2	1.1
2012 - Verified†	0.0	1.5	1.3	1.3
2013 - Verified†	0.2	0.3	2.0	1.3
2014 - Verified†	0.1	0.3	0.3	3.1
Verified Net Annual Peak Demand Savings Persisting in 2014:				**6.7**
Niagara Peninsula Energy Inc. 2014 Annual CDM Capacity Target:				**15.5**
Verified Portion of Peak Demand Savings Target Achieved in 2014 (%):				**43.2%**

Table 5: Net Energy Savings at the End User Level (GWh)

Implementation Period	Annual				Cumulative
	2011	2012	2013	2014	2011-2014
2011 - Verified	5.0	5.0	4.9	4.6	19.6
2012 - Verified†	-0.2	5.6	5.6	5.5	16.5
2013 - Verified†	1.3	3.4	7.1	7.1	18.9
2014 - Verified†	1.0	1.5	1.82	10.6	15.0
Verified Net Cumulative Energy Savings 2011-2014:					**69.9**
Niagara Peninsula Energy Inc. 2011-2014 Annual CDM Energy Target:					**58.0**
Verified Portion of Cumulative Energy Target Achieved in 2014 (%):					**120.5%**

†Includes adjustments to previous years' verified results

Results presented using scenario 1 which assumes that demand response resources have a persistence of 1 year

NPEI CDM Programs

Net Energy Savings (MWh)

As reported by the OPA/IESO (Annualized Basis)

		Effect in Year															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Year Reported	2006	4,211	4,211	4,211	4,211	731	731	669	669	629	629	594	594	594	594	538	467
	2007		3,589	2,152	1,974	1,974	1,973	1,908	1,908	1,908	653	515	307	307	307	307	238
	2008			3,033	2,473	2,473	2,297	2,297	2,297	2,113	1,976	1,485	1,276	1,159	1,159	1,142	1,115
	2009				4,448	3,613	3,613	3,611	3,522	3,287	3,045	2,940	2,379	1,825	1,522	534	484
	2010					5,435	4,043	4,037	4,035	3,930	3,511	3,489	3,178	2,515	993	629	629
	2011						5,027	5,019	4,942	4,630	4,505	4,311	3,833	3,831	3,739	3,424	2,664
	2012						-170	5,616	5,563	5,483	4,466	4,132	3,331	3,213	3,210	3,138	2,665
	2013						1,313	3,400	7,082	7,068	7,018	6,802	6,388	6,270	6,262	6,239	4,686
	2014						999	1,516	1,816	10,643	10,564	10,496	10,337	9,752	9,709	9,420	8,242
	2015										14,245	14,904	14,900	14,937	14,928	14,921	14,920
	2016										400	11,147	13,483	13,483	13,396	13,257	13,168
	2017										300	2,335	17,221	15,840	15,791	15,664	15,660
	2018											46	899	8,444	8,366	8,288	8,210
	2019														3,738	3,614	3,495
	2020																
	2021																
	Total	4,211	7,801	9,397	13,106	14,226	20,003	28,073	31,833	39,691	51,311	63,197	78,126	82,170	83,715	81,126	76,645

2020 and 2021 manual adjustments - not included in the regression explanatory variable

Manual Adiustments to Load Forecast:
2020 Bridge Year:

50% of 2020 Initiatives -

2021 Test Year:

100% of 2020 Initiatives
50% of 2021 Initiatives -

Check:

Year	Annual Reported Savings (kWh)	Incremental Savings (Reported Savings less Prior Year)	First Year (Half of Incremental Savings)	Annual Reported Savings Adjusted for 1/2 Year	Annual Incremental Savings	Monthly Increment (Year/78)	Annual Reported Savings Adjusted for 1/2 Year	Sum of CDM Activity Variable	Difference
2006	4,211,271	4,211,271	2,105,636	2,105,636	2,105,636	26,995	2,105,636	2,105,636	-
2007	7,800,592	3,589,321	1,794,660	6,005,932	2,118,604	27,162	6,005,932	6,005,932	-
2008	9,396,789	1,596,197	798,099	8,598,691	800,094	10,258	8,598,691	8,598,691	-
2009	13,106,362	3,709,573	1,854,786	11,251,575	1,975,882	25,332	11,251,575	11,251,575	-
2010	14,225,868	1,119,506	559,753	13,666,115	742,639	9,521	13,666,115	13,666,115	-
2011	20,002,889	5,777,021	2,888,510	17,114,378	2,819,877	36,152	17,114,378	17,114,378	-
2012	28,072,745	8,069,856	4,034,928	24,037,817	4,537,389	58,172	24,037,817	24,037,817	-
2013	31,832,945	3,760,200	1,880,100	29,952,845	2,075,699	26,612	29,952,845	29,952,845	-
2014	39,691,280	7,858,336	3,929,168	35,762,112	4,052,907	51,960	35,762,112	35,762,112	-
2015	51,311,048	11,619,768	5,809,884	45,501,164	6,309,669	80,893	45,501,164	45,501,164	-
2016	63,196,561	11,885,513	5,942,756	57,253,805	6,413,690	82,227	57,253,805	57,253,805	-
2017	78,126,085	14,929,524	7,464,762	70,661,323	7,980,550	102,315	70,661,323	70,661,323	-
2018	82,169,922	4,043,837	2,021,918	80,148,003	2,733,907	35,050	80,148,003	80,148,003	-
2019	83.715.394	1.545.472	772.736	82.942.658	481.348	6.171	82.942.658	82.942.658	-
2020	81,125,626	-2,589,768	-1,294,884	82,420,510	-929,443	-11,916	82,420,510	82,420,510	-
2021	76,645,151	-4,480,475	-2,240,238	78,885,388	-2,748,670	-35,239	78,885,388	78,885,388	-
				646,307,952			646,307,952	646,307,952	-

Jan	1
Feb	2
Mar	3
Apr	4
May	5
Jun	6
Jul	7
Aug	8
Sep	9
Oct	10
Nov	11
Dec	12
Total	78

CDM Activity Variable

Jan-06	26,995		
Feb-06	53,991		
Mar-06	80,986		
Apr-06	107,981		
May-06	134,977		
Jun-06	161,972		
Jul-06	188,967		
Aug-06	215,963		
Sep-06	242,958		
Oct-06	269,953		
Nov-06	296,949		
Dec-06	323,944	2,105,636	3,887,327
Jan-07	351,106		
Feb-07	378,267		
Mar-07	405,429		
Apr-07	432,590		
May-07	459,752		
Jun-07	486,914		
Jul-07	514,075		
Aug-07	541,237		
Sep-07	568,398		
Oct-07	595,560		
Nov-07	622,721		
Dec-07	649,883	6,005,932	7,798,597
Jan-08	660,141		
Feb-08	670,398		
Mar-08	680,656		
Apr-08	690,914		
May-08	701,171		
Jun-08	711,429		
Jul-08	721,686		
Aug-08	731,944		
Sep-08	742,202		
Oct-08	752,459		
Nov-08	762,717		
Dec-08	772,974	8,598,691	9,275,693
Jan-09	798,306		
Feb-09	823,638		
Mar-09	848,970		
Apr-09	874,302		
May-09	899,634		
Jun-09	924,965		
Jul-09	950,297		
Aug-09	975,629		
Sep-09	1,000,961		
Oct-09	1,026,293		
Nov-09	1,051,624		
Dec-09	1,076,956	11,251,575	12,923,476
Jan-10	1,086,477		
Feb-10	1,095,998		
Mar-10	1,105,519		
Apr-10	1,115,040		
May-10	1,124,561		
Jun-10	1,134,082		
Jul-10	1,143,603		
Aug-10	1,153,124		
Sep-10	1,162,645		
Oct-10	1,172,166		
Nov-10	1,181,687		
Dec-10	1,191,208	13,666,115	14,294,502
Jan-11	1,227,361		
Feb-11	1,263,513		
Mar-11	1,299,665		
Apr-11	1,335,818		
May-11	1,371,970		
Jun-11	1,408,122		

Jul-11	1,444,274		
Aug-11	1,480,427		
Sep-11	1,516,579		
Oct-11	1,552,731		
Nov-11	1,588,883		
Dec-11	1,625,036	17,114,378	19,500,428
Jan-12	1,683,207		
Feb-12	1,741,379		
Mar-12	1,799,551		
Apr-12	1,857,722		
May-12	1,915,894		
Jun-12	1,974,066		
Jul-12	2,032,237		
Aug-12	2,090,409		
Sep-12	2,148,581		
Oct-12	2,206,752		
Nov-12	2,264,924		
Dec-12	2,323,096	24,037,817	27,877,146
Jan-13	2,349,707		
Feb-13	2,376,319		
Mar-13	2,402,930		
Apr-13	2,429,542		
May-13	2,456,153		
Jun-13	2,482,765		
Jul-13	2,509,376		
Aug-13	2,535,988		
Sep-13	2,562,599		
Oct-13	2,589,211		
Nov-13	2,615,822		
Dec-13	2,642,434	29,952,845	31,709,205
Jan-14	2,694,394		
Feb-14	2,746,354		
Mar-14	2,798,315		
Apr-14	2,850,275		
May-14	2,902,236		
Jun-14	2,954,196		
Jul-14	3,006,156		
Aug-14	3,058,117		
Sep-14	3,110,077		
Oct-14	3,162,037		
Nov-14	3,213,998		
Dec-14	3,265,958	35,762,112	39,191,495
Jan-15	3,346,851		
Feb-15	3,427,744		
Mar-15	3,508,638		
Apr-15	3,589,531		
May-15	3,670,424		
Jun-15	3,751,317		
Jul-15	3,832,210		
Aug-15	3,913,103		
Sep-15	3,993,997		
Oct-15	4,074,890		
Nov-15	4,155,783		
Dec-15	4,236,676	45,501,164	50,840,115
Jan-16	4,318,903		
Feb-16	4,401,130		
Mar-16	4,483,357		
Apr-16	4,565,583		
May-16	4,647,810		
Jun-16	4,730,037		
Jul-16	4,812,264		
Aug-16	4,894,491		
Sep-16	4,976,717		
Oct-16	5,058,944		
Nov-16	5,141,171		
Dec-16	5,223,398	57,253,805	62,680,773
Jan-17	5,325,712		
Feb-17	5,428,027		
Mar-17	5,530,342		
Apr-17	5,632,657		
May-17	5,734,971		
Jun-17	5,837,286		
Jul-17	5,939,601		
Aug-17	6,041,916		
Sep-17	6,144,230		
Oct-17	6,246,545		
Nov-17	6,348,860		
Dec-17	6,451,175	70,661,323	77,414,096
Jan-18	6,486,225		
Feb-18	6,521,275		
Mar-18	6,556,325		
Apr-18	6,591,375		
May-18	6,626,425		
Jun-18	6,661,475		
Jul-18	6,696,525		
Aug-18	6,731,575		
Sep-18	6,766,626		
Oct-18	6,801,676		
Nov-18	6,836,726		
Dec-18	6,871,776	80,148,003	82,461,309
Jan-19	6,877,947		
Feb-19	6,884,118		
Mar-19	6,890,289		
Apr-19	6,896,460		
May-19	6,902,631		
Jun-19	6,908,803		
Jul-19	6,914,974		
Aug-19	6,921,145		
Sep-19	6,927,316		
Oct-19	6,933,487		
Nov-19	6,939,658		
Dec-19	6,945,829	82,942,658	83,349,952
Jan-20	6,933,913		
Feb-20	6,921,998		
Mar-20	6,910,082		
Apr-20	6,898,166		
May-20	6,886,250		
Jun-20	6,874,334		
Jul-20	6,862,418		
Aug-20	6,850,502		
Sep-20	6,838,586		
Oct-20	6,826,670		
Nov-20	6,814,754		
Dec-20	6,802,838	82,420,510	81,634,059
Jan-21	6,767,599		
Feb-21	6,732,359		
Mar-21	6,697,120		
Apr-21	6,661,881		
May-21	6,626,641		
Jun-21	6,591,402		
Jul-21	6,556,163		
Aug-21	6,520,923		
Sep-21	6,485,684		
Oct-21	6,450,445		
Nov-21	6,415,205		
Dec-21	6,379,966	78,885,388	76,559,590.52
	646,307,952		

2020 Load Forecast	kWh	kW
Residential	443,039,730	
GS<50	128,878,403	
GS>50	665,567,632	1,702,291.09
Sentinels	218,400	652
Streetlights	4,423,985	12,418
USL	1,522,536	
TOTAL	**1,243,650,684**	**1,715,361**

Electricity - Commodity					
Class per Load Forecast	**2020 Forecasted Metered kWhs**	**2020 Loss Factor**	**2020 Weighted Average**		
Residential	443,039,730	1.0479	464,261,333	$0.12799	$59,422,632
GS<50	128,878,403	1.0479	135,051,679	$0.12785	$17,266,610
GS>50	665,567,632	1.0479	697,448,321	$0.11468	$79,982,993
0	0	1.0479	0		
Sentinels	218,400	1.0479	228,861	$0.12803	$29,301
Streetlights	4,423,985	1.0479	4,635,893	$0.12703	$588,898
USL	1,522,536	1.0479	1,595,465	$0.12803	$204,267
TOTAL	**1,243,650,684**		**1,303,221,552**		**$157,494,701**

Transmission - Network		**Volume**			
Class per Load Forecast		**Metric**	**2020**		
Residential		kWh	464,261,333	$0.0074	$3,435,534
GS<50		kWh	135,051,679	$0.0067	$904,846
GS>50		kW	1,702,291	$2.7628	$4,703,090
0		kW	0		$0
Sentinels		kW	652	$2.0455	$1,334
Streetlights		kW	12,418	$2.0884	$25,934
USL		kWh	1,595,465	$0.0067	$10,690
TOTAL					**$9,081,428**

Transmission - Connection		**Volume**			
Class per Load Forecast		**Metric**	**2020**		
Residential		kWh	464,261,333	$0.0054	$2,507,011
GS<50		kWh	135,051,679	$0.0047	$634,743
GS>50		kW	1,702,291	$1.9004	$3,235,034
0		kW	0		$0
Sentinels		kW	652	$1.5881	$1,036
Streetlights		kW	12,418	$1.4600	$18,130
USL		kWh	1,595,465	$0.0047	$7,499
TOTAL					**$6,403,453**

Wholesale Market Service					
Class per Load Forecast			**2020**		
Residential		kWh	464,261,333	$0.0034	$1,578,489
GS<50		kWh	135,051,679	$0.0034	$459,176
GS>50		kWh	697,448,321	$0.0034	$2,436,113
0		kWh	0		$0
Sentinels		kWh	228,861	$0.0034	$778
Streetlights		kWh	4,635,893	$0.0034	$15,762
USL		kWh	1,595,465	$0.0034	$5,425
TOTAL			**1,303,221,552**		**$4,495,742**

OER 31.8%					
			2020		

TOTAL					**($27,147,508)**

Low Voltage					
Class per Load Forecast			**2020**		
Residential		0.0000	443,039,730	$0.0005	$221,520
GS<50		kWh	128,878,403	$0.0004	$51,551
GS>50		kW	1,702,291	$0.1612	$274,409
0		kW	0	$0.1612	$0
Sentinels		kW	652	$0.1347	$88
Streetlights		kW	12,418	$0.1239	$1,539
USL		kWh	1,522,536	$0.0004	$609
TOTAL			**575,156,030**		**$549,716**

Rural Rate Assistance					
Class per Load Forecast			**2020**		
0		0.0000	464,261,333	$0.0005	$232,131
0		kWh	135,051,679	$0.0005	$67,526
0		kWh	697,448,321	$0.0005	$348,724
0		kWh	0	$0.0005	$0
0		kWh	228,861	$0.0005	$114
0		kWh	4,635,893	$0.0005	$2,318
0		kWh	1,595,465	$0.0005	$798
TOTAL			**1,303,221,552**		**$651,611**

Smart Meter Entity Charge					
Class per Customer Forecast			**2020**		
Residential		Customer	616,325	$0.5700	$351,305
GS<50		Customer	54,093	$0.5700	$30,833
TOTAL			**670,418**		**$382,139**

	2020
4705-Power Purchased	$157,494,701
4708-Charges-WMS	$5,147,353
4714-Charges-NW	$9,081,428
4716-Charges-CN	$6,403,453
4750-Low Voltage	$549,716
4751-Smart Meter Entity	$382,139
TOTAL	**$179,058,789**
OER Rebate	($27,147,508)
	$151,911,281

$151,911,281

$0

2021 Load Forecast	kWh	kW
Residential	454,614,210	
GS<50	131,961,769	
GS>50	694,096,099	1,775,257.01
Sentinels	218,613	653
Streetlights	4,469,101	12,545
USL	1,481,614	
TOTAL	**1,286,841,405**	**1,788,455**

Electricity - Commodity					
Class per Load Forecast	**2021 Forecasted Metered kWhs**	**2021 Loss Factor**	**2021 Weighted Average**		
Residential	454,614,210	1.0422	473,806,763	$0.12799	$60,644,389
GS<50	131,961,769	1.0422	137,532,830	$0.12785	$17,583,830
GS>50	694,096,099	1.0422	723,398,915	$0.11519	$83,327,875
0	0	1.0422			
Sentinels	218,613	1.0422	227,843	$0.12803	$29,171
Streetlights	4,469,101	1.0422	4,657,774	$0.12703	$591,677
USL	1,481,614	1.0422	1,544,163	$0.12803	$197,699
TOTAL	**1,286,841,405**		**1,341,168,288**		**$162,374,642**

Transmission - Network		**Volume**			
Class per Load Forecast		**Metric**	**2021**		
Residential		kWh	473,806,763	$0.0072	$3,411,409
GS<50		kWh	137,532,830	$0.0065	$893,963
GS>50		kW	1,775,257	$2.6864	$4,769,050
0		kW	0	$2.6864	$0
Sentinels		kW	653	$1.9889	$1,299
Streetlights		kW	12,545	$2.0306	$25,473
USL		kWh	1,544,163	$0.0065	$10,037
TOTAL					**$9,111,231**

Transmission - Connection		**Volume**			
Class per Load Forecast		**Metric**	**2021**		
Residential		kWh	473,806,763	$0.0052	$2,463,795
GS<50		kWh	137,532,830	$0.0045	$618,898
GS>50		kW	1,775,257	$1.8247	$3,239,311
0		kW	0	$1.8247	$0
Sentinels		kW	653	$1.5248	$996
Streetlights		kW	12,545	$1.4018	$17,585
USL		kWh	1,544,163	$0.0045	$6,949
TOTAL					**$6,347,534**

Wholesale Market Service					
Class per Load Forecast			**2021**		
Residential		kWh	473,806,763	$0.0034	$1,610,943
GS<50		kWh	137,532,830	$0.0034	$467,612
GS>50		kWh	723,398,915	$0.0035	$2,523,994
0		kWh			
Sentinels		kWh	227,843	$0.0034	$775
Streetlights		kWh	4,657,774	$0.0034	$15,836
USL		kWh	1,544,163	$0.0034	$5,250
TOTAL			**1,341,168,288**		**$4,624,410**

OER 31.8% Rebate					
TOTAL			**0**		**($27,819,360)**

Low Voltage					
Class per Load Forecast			**2021**		
Residential		0.0000	454,614,210	$0.0014	$636,460
GS<50		kWh	131,961,769	$0.0012	$158,354
GS>50		kW	1,775,257	$0.4776	$847,863
0		kW	0	$0.4776	$0
Sentinels		kW	653	$0.3991	$261
Streetlights		kW	12,545	$0.3669	$4,603
USL		kWh	1,481,614	$0.0012	$1,778
TOTAL			**589,846,047**		**$1,649,318**

Rural Rate Assistance					
Class per Load Forecast			**2021**		
Residential		0.0000	473,806,763	$0.0005	$236,903
GS<50		kWh	137,532,830	$0.0005	$68,766
GS>50		kWh	723,398,915	$0.0005	$361,699
0		kWh	0	$0.0005	$0
Sentinels		kWh	227,843	$0.0005	$114
Streetlights		kWh	4,657,774	$0.0005	$2,329
USL		kWh	1,544,163	$0.0005	$772
TOTAL			**1,341,168,288**		**$670,584**

Smart Meter Entity Charge					
Class per Customer Forecast			**2021**		
Residential		Customer	623,223	$0.5700	$355,237
GS<50		Customer	54,489	$0.5700	$31,059
TOTAL			**677,712**		**$386,296**

	2021
4705-Power Purchased	$162,374,642
4708-Charges-WMS	$5,294,994
4714-Charges-NW	$9,111,231
4716-Charges-CN	$6,347,534
4750 - Low Voltage	$1,649,318
4751-Smart Meter Entity	$386,296
TOTAL	**$185,164,014**
OER Rebate	($27,819,360)
	$157,344,654

$157,344,654
$0

Calculation of Mean Absolute Percentage Error (MAPE)

$$MAPE = \frac{100\%}{n}\sum_{t=1}^{n}\left|\frac{A_t - F_t}{A_t}\right| \; where\; A_t = actual\; and\; F_t = predicted.$$

Month	Actual kWh	Predicted kWh	Difference	Absolute Value of Difference	Absolute Value of Difference / Actual
Jan-02	98,398,774	97,575,446	823,328	823,328	0.008367258
Feb-02	87,515,454	88,810,540	-1,295,086	1,295,086	0.014798367
Mar-02	94,028,461	92,748,569	1,279,892	1,279,892	0.013611754
Apr-02	86,184,466	85,400,844	783,622	783,622	0.009092382
May-02	85,447,299	86,618,335	-1,171,036	1,171,036	0.013704771
Jun-02	95,651,673	95,195,043	456,630	456,630	0.004773879
Jul-02	119,450,096	125,054,275	-5,604,179	5,604,179	0.046916484
Aug-02	114,483,163	117,828,841	-3,345,678	3,345,678	0.029224189
Sep-02	96,936,653	97,941,334	-1,004,681	1,004,681	0.010364304
Oct-02	90,917,731	89,891,646	1,026,085	1,026,085	0.011285861
Nov-02	90,920,618	88,714,395	2,206,222	2,206,222	0.024265368
Dec-02	102,776,286	101,099,560	1,676,726	1,676,726	0.016314329
Jan-03	104,493,535	104,713,997	-220,462	220,462	0.002109815
Feb-03	96,011,347	94,795,586	1,215,762	1,215,762	0.012662686
Mar-03	95,684,640	96,224,813	-540,173	540,173	0.005645349
Apr-03	86,343,957	90,031,515	-3,687,558	3,687,558	0.042707766
May-03	84,100,206	88,886,707	-4,786,501	4,786,501	0.056914264
Jun-03	90,485,413	96,386,453	-5,901,041	5,901,041	0.065215382
Jul-03	107,838,219	109,822,108	-1,983,889	1,983,889	0.018396899
Aug-03	111,720,633	117,754,337	-6,033,703	6,033,703	0.054007064
Sep-03	90,994,824	87,321,737	3,673,087	3,673,087	0.040365893
Oct-03	90,574,201	89,953,853	620,349	620,349	0.006849065
Nov-03	91,660,392	89,950,232	1,710,160	1,710,160	0.01865757
Dec-03	102,135,791	101,675,396	460,395	460,395	0.004507677
Jan-04	110,906,403	107,786,964	3,119,440	3,119,440	0.028126777
Feb-04	98,773,310	98,417,696	355,614	355,614	0.003600301
Mar-04	100,169,246	96,690,596	3,478,650	3,478,650	0.034727729
Apr-04	89,485,333	90,702,522	-1,217,189	1,217,189	0.013602103
May-04	90,686,143	89,754,617	931,526	931,526	0.010271978
Jun-04	96,517,444	94,242,993	2,274,451	2,274,451	0.023565181
Jul-04	110,297,642	106,884,266	3,413,376	3,413,376	0.030946952
Aug-04	109,063,695	108,260,670	803,025	803,025	0.007362899
Sep-04	103,094,592	97,193,858	5,900,734	5,900,734	0.057236115
Oct-04	93,329,246	91,778,252	1,550,993	1,550,993	0.016618512
Nov-04	94,434,399	92,324,894	2,109,504	2,109,504	0.022338305
Dec-04	108,483,621	105,663,300	2,820,321	2,820,321	0.025997668
Jan-05	111,357,551	109,000,518	2,357,033	2,357,033	0.021166349
Feb-05	97,354,644	98,426,781	-1,072,136	1,072,136	0.011012689
Mar-05	103,696,307	101,690,302	2,006,005	2,006,005	0.019344998
Apr-05	91,002,648	93,557,583	-2,554,934	2,554,934	0.028075386
May-05	90,914,555	93,289,522	-2,374,968	2,374,968	0.026123077
Jun-05	117,110,314	112,670,540	4,439,774	4,439,774	0.037911041
Jul-05	130,492,623	130,770,734	-278,111	278,111	0.002131236
Aug-05	125,304,430	127,369,846	-2,065,416	2,065,416	0.016483188
Sep-05	103,515,709	102,028,354	1,487,355	1,487,355	0.014368398
Oct-05	95,683,703	97,198,338	-1,514,635	1,514,635	0.015829603

Nov-05	95,832,424	95,753,884	78,541	78,541	0.000819562
Dec-05	109,926,431	110,229,148	-302,717	302,717	0.002753817
Jan-06	105,189,786	107,382,367	-2,192,581	2,192,581	0.020844048
Feb-06	97,673,987	100,509,454	-2,835,467	2,835,467	0.029029905
Mar-06	102,138,407	101,932,307	206,100	206,100	0.002017855
Apr-06	89,654,385	94,637,594	-4,983,209	4,983,209	0.05558243
May-06	96,375,371	99,428,579	-3,053,208	3,053,208	0.031680375
Jun-06	106,149,796	106,229,456	-79,660	79,660	0.000750447
Jul-06	129,944,898	129,289,744	655,154	655,154	0.00504178
Aug-06	120,333,539	116,571,808	3,761,731	3,761,731	0.031260871
Sep-06	95,914,535	92,493,142	3,421,393	3,421,393	0.035671264
Oct-06	99,436,287	96,535,533	2,900,754	2,900,754	0.029171984
Nov-06	98,699,343	96,512,717	2,186,626	2,186,626	0.022154411
Dec-06	106,547,506	106,738,717	-191,210	191,210	0.001794602
Jan-07	110,076,804	110,038,384	38,421	38,421	0.000349034
Feb-07	106,214,903	103,966,846	2,248,057	2,248,057	0.021165171
Mar-07	105,901,314	103,691,634	2,209,680	2,209,680	0.020865465
Apr-07	96,871,140	97,274,410	-403,270	403,270	0.004162951
May-07	96,387,835	97,763,171	-1,375,337	1,375,337	0.014268777
Jun-07	113,036,516	110,280,404	2,756,111	2,756,111	0.024382486
Jul-07	116,239,482	118,308,853	-2,069,370	2,069,370	0.017802645
Aug-07	124,879,950	125,346,204	-466,254	466,254	0.003733619
Sep-07	104,023,176	100,205,248	3,817,928	3,817,928	0.036702663
Oct-07	99,226,202	98,038,171	1,188,031	1,188,031	0.011972953
Nov-07	100,079,144	98,120,176	1,958,967	1,958,967	0.019574183
Dec-07	110,979,900	110,200,853	779,048	779,048	0.007019719
Jan-08	109,511,198	110,055,268	-544,070	544,070	0.004968169
Feb-08	104,697,002	105,565,848	-868,847	868,847	0.008298678
Mar-08	105,342,736	104,750,917	591,819	591,819	0.005618029
Apr-08	86,730,113	96,022,765	-9,292,653	9,292,653	0.107144477
May-08	95,591,666	95,967,049	-375,383	375,383	0.003926941
Jun-08	106,359,411	106,897,394	-537,983	537,983	0.005058159
Jul-08	120,281,780	119,598,115	683,665	683,665	0.005683864
Aug-08	112,895,210	113,622,010	-726,801	726,801	0.006437833
Sep-08	101,394,891	97,447,989	3,946,902	3,946,902	0.038926043
Oct-08	95,461,452	96,251,231	-789,780	789,780	0.008273282
Nov-08	97,537,400	98,698,819	-1,161,419	1,161,419	0.011907422
Dec-08	111,557,280	111,139,876	417,404	417,404	0.003741614
Jan-09	117,644,799	113,463,527	4,181,272	4,181,272	0.035541492
Feb-09	97,575,928	100,579,851	-3,003,922	3,003,922	0.030785486
Mar-09	101,971,897	102,849,446	-877,549	877,549	0.008605797
Apr-09	92,172,703	95,178,762	-3,006,059	3,006,059	0.032613337
May-09	90,679,049	94,464,296	-3,785,247	3,785,247	0.041743351
Jun-09	97,810,557	100,244,982	-2,434,425	2,434,425	0.024889182
Jul-09	106,317,706	105,937,966	379,740	379,740	0.003571745
Aug-09	118,314,176	118,437,089	-122,913	122,913	0.001038872
Sep-09	96,760,283	93,366,257	3,394,027	3,394,027	0.035076651
Oct-09	93,898,385	94,697,569	-799,184	799,184	0.008511162
Nov-09	93,733,129	93,737,076	-3,947	3,947	4.21097E-05
Dec-09	109,929,208	107,232,901	2,696,307	2,696,307	0.024527669
Jan-10	112,728,743	109,416,572	3,312,171	3,312,171	0.029381783
Feb-10	99,258,445	98,997,688	260,757	260,757	0.002627053
Mar-10	100,040,210	99,479,588	560,623	560,623	0.005603972
Apr-10	89,357,236	92,493,642	-3,136,406	3,136,406	0.035099632
May-10	98,050,856	96,872,115	1,178,741	1,178,741	0.012021731

Jun-10	106,969,130	104,213,775	2,755,355	2,755,355	0.02575841
Jul-10	130,192,001	129,989,213	202,788	202,788	0.001557611
Aug-10	125,435,396	124,243,972	1,191,425	1,191,425	0.009498312
Sep-10	99,514,707	96,611,678	2,903,030	2,903,030	0.029171867
Oct-10	94,152,765	95,388,054	-1,235,288	1,235,288	0.013120041
Nov-10	97,120,412	95,908,959	1,211,453	1,211,453	0.012473726
Dec-10	111,894,733	109,883,526	2,011,207	2,011,207	0.017974097
Jan-11	113,829,885	111,769,113	2,060,772	2,060,772	0.018103964
Feb-11	102,120,252	101,238,989	881,264	881,264	0.008629665
Mar-11	106,849,783	103,136,812	3,712,971	3,712,971	0.034749448
Apr-11	94,087,029	95,902,132	-1,815,102	1,815,102	0.019291739
May-11	95,311,649	95,593,036	-281,387	281,387	0.002952286
Jun-11	104,481,388	101,407,940	3,073,448	3,073,448	0.029416229
Jul-11	132,315,624	135,170,865	-2,855,241	2,855,241	0.021579016
Aug-11	120,979,110	124,835,320	-3,856,210	3,856,210	0.031875007
Sep-11	101,456,692	96,201,147	5,255,545	5,255,545	0.051800874
Oct-11	95,202,185	95,473,264	-271,079	271,079	0.002847401
Nov-11	94,439,501	94,364,845	74,656	74,656	0.000790517
Dec-11	105,238,563	106,317,990	-1,079,427	1,079,427	0.010256952
Jan-12	109,223,578	108,504,994	718,584	718,584	0.006579021
Feb-12	99,573,605	101,317,362	-1,743,757	1,743,757	0.017512243
Mar-12	96,940,329	98,926,267	-1,985,938	1,985,938	0.020486187
Apr-12	90,395,437	94,467,893	-4,072,456	4,072,456	0.045051564
May-12	100,200,864	96,853,828	3,347,036	3,347,036	0.033403265
Jun-12	110,427,096	114,001,522	-3,574,427	3,574,427	0.032369107
Jul-12	134,019,462	136,151,248	-2,131,785	2,131,785	0.015906535
Aug-12	122,137,537	124,936,566	-2,799,030	2,799,030	0.022917029
Sep-12	100,247,713	98,181,149	2,066,564	2,066,564	0.020614576
Oct-12	95,198,440	94,885,350	313,090	313,090	0.003288816
Nov-12	97,032,089	96,290,249	741,840	741,840	0.007645307
Dec-12	105,393,299	105,826,853	-433,554	433,554	0.004113676
Jan-13	110,326,119	108,193,282	2,132,837	2,132,837	0.019332115
Feb-13	99,801,280	100,434,744	-633,464	633,464	0.006347256
Mar-13	103,245,324	102,287,986	957,338	957,338	0.009272457
Apr-13	93,034,751	95,566,066	-2,531,315	2,531,315	0.027208276
May-13	96,429,712	96,649,092	-219,380	219,380	0.002275021
Jun-13	102,793,146	103,006,844	-213,698	213,698	0.00207891
Jul-13	124,848,660	123,483,934	1,364,726	1,364,726	0.010931041
Aug-13	115,527,156	116,776,266	-1,249,110	1,249,110	0.010812261
Sep-13	98,249,630	95,858,730	2,390,900	2,390,900	0.024334954
Oct-13	95,945,978	95,286,693	659,285	659,285	0.006871414
Nov-13	99,306,959	97,870,990	1,435,968	1,435,968	0.014459897
Dec-13	110,599,610	110,157,662	441,948	441,948	0.003995924
Jan-14	117,947,745	113,307,951	4,639,794	4,639,794	0.039337707
Feb-14	102,702,838	103,328,052	-625,214	625,214	0.006087602
Mar-14	107,746,936	106,262,238	1,484,698	1,484,698	0.013779487
Apr-14	89,388,272	96,754,250	-7,365,978	7,365,978	0.082404297
May-14	92,633,303	95,636,744	-3,003,441	3,003,441	0.032422912
Jun-14	105,400,390	101,619,131	3,781,259	3,781,259	0.035875194
Jul-14	110,817,105	111,619,844	-802,739	802,739	0.007243822
Aug-14	111,725,214	113,366,597	-1,641,383	1,641,383	0.014691245
Sep-14	102,594,932	97,907,296	4,687,636	4,687,636	0.045690717
Oct-14	91,821,567	96,397,055	-4,575,488	4,575,488	0.04983021
Nov-14	97,062,678	98,540,661	-1,477,982	1,477,982	0.015227092
Dec-14	106,513,110	108,469,704	-1,956,594	1,956,594	0.018369513

Jan-15	113,302,856	112,967,179	335,677	335,677	0.002962652
Feb-15	107,452,809	106,783,574	669,235	669,235	0.006228172
Mar-15	105,021,159	105,474,349	-453,191	453,191	0.004315231
Apr-15	91,546,136	96,057,591	-4,511,455	4,511,455	0.04928067
May-15	97,180,324	95,880,086	1,300,238	1,300,238	0.013379641
Jun-15	100,771,223	98,253,778	2,517,445	2,517,445	0.024981786
Jul-15	119,792,274	120,162,007	-369,732	369,732	0.003086446
Aug-15	115,113,799	116,624,389	-1,510,589	1,510,589	0.013122573
Sep-15	109,607,533	105,188,705	4,418,828	4,418,828	0.040315005
Oct-15	91,542,099	95,183,093	-3,640,994	3,640,994	0.03977398
Nov-15	92,874,786	94,460,465	-1,585,679	1,585,679	0.017073303
Dec-15	99,294,332	104,132,191	-4,837,859	4,837,859	0.048722411
Jan-16	107,913,789	109,545,380	-1,631,591	1,631,591	0.015119395
Feb-16	99,584,195	102,600,071	-3,015,876	3,015,876	0.030284687
Mar-16	98,838,095	100,716,220	-1,878,125	1,878,125	0.019002034
Apr-16	92,071,131	95,471,175	-3,400,044	3,400,044	0.036928446
May-16	95,530,855	99,809,927	-4,279,072	4,279,072	0.044792569
Jun-16	106,535,594	105,704,699	830,895	830,895	0.007799222
Jul-16	128,072,181	128,283,913	-211,731	211,731	0.001653218
Aug-16	135,708,397	134,765,397	943,000	943,000	0.006948724
Sep-16	105,682,195	105,002,330	679,865	679,865	0.006433105
Oct-16	91,818,771	95,003,951	-3,185,180	3,185,180	0.034689855
Nov-16	91,695,069	92,992,361	-1,297,292	1,297,292	0.014147894
Dec-16	104,381,044	107,116,830	-2,735,786	2,735,786	0.026209606
Jan-17	106,408,608	107,200,758	-792,150	792,150	0.007444416
Feb-17	91,933,040	96,504,169	-4,571,129	4,571,129	0.049722374
Mar-17	100,160,850	101,497,323	-1,336,473	1,336,473	0.013343267
Apr-17	89,161,196	92,397,148	-3,235,952	3,235,952	0.036293277
May-17	91,749,408	93,276,956	-1,527,548	1,527,548	0.016649131
Jun-17	101,273,772	103,771,107	-2,497,336	2,497,336	0.024659255
Jul-17	117,726,049	115,608,699	2,117,350	2,117,350	0.0179854
Aug-17	112,627,394	113,510,346	-882,952	882,952	0.007839585
Sep-17	102,970,943	97,738,923	5,232,020	5,232,020	0.050810643
Oct-17	90,891,595	92,880,125	-1,988,530	1,988,530	0.021878045
Nov-17	99,598,139	94,072,316	5,525,823	5,525,823	0.055481183
Dec-17	107,700,223	107,301,455	398,769	398,769	0.00370258
Jan-18	111,133,967	108,153,714	2,980,253	2,980,253	0.026816764
Feb-18	96,052,715	96,543,612	-490,897	490,897	0.005110704
Mar-18	100,674,995	100,327,396	347,599	347,599	0.003452684
Apr-18	94,871,379	95,671,057	-799,678	799,678	0.008429071
May-18	96,408,047	93,850,752	2,557,295	2,557,295	0.026525742
Jun-18	105,101,250	100,612,123	4,489,126	4,489,126	0.042712397
Jul-18	131,245,104	130,444,238	800,866	800,866	0.006102064
Aug-18	128,280,410	130,493,837	-2,213,426	2,213,426	0.017254592
Sep-18	108,752,474	102,199,497	6,552,976	6,552,976	0.060255883
Oct-18	93,872,620	95,388,067	-1,515,447	1,515,447	0.016143656
Nov-18	99,170,418	96,448,933	2,721,485	2,721,485	0.027442511
Dec-18	105,259,129	105,772,840	-513,711	513,711	0.00488044
Jan-19	111,454,817	109,951,889	1,502,928	1,502,928	0.013484639
Feb-19	100,941,796	99,242,793	1,699,003	1,699,003	0.016831513
Mar-19	104,086,121	102,316,941	1,769,180	1,769,180	0.016997271
Apr-19	93,027,517	95,136,539	-2,109,021	2,109,021	0.022670941
May-19	93,344,007	95,081,766	-1,737,759	1,737,759	0.018616718
Jun-19	100,018,715	99,635,908	382,806	382,806	0.003827345
Jul-19	131,219,500	126,575,701	4,643,799	4,643,799	0.035389552

Aug-19	120,525,610	117,954,911	2,570,699	2,570,699	0.021329072
Sep-19	100,133,230	97,596,301	2,536,929	2,536,929	0.025335531
Oct-19	92,784,005	95,091,377	-2,307,372	2,307,372	0.024868212
Nov-19	98,961,961	98,732,552	229,409	229,409	0.002318156
Dec-19	105,869,457	108,346,109	-2,476,651	2,476,651	0.023393446

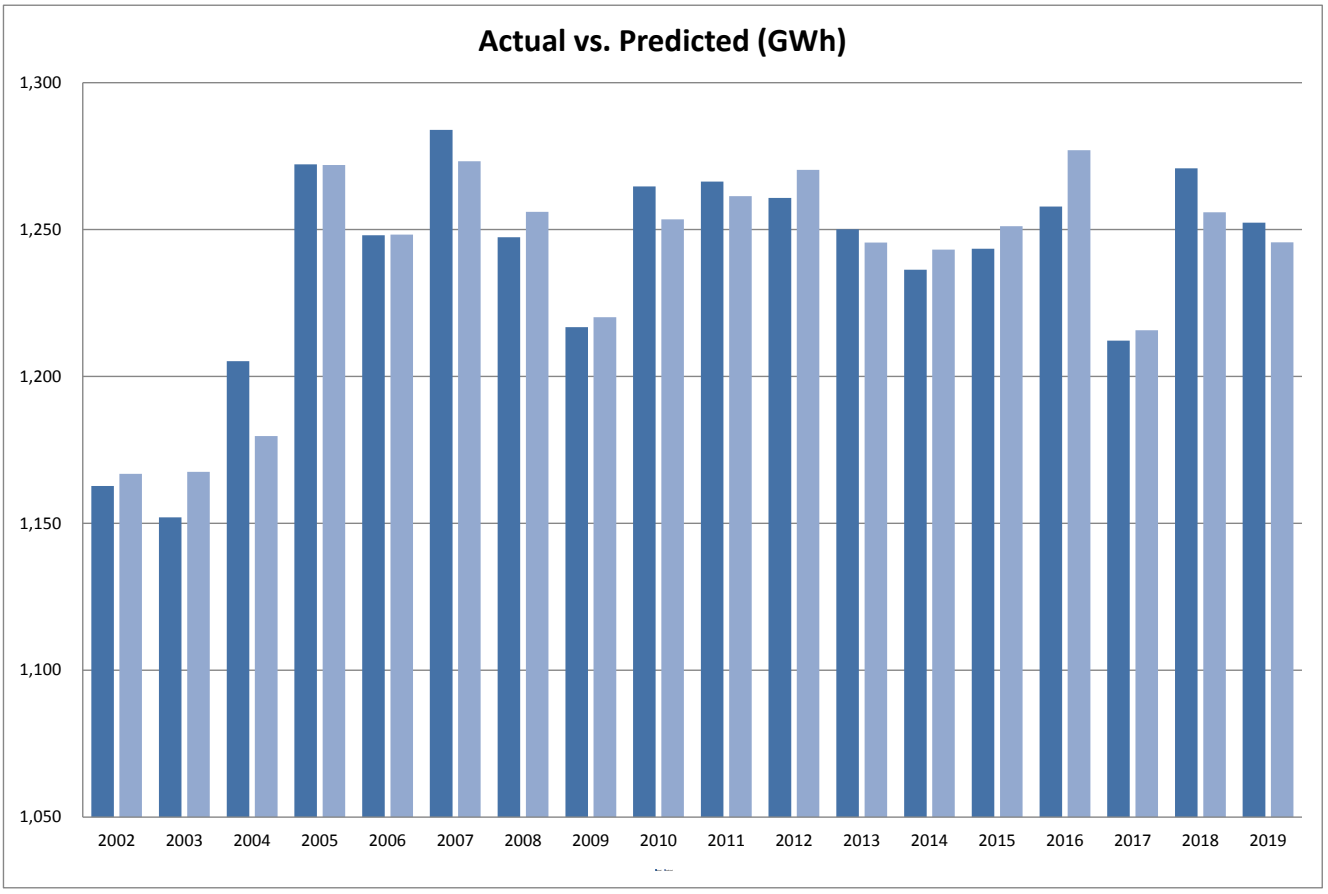
n = # observations	216
MAPE	**2.01%**

Month	Actual	Predicted	Residual (e)	$e_t - e_{t-1}$		
Jan-02	98,398,774	97,575,446	823,328		n =	216
Feb-02	87,515,454	88,810,540	(1,295,086)	(2,118,414)	d =	1.818038
Mar-02	94,028,461	92,748,569	1,279,892	2,574,978		
Apr-02	86,184,466	85,400,844	783,622	(496,270)		
May-02	85,447,299	86,618,335	(1,171,036)	(1,954,658)		
Jun-02	95,651,673	95,195,043	456,630	1,627,665		
Jul-02	119,450,096	125,054,275	(5,604,179)	(6,060,808)		
Aug-02	114,483,163	117,828,841	(3,345,678)	2,258,501		
Sep-02	96,936,653	97,941,334	(1,004,681)	2,340,997		
Oct-02	90,917,731	89,891,646	1,026,085	2,030,766		
Nov-02	90,920,618	88,714,395	2,206,222	1,180,137		
Dec-02	102,776,286	101,099,560	1,676,726	(529,496)		
Jan-03	104,493,535	104,713,997	(220,462)	(1,897,188)		
Feb-03	96,011,347	94,795,586	1,215,762	1,436,224		
Mar-03	95,684,640	96,224,813	(540,173)	(1,755,935)		
Apr-03	86,343,957	90,031,515	(3,687,558)	(3,147,384)		
May-03	84,100,206	88,886,707	(4,786,501)	(1,098,944)		
Jun-03	90,485,413	96,386,453	(5,901,041)	(1,114,539)		
Jul-03	107,838,219	109,822,108	(1,983,889)	3,917,152		
Aug-03	111,720,633	117,754,337	(6,033,703)	(4,049,815)		
Sep-03	90,994,824	87,321,737	3,673,087	9,706,791		
Oct-03	90,574,201	89,953,853	620,349	(3,052,739)		
Nov-03	91,660,392	89,950,232	1,710,160	1,089,812		
Dec-03	102,135,791	101,675,396	460,395	(1,249,765)		
Jan-04	110,906,403	107,786,964	3,119,440	2,659,045		
Feb-04	98,773,310	98,417,696	355,614	(2,763,826)		
Mar-04	100,169,246	96,690,596	3,478,650	3,123,037		
Apr-04	89,485,333	90,702,522	(1,217,189)	(4,695,839)		
May-04	90,686,143	89,754,617	931,526	2,148,715		
Jun-04	96,517,444	94,242,993	2,274,451	1,342,925		
Jul-04	110,297,642	106,884,266	3,413,376	1,138,925		
Aug-04	109,063,695	108,260,670	803,025	(2,610,351)		
Sep-04	103,094,592	97,193,858	5,900,734	5,097,709		
Oct-04	93,329,246	91,778,252	1,550,993	(4,349,741)		
Nov-04	94,434,399	92,324,894	2,109,504	558,511		
Dec-04	108,483,621	105,663,300	2,820,321	710,817		
Jan-05	111,357,551	109,000,518	2,357,033	(463,288)		
Feb-05	97,354,644	98,426,781	(1,072,136)	(3,429,169)		
Mar-05	103,696,307	101,690,302	2,006,005	3,078,141		
Apr-05	91,002,648	93,557,583	(2,554,934)	(4,560,939)		
May-05	90,914,555	93,289,522	(2,374,968)	179,967		
Jun-05	117,110,314	112,670,540	4,439,774	6,814,742		
Jul-05	130,492,623	130,770,734	(278,111)	(4,717,885)		
Aug-05	125,304,430	127,369,846	(2,065,416)	(1,787,306)		
Sep-05	103,515,709	102,028,354	1,487,355	3,552,771		
Oct-05	95,683,703	97,198,338	(1,514,635)	(3,001,990)		
Nov-05	95,832,424	95,753,884	78,541	1,593,176		
Dec-05	109,926,431	110,229,148	(302,717)	(381,258)		
Jan-06	105,189,786	107,382,367	(2,192,581)	(1,889,864)		
Feb-06	97,673,987	100,509,454	(2,835,467)	(642,886)		
Mar-06	102,138,407	101,932,307	206,100	3,041,567		
Apr-06	89,654,385	94,637,594	(4,983,209)	(5,189,309)		
May-06	96,375,371	99,428,579	(3,053,208)	1,930,001		

Jun-06	106,149,796	106,229,456	(79,660)	2,973,548
Jul-06	129,944,898	129,289,744	655,154	734,813
Aug-06	120,333,539	116,571,808	3,761,731	3,106,578
Sep-06	95,914,535	92,493,142	3,421,393	(340,339)
Oct-06	99,436,287	96,535,533	2,900,754	(520,639)
Nov-06	98,699,343	96,512,717	2,186,626	(714,128)
Dec-06	106,547,506	106,738,717	(191,210)	(2,377,836)
Jan-07	110,076,804	110,038,384	38,421	229,631
Feb-07	106,214,903	103,966,846	2,248,057	2,209,636
Mar-07	105,901,314	103,691,634	2,209,680	(38,376)
Apr-07	96,871,140	97,274,410	(403,270)	(2,612,950)
May-07	96,387,835	97,763,171	(1,375,337)	(972,067)
Jun-07	113,036,516	110,280,404	2,756,111	4,131,448
Jul-07	116,239,482	118,308,853	(2,069,370)	(4,825,481)
Aug-07	124,879,950	125,346,204	(466,254)	1,603,116
Sep-07	104,023,176	100,205,248	3,817,928	4,284,182
Oct-07	99,226,202	98,038,171	1,188,031	(2,629,897)
Nov-07	100,079,144	98,120,176	1,958,967	770,937
Dec-07	110,979,900	110,200,853	779,048	(1,179,920)
Jan-08	109,511,198	110,055,268	(544,070)	(1,323,118)
Feb-08	104,697,002	105,565,848	(868,847)	(324,776)
Mar-08	105,342,736	104,750,917	591,819	1,460,665
Apr-08	86,730,113	96,022,765	(9,292,653)	(9,884,471)
May-08	95,591,666	95,967,049	(375,383)	8,917,270
Jun-08	106,359,411	106,897,394	(537,983)	(162,600)
Jul-08	120,281,780	119,598,115	683,665	1,221,648
Aug-08	112,895,210	113,622,010	(726,801)	(1,410,466)
Sep-08	101,394,891	97,447,989	3,946,902	4,673,702
Oct-08	95,461,452	96,251,231	(789,780)	(4,736,681)
Nov-08	97,537,400	98,698,819	(1,161,419)	(371,639)
Dec-08	111,557,280	111,139,876	417,404	1,578,823
Jan-09	117,644,799	113,463,527	4,181,272	3,763,867
Feb-09	97,575,928	100,579,851	(3,003,922)	(7,185,194)
Mar-09	101,971,897	102,849,446	(877,549)	2,126,373
Apr-09	92,172,703	95,178,762	(3,006,059)	(2,128,510)
May-09	90,679,049	94,464,296	(3,785,247)	(779,188)
Jun-09	97,810,557	100,244,982	(2,434,425)	1,350,823
Jul-09	106,317,706	105,937,966	379,740	2,814,164
Aug-09	118,314,176	118,437,089	(122,913)	(502,653)
Sep-09	96,760,283	93,366,257	3,394,027	3,516,940
Oct-09	93,898,385	94,697,569	(799,184)	(4,193,211)
Nov-09	93,733,129	93,737,076	(3,947)	795,237
Dec-09	109,929,208	107,232,901	2,696,307	2,700,254
Jan-10	112,728,743	109,416,572	3,312,171	615,864
Feb-10	99,258,445	98,997,688	260,757	(3,051,414)
Mar-10	100,040,210	99,479,588	560,623	299,865
Apr-10	89,357,236	92,493,642	(3,136,406)	(3,697,029)
May-10	98,050,856	96,872,115	1,178,741	4,315,147
Jun-10	106,969,130	104,213,775	2,755,355	1,576,614
Jul-10	130,192,001	129,989,213	202,788	(2,552,566)
Aug-10	125,435,396	124,243,972	1,191,425	988,636
Sep-10	99,514,707	96,611,678	2,903,030	1,711,605
Oct-10	94,152,765	95,388,054	(1,235,288)	(4,138,318)
Nov-10	97,120,412	95,908,959	1,211,453	2,446,742
Dec-10	111,894,733	109,883,526	2,011,207	799,753

Jan-11	113,829,885	111,769,113	2,060,772	49,565
Feb-11	102,120,252	101,238,989	881,264	(1,179,509)
Mar-11	106,849,783	103,136,812	3,712,971	2,831,707
Apr-11	94,087,029	95,902,132	(1,815,102)	(5,528,073)
May-11	95,311,649	95,593,036	(281,387)	1,533,715
Jun-11	104,481,388	101,407,940	3,073,448	3,354,836
Jul-11	132,315,624	135,170,865	(2,855,241)	(5,928,689)
Aug-11	120,979,110	124,835,320	(3,856,210)	(1,000,969)
Sep-11	101,456,692	96,201,147	5,255,545	9,111,755
Oct-11	95,202,185	95,473,264	(271,079)	(5,526,624)
Nov-11	94,439,501	94,364,845	74,656	345,735
Dec-11	105,238,563	106,317,990	(1,079,427)	(1,154,083)
Jan-12	109,223,578	108,504,994	718,584	1,798,011
Feb-12	99,573,605	101,317,362	(1,743,757)	(2,462,341)
Mar-12	96,940,329	98,926,267	(1,985,938)	(242,181)
Apr-12	90,395,437	94,467,893	(4,072,456)	(2,086,518)
May-12	100,200,864	96,853,828	3,347,036	7,419,492
Jun-12	110,427,096	114,001,522	(3,574,427)	(6,921,463)
Jul-12	134,019,462	136,151,248	(2,131,785)	1,442,641
Aug-12	122,137,537	124,936,566	(2,799,030)	(667,244)
Sep-12	100,247,713	98,181,149	2,066,564	4,865,594
Oct-12	95,198,440	94,885,350	313,090	(1,753,474)
Nov-12	97,032,089	96,290,249	741,840	428,750
Dec-12	105,393,299	105,826,853	(433,554)	(1,175,394)
Jan-13	110,326,119	108,193,282	2,132,837	2,566,391
Feb-13	99,801,280	100,434,744	(633,464)	(2,766,301)
Mar-13	103,245,324	102,287,986	957,338	1,590,802
Apr-13	93,034,751	95,566,066	(2,531,315)	(3,488,653)
May-13	96,429,712	96,649,092	(219,380)	2,311,936
Jun-13	102,793,146	103,006,844	(213,698)	5,682
Jul-13	124,848,660	123,483,934	1,364,726	1,578,423
Aug-13	115,527,156	116,776,266	(1,249,110)	(2,613,836)
Sep-13	98,249,630	95,858,730	2,390,900	3,640,010
Oct-13	95,945,978	95,286,693	659,285	(1,731,616)
Nov-13	99,306,959	97,870,990	1,435,968	776,684
Dec-13	110,599,610	110,157,662	441,948	(994,021)
Jan-14	117,947,745	113,307,951	4,639,794	4,197,846
Feb-14	102,702,838	103,328,052	(625,214)	(5,265,008)
Mar-14	107,746,936	106,262,238	1,484,698	2,109,912
Apr-14	89,388,272	96,754,250	(7,365,978)	(8,850,675)
May-14	92,633,303	95,636,744	(3,003,441)	4,362,536
Jun-14	105,400,390	101,619,131	3,781,259	6,784,701
Jul-14	110,817,105	111,619,844	(802,739)	(4,583,999)
Aug-14	111,725,214	113,366,597	(1,641,383)	(838,643)
Sep-14	102,594,932	97,907,296	4,687,636	6,329,019
Oct-14	91,821,567	96,397,055	(4,575,488)	(9,263,124)
Nov-14	97,062,678	98,540,661	(1,477,982)	3,097,506
Dec-14	106,513,110	108,469,704	(1,956,594)	(478,612)
Jan-15	113,302,856	112,967,179	335,677	2,292,271
Feb-15	107,452,809	106,783,574	669,235	333,558
Mar-15	105,021,159	105,474,349	(453,191)	(1,122,425)
Apr-15	91,546,136	96,057,591	(4,511,455)	(4,058,264)
May-15	97,180,324	95,880,086	1,300,238	5,811,693
Jun-15	100,771,223	98,253,778	2,517,445	1,217,207
Jul-15	119,792,274	120,162,007	(369,732)	(2,887,178)

Aug-15	115,113,799	116,624,389	(1,510,589)	(1,140,857)
Sep-15	109,607,533	105,188,705	4,418,828	5,929,417
Oct-15	91,542,099	95,183,093	(3,640,994)	(8,059,822)
Nov-15	92,874,786	94,460,465	(1,585,679)	2,055,314
Dec-15	99,294,332	104,132,191	(4,837,859)	(3,252,180)
Jan-16	107,913,789	109,545,380	(1,631,591)	3,206,268
Feb-16	99,584,195	102,600,071	(3,015,876)	(1,384,285)
Mar-16	98,838,095	100,716,220	(1,878,125)	1,137,751
Apr-16	92,071,131	95,471,175	(3,400,044)	(1,521,919)
May-16	95,530,855	99,809,927	(4,279,072)	(879,029)
Jun-16	106,535,594	105,704,699	830,895	5,109,967
Jul-16	128,072,181	128,283,913	(211,731)	(1,042,626)
Aug-16	135,708,397	134,765,397	943,000	1,154,731
Sep-16	105,682,195	105,002,330	679,865	(263,136)
Oct-16	91,818,771	95,003,951	(3,185,180)	(3,865,045)
Nov-16	91,695,069	92,992,361	(1,297,292)	1,887,888
Dec-16	104,381,044	107,116,830	(2,735,786)	(1,438,494)
Jan-17	106,408,608	107,200,758	(792,150)	1,943,636
Feb-17	91,933,040	96,504,169	(4,571,129)	(3,778,979)
Mar-17	100,160,850	101,497,323	(1,336,473)	3,234,656
Apr-17	89,161,196	92,397,148	(3,235,952)	(1,899,479)
May-17	91,749,408	93,276,956	(1,527,548)	1,708,404
Jun-17	101,273,772	103,771,107	(2,497,336)	(969,788)
Jul-17	117,726,049	115,608,699	2,117,350	4,614,686
Aug-17	112,627,394	113,510,346	(882,952)	(3,000,302)
Sep-17	102,970,943	97,738,923	5,232,020	6,114,972
Oct-17	90,891,595	92,880,125	(1,988,530)	(7,220,550)
Nov-17	99,598,139	94,072,316	5,525,823	7,514,353
Dec-17	107,700,223	107,301,455	398,769	(5,127,054)
Jan-18	111,133,967	108,153,714	2,980,253	2,581,485
Feb-18	96,052,715	96,543,612	(490,897)	(3,471,150)
Mar-18	100,674,995	100,327,396	347,599	838,496
Apr-18	94,871,379	95,671,057	(799,678)	(1,147,277)
May-18	96,408,047	93,850,752	2,557,295	3,356,973
Jun-18	105,101,250	100,612,123	4,489,126	1,931,831
Jul-18	131,245,104	130,444,238	800,866	(3,688,260)
Aug-18	128,280,410	130,493,837	(2,213,426)	(3,014,292)
Sep-18	108,752,474	102,199,497	6,552,976	8,766,403
Oct-18	93,872,620	95,388,067	(1,515,447)	(8,068,424)
Nov-18	99,170,418	96,448,933	2,721,485	4,236,933
Dec-18	105,259,129	105,772,840	(513,711)	(3,235,196)
Jan-19	111,454,817	109,951,889	1,502,928	2,016,639
Feb-19	100,941,796	99,242,793	1,699,003	196,075
Mar-19	104,086,121	102,316,941	1,769,180	70,177
Apr-19	93,027,517	95,136,539	(2,109,021)	(3,878,201)
May-19	93,344,007	95,081,766	(1,737,759)	371,262
Jun-19	100,018,715	99,635,908	382,806	2,120,565
Jul-19	131,219,500	126,575,701	4,643,799	4,260,993
Aug-19	120,525,610	117,954,911	2,570,699	(2,073,100)
Sep-19	100,133,230	97,596,301	2,536,929	(33,771)
Oct-19	92,784,005	95,091,377	(2,307,372)	(4,844,301)
Nov-19	98,961,961	98,732,552	229,409	2,536,782
Dec-19	105,869,457	108,346,109	(2,476,651)	(2,706,061)


Actual vs. Predicted (GWh)
1,300
1,250
1,200
1,150
1,100
1,050
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
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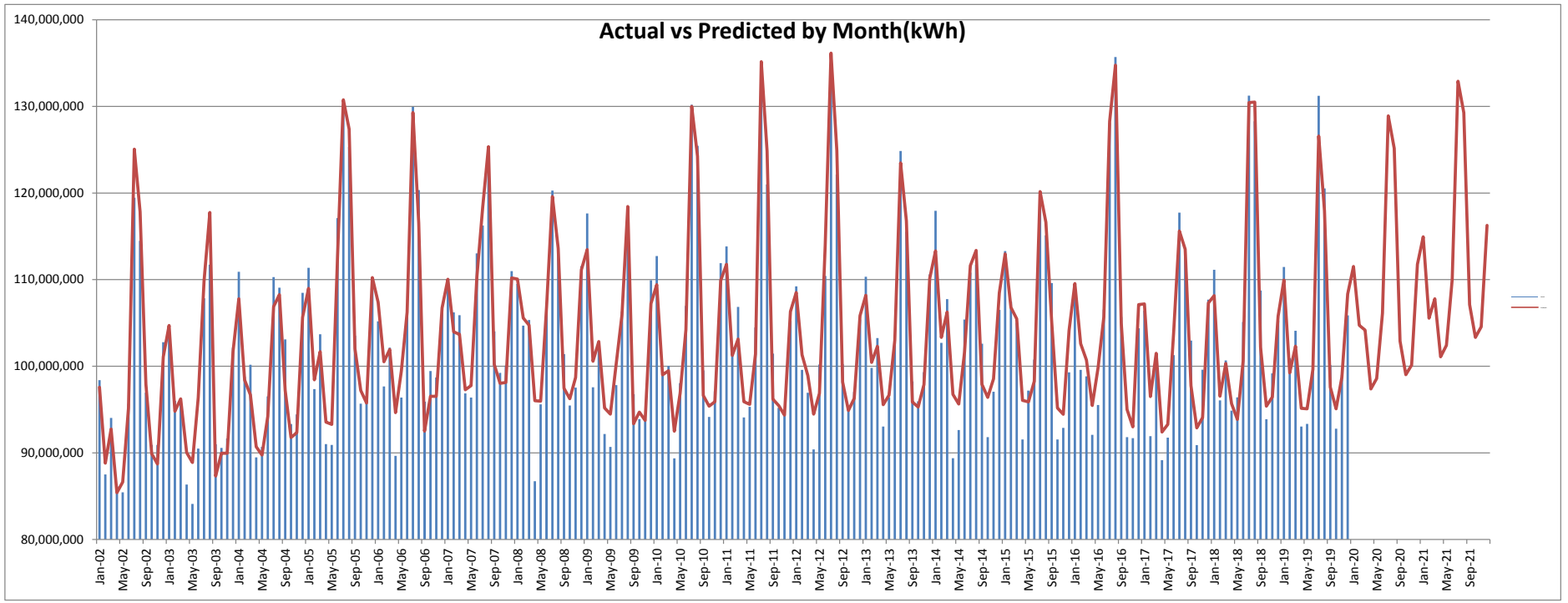
2018
2019


Actual vs Predicted by Month(kWh)
140,000,000
130,000,000
120,000,000
110,000,000
100,000,000
90,000,000
80,000,000
Jan-02
May-02
Sep-02
Jan-03
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May-21
Sep-21

2018 Historical Actuals (No Losses)

Rate Class	Class A	Class B RPP	Class B Non-RPP
Residential		433,712,793	16,229,967
General Service < 50 kW		107,287,502	23,252,666
General Service 50 to 4999 kW	154,666,015	26,842,526	452,318,403
Unmetered Scattered Load		1,530,550	-
Sentinel Lighting		220,524	-
Street Lighting		-	4,494,762
Total	**154,666,015**	**569,593,895**	**496,295,798**

2020 Bridge (No Losses)

Rate Class	Class A	Class B RPP	Class B Non-RPP
Residential		427,058,763	15,980,967
General Service < 50 kW		105,921,741	22,956,662
General Service 50 to 4999 kW	213,939,484	25,300,144	426,328,004
Unmetered Scattered Load		1,522,536	
Sentinel Lighting		218,400	
Street Lighting			4,423,985
Total	**213,939,484**	**560,021,584**	**469,689,617**

2020 Loss Factor **1.0479**

2020 Bridge (With Losses)

Rate Class	Class A	Class B RPP	Class B Non-RPP
Residential		447,514,877.44	16,746,455.12
General Service < 50 kW		110,995,393	24,056,286
General Service 50 to 4999 kW	224,187,185	26,512,021	446,749,116
Unmetered Scattered Load		1,595,465	-
Sentinel Lighting		228,861	-
Street Lighting		-	4,635,893
Total	**224,187,185**	**586,846,617**	**492,187,750**

2021 Test (No Losses)

Rate Class	Class A	Class B RPP	Class B Non-RPP
Residential		438,215,738	16,398,472
General Service < 50 kW		108,455,879	23,505,891
General Service 50 to 4999 kW	213,939,484	26,898,304	453,258,311
Unmetered Scattered Load		1,481,614	
Sentinel Lighting		218,613	
Street Lighting			4,469,101
Total	**213,939,484**	**575,270,148**	**497,631,774**

2021 Loss Factor **1.0422**

2021 Test (With Losses)

Rate Class	Class A	Class B RPP	Class B Non-RPP
Residential		456,715,993	17,090,770
General Service < 50 kW		113,034,586	24,498,245
General Service 50 to 4999 kW	222,971,416	28,033,876	472,393,622
Unmetered Scattered Load		1,544,163	-
Sentinel Lighting		227,843	-
Street Lighting		-	4,657,774
Total	**222,971,416**	**599,556,461**	**518,640,410**

Total	RPP %	Non-RPP %	
449,942,761	96.4%	3.6%	2018 Class A GA Total $
130,540,168	82.2%	17.8%	2018 Class A kWh with Loss
633,826,945	5.6%	94.4%	2018 Class A GA per kWh
1,530,550	100.0%	0.0%	
220,524	100.0%	0.0%	
4,494,762	0.0%	100.0%	
1,220,555,709			

	kW		
Total	**RPP**	**Non-RPP**	**Total**
443,039,730			
128,878,403			
665,567,632	64,709	1,637,582	1,702,291
1,522,536			
218,400	652	-	652
4,423,985	-	12,418	12,418
1,243,650,684			

Total
464,261,333
135,051,679
697,448,321
1,595,465
228,861
4,635,893
1,303,221,552

	kW		
Total	**RPP**	**Non-RPP**	**Total**
454,614,210			
131,961,769			
694,096,099	68,797	1,706,460	1,775,257
1,481,614			
218,613	653	-	653
4,469,101	-	12,545	12,545
1,286,841,405			

Total
473,806,763
137,532,830
723,398,915
1,544,163
227,843
4,657,774
1,341,168,288

11,085,748.56	2018 Class A CBR Total $	46,838.65
162,074,516.99	2018 Class A kWh with Loss	162,074,516.99
0.0684	2018 Class A CBR per kWh	0.0003

Appendix 3-2

OEB Appendix 2-I

Load Forecast CDM Adjustment Workform

File Number:	EB-2020-0040
Exhibit:	3
Tab:	1
Schedule:	4
Page:	
Date:	8/31/2020

Appendix 2-I
Load Forecast CDM Adjustment Work Form

Appendix 2-I was initially developed to help determine what would be the amount of CDM savings needed in each year to cumulatively achieve the four year 2011-2014 CDM target. This then determined the amount of kWh (and with translation, kW of demand) savings that were converted into dollar balances for the LRAMVA, and also to determine the related adjustment to the load forecast to account for OPA-reported savings. Beginning in the 2015 year, it was adjusted because the persistence of 2011-2014 CDM programs will be an adjustment to the load forecast in addition to the estimated savings for the first year (2015) for the new 2015-2020 CDM plan. This appendix has been updated for 2020 rate applications to acknowledge that in accordance with the Minister of Energy's March 20, 2019 Directive to the IESO, the Conservation First Framework (CFF) is no longer in effect. As distributors are no longer working towards the former 2015-2020 CDM targets, for 2019 and 2020 activity only CDM projects that are subject to a contractual agreement entered into between the distributor and a customer by April 30, 2019 under a former CFF program should be included in the proposed CDM manual adjustment to the load forecast. Distributors should provide relevant documentation to support the manual adjustments for 2019 and 2020 CDM projects, including the corresponding CFF program, project timelines and projected savings. For any savings from new projects that begin on or after May 1, 2019 that are under the IESO's interim framework (May 1, 2019 to December 31, 2020), distributors should not include these savings as part of the 2020 CDM manual adjustment.

2019-2020 CDM Activities

For the first year of the new 2015-2020 CDM plan, for simplicity it was assumed that each year's program will achieve an equal amount of new CDM savings. This resulted in each year's program being about 1/6 (or 16.67%) of the cumulative 2015-2020 CDM target for kWh savings. A distributor could have proposed an alternative approach but would have been expected to document in its application why it believes that its proposal is more reasonable.

For 2020 rate applications, distributors should ensure that the sum of the results for the 2015 to 2018 program years is consistent with the results provided by the IESO. For 2019 and 2020 program years, the projected CDM savings should not match the distributor's CDM Plan or its 2015-2020 CDM targets. Rather, for 2019 and 2020 CDM activity, distributors should only include the projected CDM savings from projects that are subject to contractual agreements between the distributor and customer made on or before April 30, 2019 under the former CFF.

Former CFF 6 Year (2015-2020) kWh Target*							
			74,440,000				
	2015	2016	2017	2018	2019	2020	Total
			%				
2015 CDM Programs						26.76%	20.04%
2016 CDM Programs						23.79%	17.82%
2017 CDM Programs						21.04%	21.04%
2018 CDM Programs						11.13%	11.13%
2019 CDM Programs						4.86%	4.86%
2020 CDM Programs						0.00%	0.00%
Total in Year						**87.59%**	**74.90%**
			kWh				
2015 CDM Programs	14,944,324.70	14,903,851.00	14,900,461.00	14,936,910.00	14,927,942.00	14,921,023.00	14,921,023.00
2016 CDM Programs		13,528,111.48	13,482,546.00	13,482,546.00	13,395,726.00	13,266,517.00	13,266,517.00
2017 CDM Programs			18,120,053.32	15,839,537.00	15,790,899.00	15,663,962.00	15,663,962.00
2018 CDM Programs				8,444,324.87	8,366,134.72	8,287,944.57	8,287,944.57
2019 CDM Programs					3,737,504.83	3,614,443.98	3,614,443.98
2020 CDM Programs							0.00
Total in Year	14,944,324.70	28,431,962.48	46,503,060.32	52,703,317.87	56,218,206.55	**55,753,890.55**	**74,440,000.00**
						Inputs do no match 2015-20 CDM target	

*This total will not equal the distributor's former CFF CDM target. Rather, for 2019 and 2020, the distributor should only include the projected savings from projects that are subject to contractual agreements made between the LDC and a customer on or before April 30, 2019 under the former CFF.

Note: The default formulae in the above table assume that the 2015-2020 kWh CDM target is achieved through persistence of CDM savings to the end of 2020. The distributor should enter measured CDM savings for 2015, 2016, 2017 and 2018, and the persistence of 2015, 2016, 2017 and 2018 programs for 2018-2020 in rows 34, 35, 36 and 37. Distributors should rely on the Participant and Cost monthly reports provided by the IESO for 2018 CDM savings which can be entered into row 37. The distributor should include only those projected CDM savings in 2019 and 2020 from projects that it has contractual obligations with a customer on or before April 30, 2019 under the former CFF.

Determination of 2021 Load Forecast Adjustment

The OEB determined that the "net" number should be used in its Decision and Order with respect to Centre Wellington Hydro Ltd.'s 2013 Cost of Service rates (EB-2012-0113). This approach has also been used in Settlement Agreements accepted by the OEB in other 2013 and 2014 applications. The distributor should select whether the adjustment is done on a "net" or "gross" basis, but must support a proposal for the adjustment being done on a "gross" basis. Sheet 2-I defaults to the adjustment being done on a "net" basis consistent with OEB policy and practice.

From each of the 2006-2010 CDM Final Report, and the 2011 to 2017 CDM Final Reports, issued by the OPA/IESO for the distributor, the distributor should input the "gross" and "net" results of the cumulative CDM savings for 2018 into cells C57 to C63 and D57 to D63. The model will calculate the cumulative savings for all programs from 2006 to 2016 and determine the "net" to "gross" factor "g".

Net-to-Gross Conversion

Is CDM adjustment being done on a "net" or "gross" basis? **net**

Persistence of Historical CDM programs to 2015	"Gross" kWh	"Net" kWh	Difference kWh	"Net-to-Gross" Conversion Factor ('g')
2006-2010 CDM programs		**2,933,896.22**	- **2,933,896.22**	
2011 CDM program		**2,663,993.92**	- **2,663,993.92**	
2012 CDM program		**2,664,937.10**	- **2,664,937.10**	
2013 CDM program		**4,686,222.73**	- **4,686,222.73**	
2014 CDM program		**8,242,252.46**	- **8,242,252.46**	
2015 CDM program		**14,919,981.00**	- **14,919,981.00**	
2016 CDM program		**13,167,997.00**	- **13,167,997.00**	
2017 CDM program		**15,659,950.00**	- **15,659,950.00**	
2018 CDM program*		**8,210,485.18**	- **8,210,485.18**	
2019 CDM program*		**3,495,435.03**	- **3,495,435.03**	
2006 to 2019 OPA/IESO CDM programs: Persistence to 2021.	0	76,645,150.65	- 76,645,150.65	0.00%

*For 2018 CDM programs distributors should rely on the results made available by the IESO in the Participant and Cost monthly reports

The default values below represent the factor used for how each year's CDM program is factored into the manual CDM adjustment. Distributors can choose alternative weights of "0", "0.5" or "1" from the drop-down menu for each cell, but must support its alternatives.

These factors do not mean that CDM programs are excluded, but the assumption that impacts of previous year CDM programs are already implicitly reflected in the actual data for historical years that are used to derive the load forecast prior to any manual CDM adjustment for the 2020 test year.

Weight Factor for Inclusion in CDM Adjustment to 2020 Load Forecast

	2015	2016	2017	2018*	2019**	2020**	
Weight Factor for each year's CDM program impact on 2020 load forecast	**0**	**0**	**0**	**0**	**0**	**0**	Distributor can select "0", "0.5", or "1" from drop-down list
Default Value selection rationale.	*Full year impact of 2015 CDM is assumed to be reflected in the base forecast, as the full year persistence of 2015 CDM programs is in the 2018 historical actual data. No further impact is necessary for the manual adjustment to the load forecast.*	*Full year impact of 2016 CDM is assumed to be reflected in the base forecast, as the full year persistence of 2016 CDM programs is in the 2018 historical actual data. No further impact is necessary for the manual adjustment to the load forecast.*	*Full year impact of 2017 CDM is assumed to be reflected in the base forecast, as the full year persistence of 2017 CDM programs is in the 2018 historical actual data. No further impact is necessary for the manual adjustment to the load forecast.*	*Default is 0.5, but one option is for full year impact of persistence of 2018 CDM programs on 2020 load forecast, but 50% impact in base forecast (first year impact of 2018 CDM programs on 2018 actuals, which is part of the data underlying the base load forecast).*	*Full year impact of persistence of 2019 programs on 2020 load forecast. 2019 CDM program impacts are not in the base forecast.*	*Only 50% of 2019 CDM programs are assumed to impact the 2020 load forecast based on the "half-year" rule.*	

* For 2018 CDM programs distributors should rely on the results made available by the IESO in the Participant and Cost monthly reports

** For 2019 and 2020 CDM program activity, the distributor should include only those projected CDM savings from projects that it has contractual obligations with a customer under the former CFF.

2015-2020 LRAMVA and 2020 CDM adjustment to Load Forecast

One manual adjustment for CDM impacts to the 2020 load forecast is made. There is a different but related threshold amount that is used for the 2020 LRAMVA amount for Account 1568.

The amount used for the CDM threshold of the LRAMVA is the kWh that will be used to determine the base amount for the LRAMVA balance for 2020. This allows for a comparison between projected CDM savings and actual CDM savings.

If used to determine the manual CDM adjustment for the system purchased kWh, the proposed loss factor should correspond with the proposed total loss factor calculated in Appendix 2-R .

The Manual Adjustment for the 2020 Load Forecast is the amount manually subtracted from the system-wide load forecast (either based on a purchased or billed basis) derived from the base forecast from historical data. If the distributor has developed their load forecast on a system purchased basis, then the manual adjustment should be on a system purchased basis, including the adjustment for losses. If the load forecast has been developed on a billed basis, either on a system basis or on a class-specific basis, the manual adjustment should be on a billed basis, excluding losses.

The distributor should determine the allocation of the savings to all customer classes in a reasonable manner (e.g. taking into account what programs and what IESO-measured impacts were directed at specific customer classes), for both the LRAMVA and for the load forecast adjustment.

	2015	2016	2017	2018	2019	2020	Total for 2020
Amount used for CDM threshold for LRAMVA (2020)	14,921,023.00	13,266,517.00	15,663,962.00	8,287,944.57	3,614,443.98	-	**55,753,890.55**

Manual Adjustment for 2020 Load Forecast (billed basis)	-	-	-	-	-	-	-
Manual Adjustment for 2020 LDC-only CDM programs (billed basis)							
Total Manual Forecast to Load Forecast	-	-	-	-	-	-	-
Proposed Loss Factor (TLF)		Format: X.XX%					
Manual Adjustment for 2020 Load Forecast (system purchased basis)	-	-	-	-	-	-	-

Manual adjustment uses "gross" versus "net" (i.e. numbers multiplied by (1 + g). The Weight factor is also used to calculate the impact of each year's program on the CDM adjustment to the 2020

Appendix 3-3

OEB Appendix 2-Z

Projected Power Supply Expense

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Commodity Expense

Step 1: **2020 Forecasted Commodity Prices**

Forecasted Commodity Prices	Table 1: Average RPP Supply Cost Summary*		**non-RPP**	**RPP**
HOEP ($/MWh)	Load-Weighted Price for RPP Consumers		$20.09	$20.09
Global Adjustment ($/MWh)	Impact of the Global Adjustment		$106.94	$106.94
Adjustments ($/MWh)				$1.00
TOTAL ($/MWh)	Average Supply Cost for RPP Consumers			**$128.03**

Step 2: **Commodity Expense**

(volumes for the bridge and test year are loss adjusted)

Commodity

Customer		**Revenue**	**Expense**		**2020 Bridge Year**					
Class Name	UoM	USA #	USA #	Class A Non-RPP Volume**		Class B Non-RPP Volume**	Class B RPP Volume**	Average HOEP	Average RPP Rate	Amount
Residential	kWh	4006	4705			16,746,455	447,514,877	$ 0.02009	$ 0.12803	$57,631,766
General Service < 50 kW	kWh	4010	4705			24,056,286	110,995,393	$ 0.02009	$ 0.12803	$14,694,031
General Service 50 to 4999 kW	kWh	4035	4705	224,187,185		446,749,116	26,512,021	$ 0.02009	$ 0.12803	$16,873,444
Unmetered Scattered Load	kWh	4010	4705			0	1,595,465	$ 0.02009	$ 0.12803	$204,267
Sentinel Lighting	kWh	4025	4705			0	228,861	$ 0.02009	$ 0.12803	$29,301
Street Lighting	kWh	4025	4705			4,635,893	0	$ 0.02009	$ 0.12803	$93,135
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
TOTAL				**224,187,185**		**492,187,750**	**586,846,617**			**$89,525,945**

Class A - non-RPP Global Adjustment

Customer		**Revenue**	**Expense**	**Amount**	**2020**			**Hist. Avg GA/kWh *****	**Amount**
					kWh Volume				
General Service 50 to 4999 kW		4035	4707		224,187,185			$0.0684	$15,334,198
		4010	4707						$0
		4010	4707						
				-	224,187,185				**$15,334,198**

Class B - non-RPP Global Adjustment

Customer		**Revenue**	**Expense**		**2020**				Amount

Class Name	UoM	USA #	USA #			Class B Non-RPP Volume			GA Rate/kWh	
Residential	kWh	4006	4707			16,746,455			$ 0.10694	$1,790,866
General Service < 50 kW	kWh	4010	4707			24,056,286			$ 0.10694	$2,572,579
General Service 50 to 4999 kW	kWh	4035	4707			446,749,116			$ 0.10694	$47,775,350
Unmetered Scattered Load	kWh	4010	4707			0			$ 0.10694	$0
Sentinel Lighting	kWh	4025	4707			0			$ 0.10694	$0
Street Lighting	kWh	4025	4707			4,635,893			$ 0.10694	$495,762
	kWh	4025	4707							$0
	kWh	4025	4707							$0
Total Volume						**492,187,750**				
TOTAL										**$52,634,558**

*Regulated Price Plan Prices for the Period November 1, 2019 – October 31, 2020

** Enter 2020 load forecast data by class based on the most recent 12-month historic Class A and Class B RPP/Non-RPP proportions

*** Based on average $ GA per kWh billed to class A customers for most recent 12-month historical year.

Cost of Power Calculation

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All Volume should be loss adjusted with the exception of:
* Volume loss adjusted less WMP
** No loss adjustment for kWh

		2020 Bridge Year	RPP		2020 Bridge Year	non-RPP		Total	
Electricity Commodity	**Units**	Volume	Rate	$	Volume	Rate	$	$	
Class per Load Forecast				-					
Residential	kWh	447,514,877		57,295,330	16,746,455		336,436		
General Service < 50 kW	kWh	110,995,393		14,210,740	24,056,286		483,291		
General Service 50 to 4999 kW	kWh*	26,512,021		3,394,334	670,936,301		13,479,110		
Unmetered Scattered Load	kWh*	1,595,465		204,267	0		-		
Sentinel Lighting	kWh	228,861		29,301	0		-		
Street Lighting	kWh	0		-	4,635,893		93,135		
	kWh	0		-	0		-		
SUB-TOTAL		586,846,617		75,133,972	716,374,935		14,391,972	$ 89,525,945	OK

Global Adjustment non-RPP	**Units**								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total	
Residential	kWh			0			1,790,866		
General Service < 50 kW	kWh			0			2,572,579		
General Service 50 to 4999 kW	kWh*			0			63,109,549		
Unmetered Scattered Load	kWh*			0			-		
Sentinel Lighting	kWh			0			-		
Street Lighting	kWh			0			495,762		
	kWh			0			-		
SUB-TOTAL		0		0			67,968,756	$ 67,968,756	OK

Transmission - Network								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0074	3,311,610	16,746,455	0.0074	123,924	
General Service < 50 kW	kWh	110,995,393	0.0067	743,669	24,056,286	0.0067	161,177	
General Service 50 to 4999 kW	kW	64,709	2.7628	178,778	1,637,582	2.7628	4,524,312	
Unmetered Scattered Load	kWh	1,595,465	0.0067	10,690	0	0.0067	-	
Sentinel Lighting	kW	652	2.0455	1,334	0	2.0455	-	
Street Lighting	kW	-	2.0884	-	12,418	2.0884	25,934	
				-			-	
SUB-TOTAL				4,246,081			4,835,346	9,081,428

Transmission - Connection								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0054	2,416,580	16,746,455	0.0054	90,431	
General Service < 50 kW	kWh	110,995,393	0.0047	521,678	24,056,286	0.0047	113,065	
General Service 50 to 4999 kW	kW	64,709	1.9004	122,973	1,637,582	1.9004	3,112,061	
Unmetered Scattered Load	kWh	1,595,465	0.0047	7,499	0	0.0047	-	
Sentinel Lighting	kW	652	1.5881	1,036	0	1.5881	-	
Street Lighting	kW	-	1.46	-	12,418	1.46	18,130	
				-	0		-	
SUB-TOTAL				3,069,766			3,333,687	6,403,453

Wholesale Market Service								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total

Residential	kWh	447,514,877	0.0034	1,521,551	16,746,455	0.0034	56,938	
General Service < 50 kW	kWh	110,995,393	0.0034	377,384	24,056,286	0.0034	81,791	
General Service 50 to 4999 kW (Class B)	kWh	26,512,021	0.0034	90,141	446,749,116	0.0034	1,518,947	
Unmetered Scattered Load	kWh	1,595,465	0.0034	5,425	0	0.0034	-	
Sentinel Lighting	kWh	228,861	0.0034	778	0	0.0034	-	
Street Lighting	kWh	-	0.0034	-	4,635,893	0.0034	15,762	
General Service 50 to 4999 kW (Class A)	kWh			-	224,187,185	0.0037	827,025	
SUB-TOTAL				1,995,278			2,500,464	4,495,742

RRRP								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	447,514,877	0.0005	223,757	16,746,455	0.0005	8,373	
General Service < 50 kW	kWh	110,995,393	0.0005	55,498	24,056,286	0.0005	12,028	
General Service 50 to 4999 kW	kWh	26,512,021	0.0005	13,256	670,936,301	0.0005	335,468	
Unmetered Scattered Load	kWh	1,595,465	0.0005	798	0	0.0005	-	
Sentinel Lighting	kWh	228,861	0.0005	114	0	0.0005	-	
Street Lighting	kWh	-	0.0005	-	4,635,893	0.0005	2,318	
	kWh	-	0.0005	-	0	0.0005	-	
SUB-TOTAL				293,423			358,187	651,611

Low Voltage - No TLF adjustment								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh**	427,058,763	0.0005	213,529	15,980,967	0.0005	7,990	
General Service < 50 kW	kWh**	105,921,741	0.0004	42,369	22,956,662	0.0004	9,183	
General Service 50 to 4999 kW	kW	64,709	0.1612	10,431	1,637,582	0.1612	263,978	
Unmetered Scattered Load	kWh**	1,522,536	0.0004	609	0	0.0004	-	
Sentinel Lighting	kW	652	0.1347	88	0	0.1347	-	
Street Lighting	kW	-	0.1239	-	12,418	0.1239	1,539	
				-			-	
SUB-TOTAL		534568401.2		267,026			282,690	549,716

Smart Meter Entity Charge								
Class per Load Forecast		Customers	Rate	$	Customers	Rate	$	Total
Residential		49,508	0.57	338,633	1,853	0.57	12,672.00	
General Service < 50 kW		3,705	0.57	25,341	803	0.57	5,492.20	
				-				
SUB-TOTAL				363,974			18,164	382,139
SUB- TOTAL				85,369,522			93,689,267	179,058,789
ORECA CREDIT	31.80%			(27,147,508)			0	(27,147,508)
TOTAL				**58,222,014**			**93,689,267**	**151,911,281**

***The ORRECA Credit of 31.8% will only apply to RPP proportion of the listed components. Impacts on distribution charges are excluded for the purpose of calculating the cost of power.

2020 Bridge Year - CoP	
4705 -Power Purchased	$ 89,525,945
4707- Global Adjustment	$ 67,968,756
4708-Charges-WMS	$ 5,147,353
4714-Charges-NW	$ 9,081,428
4716-Charges-CN	$ 6,403,453
4750-Charges-LV	$ 549,716
4751-IESO SME	$ 382,139
Misc A/R or A/P	$ (27,147,508)
TOTAL	**$ 151,911,281**

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Commodity Expense

Step 1: **2021 Forecasted Commodity Prices**

Forecasted Commodity Prices	Table 1: Average RPP Supply Cost Summary*		**non-RPP**	**RPP**
HOEP ($/MWh)	Load-Weighted Price for RPP Consumers		$20.09	$20.09
Global Adjustment ($/MWh)	Impact of the Global Adjustment		$106.94	$106.94
Adjustments ($/MWh)				$1.00
TOTAL ($/MWh)	Average Supply Cost for RPP Consumers			**$128.03**

Step 2: **Commodity Expense**

(volumes for the bridge and test year are loss adjusted)

Commodity

					2021 Test Year					
Customer		**Revenue**	**Expense**							
Class Name	UoM	USA #	USA #	Class A Non-RPP Volume**		Class B Non-RPP Volume**	Class B RPP Volume**	Average HOEP	Average RPP Rate	Amount
Residential	kWh	4006	4705			17,090,770	456,715,993	$ 0.02009	$ 0.12803	$58,816,702
General Service < 50 kW	kWh	4010	4705			24,498,245	113,034,586	$ 0.02009	$ 0.12803	$14,963,988
General Service 50 to 4999 kW	kWh	4035	4705	222,971,416		472,393,622	28,033,876	$ 0.02009	$ 0.12803	$17,559,061
Unmetered Scattered Load	kWh	4010	4705			0	1,544,163	$ 0.02009	$ 0.12803	$197,699
Sentinel Lighting	kWh	4025	4705			0	227,843	$ 0.02009	$ 0.12803	$29,171
Street Lighting	kWh	4025	4705			4,657,774	0	$ 0.02009	$ 0.12803	$93,575
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
	kWh	4025	4705					$ 0.02009	$ 0.12803	$0
TOTAL				**222,971,416**		**518,640,410**	**599,556,461**			**$91,660,195**

Class A - non-RPP Global Adjustment

					2021			
Customer		**Revenue**	**Expense**	**Amount**	**kWh Volume**		**Hist. Avg GA/kWh *** **	**Amount**
General Service 50 to 4999 kW		4035	4707		222,971,416		$0.0684	$15,251,041
		4010	4707					$0
		4010	4707					
				-	222,971,416			**$15,251,041**

Class B - non-RPP Global Adjustment

					2021					
Customer		**Revenue**	**Expense**							Amount

Class Name	UoM	USA #	USA #			Class B Non-RPP Volume			GA Rate/kWh	
Residential	kWh	4006	4707			17,090,770			$ 0.10694	$1,827,687
General Service < 50 kW	kWh	4010	4707			24,498,245			$ 0.10694	$2,619,842
General Service 50 to 4999 kW	kWh	4035	4707			472,393,622			$ 0.10694	$50,517,774
Unmetered Scattered Load	kWh	4010	4707			0			$ 0.10694	$0
Sentinel Lighting	kWh	4025	4707			0			$ 0.10694	$0
Street Lighting	kWh	4025	4707			4,657,774			$ 0.10694	$498,102
	kWh	4025	4707							$0
	kWh	4025	4707							$0
Total Volume						**518,640,410**				
TOTAL										**$55,463,405**

*Regulated Price Plan Prices for the Period November 1, 2019 – October 31, 2020

** Enter 2020 load forecast data by class based on the most recent 12-month historic Class A and Class B RPP/Non-RPP proportions

*** Based on average $ GA per kWh billed to class A customers for most recent 12-month historical year.

Cost of Power Calculation

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All Volume should be loss adjusted with the exception of:
* Volume loss adjusted less WMP
** No loss adjustment for kWh

		2021 Test Year	RPP		2021 Test Year	non-RPP		Total	
Electricity Commodity	**Units**	Volume	Rate	$	Volume	Rate	$	$	
Class per Load Forecast				-					
Residential	kWh	456,715,993		58,473,349	17,090,770		343,354		
General Service < 50 kW	kWh	113,034,586		14,471,818	24,498,245		492,170		
General Service 50 to 4999 kW	kWh*	28,033,876		3,589,177	695,365,038		13,969,884		
Unmetered Scattered Load	kWh*	1,544,163		197,699	0		-		
Sentinel Lighting	kWh	227,843		29,171	0		-		
Street Lighting	kWh	0		-	4,657,774		93,575		
	kWh	0		-	0		-		
SUB-TOTAL		599,556,461		76,761,214	741,611,827		14,898,982	$ 91,660,195	OK

Global Adjustment non-RPP	**Units**								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total	
Residential	kWh			0			1,827,687		
General Service < 50 kW	kWh			0			2,619,842		
General Service 50 to 4999 kW	kWh*			0			65,768,815		
Unmetered Scattered Load	kWh*			0			-		
Sentinel Lighting	kWh			0			-		
Street Lighting	kWh			0			498,102		
	kWh			0			-		
SUB-TOTAL		0		0			70,714,446	$ 70,714,446	OK

Transmission - Network								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0072	3,288,355	17,090,770	0.0072	123,054	
General Service < 50 kW	kWh	113,034,586	0.0065	734,725	24,498,245	0.0065	159,239	
General Service 50 to 4999 kW	kW	68,797	2.6864	184,815	1,706,460	2.6864	4,584,235	
Unmetered Scattered Load	kWh	1,544,163	0.0065	10,037	0	0.0065	-	
Sentinel Lighting	kW	653	1.9889	1,299	0	1.9889	-	
Street Lighting	kW	-	2.0306	-	12,545	2.0306	25,473	
				-			-	
SUB-TOTAL				4,219,231			4,892,000	9,111,231

Transmission - Connection								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0052	2,374,923	17,090,770	0.0052	88,872	
General Service < 50 kW	kWh	113,034,586	0.0045	508,656	24,498,245	0.0045	110,242	
General Service 50 to 4999 kW	kW	68,797	1.8247	125,533	1,706,460	1.8247	3,113,778	
Unmetered Scattered Load	kWh	1,544,163	0.0045	6,949	0	0.0045	-	
Sentinel Lighting	kW	653	1.5248	996	0	1.5248	-	
Street Lighting	kW	-	1.4018	-	12,545	1.4018	17,585	
				-	0		-	
SUB-TOTAL				3,017,056			3,330,477	6,347,534

Wholesale Market Service								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total

Residential	kWh	456,715,993	0.0034	1,552,834	17,090,770	0.0034	58,109	
General Service < 50 kW	kWh	113,034,586	0.0034	384,318	24,498,245	0.0034	83,294	
General Service 50 to 4999 kW (Class B)	kWh	28,033,876	0.0034	95,315	472,393,622	0.0034	1,606,138	
Unmetered Scattered Load	kWh	1,544,163	0.0034	5,250	0	0.0034	-	
Sentinel Lighting	kWh	227,843	0.0034	775	0	0.0034	-	
Street Lighting	kWh	-	0.0034	-	4,657,774	0.0034	15,836	
General Service 50 to 4999 kW (Class A)	kWh			-	222,971,416	0.0037	822,540	
SUB-TOTAL				2,038,492			2,585,918	4,624,410

RRRP								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh	456,715,993	0.0005	228,358	17,090,770	0.0005	8,545	
General Service < 50 kW	kWh	113,034,586	0.0005	56,517	24,498,245	0.0005	12,249	
General Service 50 to 4999 kW	kWh	28,033,876	0.0005	14,017	695,365,038	0.0005	347,683	
Unmetered Scattered Load	kWh	1,544,163	0.0005	772	0	0.0005	-	
Sentinel Lighting	kWh	227,843	0.0005	114	0	0.0005	-	
Street Lighting	kWh	-	0.0005	-	4,657,774	0.0005	2,329	
	kWh	-	0.0005	-	0	0.0005	-	
SUB-TOTAL				299,778			370,806	670,584

Low Voltage - No TLF adjustment								
Class per Load Forecast		Volume	Rate	$	Volume	Rate	$	Total
Residential	kWh**	438,215,738	0.0014	613,502	16,398,472	0.0014	22,958	
General Service < 50 kW	kWh**	108,455,879	0.0012	130,147	23,505,891	0.0012	28,207	
General Service 50 to 4999 kW	kW	68,797	0.4776	32,857	1,706,460	0.4776	815,006	
Unmetered Scattered Load	kWh**	1,481,614	0.0012	1,778	0	0.0012	-	
Sentinel Lighting	kW	653	0.3991	261	0	0.3991	-	
Street Lighting	kW	-	0.3669	-	12,545	0.3669	4,603	
				-			-	
SUB-TOTAL		548,222,679		778,545			870,773	1,649,318

Smart Meter Entity Charge								
Class per Load Forecast		Customers	Rate	$	Customers	Rate	$	Total
Residential		50,062	0.57	342,422	1,873	0.57	12,813.76	
General Service < 50 kW		3,732	0.57	25,528	809	0.57	5,532.69	
				-				
SUB-TOTAL				367,949			18,346	386,296
SUB- TOTAL				87,482,265			97,681,749	185,164,014
ORECA CREDIT	31.80%			(27,819,360)			0	(27,819,360)
TOTAL				**59,662,905**			**97,681,749**	**157,344,654**

***The ORRECA Credit of 31.8% will only apply to RPP proportion of the listed components. Impacts on distribution charges are excluded for the purpose of calculating the cost of power.

2020 Test Year - CoP	
4705 -Power Purchased	$ 91,660,195
4707- Global Adjustment	$ 70,714,446
4708-Charges-WMS	$ 5,294,994
4714-Charges-NW	$ 9,111,231
4716-Charges-CN	$ 6,347,534
4750-Charges-LV	$ 1,649,318
4751-IESO SME	$ 386,296
Misc A/R or A/P	$ (27,819,360)
TOTAL	**$ 157,344,654**

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Appendix 3-4

OEB Appendix 2-IB

Accuracy of Load Forecast and Variance Analysis

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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	1,243,499,330		OEB-approved	1,268,921,954
Historical	*2016*		Actual	1,257,831,314			
Historical	*2017*		Actual	1,212,201,216			
Historical	*2018*		Actual	1,270,822,507			
Historical	*2019*		Actual		1,245,662,788		
Bridge Year	*2020*		Forecast		1,290,405,695		
Test Year	*2021*		Forecast		1,335,220,170		

Variance Analysis	Year	Year-over-year		Versus OEB-approved
	2015			
	2016	1.2%		
	2017	-3.6%		
	2018	4.8%		
	2019	-100.0%		
	2020		3.6%	
	2021		3.5%	5.2%
	Geometric Mean	-100.0%		1.0%

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

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

	Calendar Year (for 2021 Cost of Service	Customers				Consumption (kWh) [3]				Consumption (kWh) per Customer				
							Actual (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	47,555	OEB-approved	47,067	Actual	415,749,081.70		OEB-approved	407,092,792.00	Actual	8,742.49	0.00	OEB-approved	8,649.22
Historical	*2016*	Actual	48,401			Actual	433,305,471.24				Actual	8,952.41	0.00		
Historical	*2017*	Actual	49,606			Actual	410,629,996.26				Actual	8,277.83	0.00		
Historical	*2018*	Actual	50,324			Actual	451,047,288.22				Actual	8,962.87	0.00		
Historical	*2019*	Actual	50,792			Actual		434,759,151.89			Actual	0.00	8,559.60		
Bridge Year	*2020*	Forecast	51,360			Forecast		443,039,729.51			Forecast	0.00	8,626.09		
Test Year	*2021*	Forecast	51,935			Forecast		454,614,209.64			Forecast	0.00	8,753.48		

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	1.8%		*2016*	4.2%		*2016*	2.4%	
	2017	2.5%		*2017*	-5.2%		*2017*	-7.5%	
	2018	1.4%		*2018*	9.8%		*2018*	8.3%	
	2019	0.9%		*2019*	-100.0%		*2019*	-100.0%	
	2020	1.1%		*2020*	1.9%		*2020*	0.8%	
	2021	1.1%	10.3%	*2021*	2.6%	11.7%	*2021*	1.5%	1.2%
	Geometric Mean	1.8%	2.0%	Geometric Mean	-100.0%	2.2%	Geometric Mean	-100.0%	0.2%

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual	$ 17,372,381	OEB-approved	$17,755,922
Historical	*2016*	Actual	$ 18,405,941		
Historical	*2017*	Actual	$ 18,864,142		
Historical	*2018*	Actual	$ 19,498,301		
Historical	*2019*	Actual	$ 19,765,680		
Bridge Year (Foreca	*2020*	Forecast	$ 20,579,101		
Test Year (Forecast)	*2021*	Forecast	$ 20,983,817		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	5.9%	
	2017	2.5%	
	2018	3.4%	
	2019	1.4%	
	2020	4.1%	
	2021	2.0%	18.2%
	Geometric Mean	3.8%	3.4%

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		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	4,434	OEB-approved	4,385	Actual	126,134,211		OEB-approved	121,037,129	Actual	28,447.05	0.00	OEB-approved	27,602.54
Historical	*2016*	Actual	4,457			Actual	130,328,462				Actual	29,241.30	0.00		
Historical	*2017*	Actual	4,505			Actual	127,052,978				Actual	28,202.66	0.00		
Historical	*2018*	Actual	4,479			Actual	131,255,411				Actual	29,304.62	0.00		
Historical	*2019*	Actual	4,475			Actual		126,741,416			Actual	0.00	28,322.10		
Bridge Year	*2020*	Forecast	4,508			Forecast		128,878,403			Forecast	0.00	28,590.31		
Test Year	*2021*	Forecast	4,541			Forecast		131,961,769			Forecast	0.00	29,061.54		

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	0.5%		*2016*	3.3%		*2016*	2.8%	
	2017	1.1%		*2017*	-2.5%		*2017*	-3.6%	
	2018	-0.6%		*2018*	3.3%		*2018*	3.9%	
	2019	-0.1%		*2019*	-100.0%		*2019*	-100.0%	
	2020	0.7%		*2020*		1.7%	*2020*		0.9%
	2021	0.7%	3.6%	*2021*		2.4%	9.0%	*2021*		1.6%	5.3%
	Geometric Mean	0.5%	0.7%	Geometric Mean	-100.0%		1.7%	Geometric Mean	-100.0%		1.0%

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual	$ 3,760,012	OEB-approved	$3,619,641
Historical	*2016*	Actual	$ 3,816,919		
Historical	*2017*	Actual	$ 3,868,955		
Historical	*2018*	Actual	$ 3,914,187		
Historical	*2019*	Actual	$ 3,917,774		
Bridge Year (Foreca	*2020*	Forecast	$ 4,022,457		
Test Year (Forecast)	*2021*	Forecast	$ 4,114,496		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	1.5%	
	2017	1.4%	
	2018	1.2%	
	2019	0.1%	
	2020	2.7%	
	2021	2.3%	13.7%
	Geometric Mean	1.8%	2.6%

3 Customer Class: GS > 50 kW — 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 (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	781	OEB-approved	862	Actual	645,074,725		OEB-approved	669,981,013.00	Actual	825,959.96	0.00	OEB-approved	777,240.15
Historical	*2016*	Actual	759			Actual	642,382,592				Actual	846,353.88	0.00		
Historical	*2017*	Actual	808			Actual	624,101,455				Actual	772,402.79	0.00		
Historical	*2018*	Actual	790			Actual	635,816,201				Actual	804,830.63	0.00		
Historical	*2019*	Actual	800			Actual		642,357,413.47			Actual	0.00	802,946.77		
Bridge Year	*2020*	Forecast	805			Forecast		665,567,631.89			Forecast	0.00	826,975.17		
Test Year	*2021*	Forecast	810			Forecast		694,096,098.56			Forecast	0.00	857,255.22		

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	-2.8%		*2016*	-0.4%		*2016*	2.5%	
	2017	6.5%		*2017*	-2.8%		*2017*	-8.7%	
	2018	-2.2%		*2018*	1.9%		*2018*	4.2%	
	2019	1.3%		*2019*	-100.0%		*2019*	-100.0%	
	2020	0.6%		*2020*	3.6%		*2020*	3.0%	
	2021	0.6%	-6.1%	*2021*	4.3%	3.6%	*2021*	3.7%	10.3%
	Geometric Mean	0.7%	-1.2%	Geometric Mean	-100.0%	0.7%	Geometric Mean	-100.0%	2.0%

	Calendar Year (for 2021 Cost of Service	Revenues				
Historical	*2015*	Actual	$ 6,948,621	OEB-approved	$6,504,710	
Historical	*2016*	Actual	$ 5,950,249			
Historical	*2017*	Actual	$ 5,978,182			
Historical	*2018*	Actual	$ 6,165,999			
Historical	*2019*	Actual	$ 6,320,712			
Bridge Year (Foreca	*2020*	Forecast	$ 6,643,287			
Test Year (Forecast)	*2021*	Forecast	$ 6,928,887			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	-14.4%	
	2017	0.5%	
	2018	3.1%	
	2019	2.5%	
	2020	5.1%	
	2021	4.3%	6.5%
	Geometric Mean	-0.1%	1.3%

4 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	358	OEB-approved	422	Actual	1,575,358		OEB-approved	2,215,047	Actual	4,395.02	0.00	OEB-approved	5,248.93
Historical	*2016*	Actual	389			Actual	1,562,362				Actual	4,020.52	0.00		
Historical	*2017*	Actual	373			Actual	1,534,015				Actual	4,113.98	0.00		
Historical	*2018*	Actual	356			Actual	1,522,941				Actual	4,274.56	0.00		
Historical	*2019*	Actual	335			Actual		1,564,588			Actual	0.00	4,670.41		
Bridge Year	*2020*	Forecast	330			Forecast		1,522,536			Forecast	0.00	4,610.94		
Test Year	*2021*	Forecast	325			Forecast		1,481,614			Forecast	0.00	4,552.22		

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	8.4%		*2016*	-0.8%		*2016*	-8.5%	
	2017	-4.0%		*2017*	-1.8%		*2017*	2.3%	
	2018	-4.5%		*2018*	-0.7%		*2018*	3.9%	
	2019	-6.0%		*2019*	-100.0%		*2019*	-100.0%	
	2020	-1.4%		*2020*	-2.7%		*2020*	-1.3%	
	2021	-1.4%	-22.9%	*2021*	-2.7%	-33.1%	*2021*	-1.3%	-13.3%
	Geometric Mean	-1.9%	-5.1%	Geometric Mean	-100.0%	-7.7%	Geometric Mean	-100.0%	-2.8%

	Calendar Year (for 2021 Cost of Service	Revenues				
Historical	*2015*	Actual	$ 105,567	OEB-approved	$127,640	
Historical	*2016*	Actual	$ 112,853			
Historical	*2017*	Actual	$ 109,915			
Historical	*2018*	Actual	$ 107,203			
Historical	*2019*	Actual	$ 109,226			
Bridge Year (Foreca	*2020*	Forecast	$ 103,220			
Test Year (Forecast)	*2021*	Forecast	$ 103,220			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	6.9%	
	2017	-2.6%	
	2018	-2.5%	
	2019	1.9%	
	2020	-5.5%	
	2021	0.0%	-19.1%
	Geometric Mean	-0.4%	-4.2%

5 Customer Class: Sentinel 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	334	OEB-approved	303	Actual	223,690		OEB-approved	259,459	Actual	669.68	0.00	OEB-approved	856.30
Historical	*2016*	Actual	311			Actual	213,770				Actual	688.35	0.00		
Historical	*2017*	Actual	324			Actual	210,489				Actual	649.65	0.00		
Historical	*2018*	Actual	312			Actual	220,524				Actual	707.66	0.00		
Historical	*2019*	Actual	296			Actual		218,186			Actual	0.00	737.12		
Bridge Year	*2020*	Forecast	290			Forecast		218,400			Forecast	0.00	753.99		
Test Year	*2021*	Forecast	283			Forecast		218,613			Forecast	0.00	771.24		

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	-7.0%		*2016*	-4.4%		*2016*	2.8%	
	2017	4.3%		*2017*	-1.5%		*2017*	-5.6%	
	2018	-3.8%		*2018*	4.8%		*2018*	8.9%	
	2019	-5.0%		*2019*	-100.0%		*2019*	-100.0%	
	2020	-2.1%		*2020*		0.1%	*2020*		2.3%
	2021	-2.1%	-6.5%	*2021*		0.1%	-15.7%	*2021*		2.3%	-9.9%
	Geometric Mean	-3.2%	-1.3%	Geometric Mean	-100.0%		-3.4%	Geometric Mean	-100.0%		-2.1%

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual	$ 72,772	OEB-approved	$75,827
Historical	*2016*	Actual	$ 77,169		
Historical	*2017*	Actual	$ 80,979		
Historical	*2018*	Actual	$ 79,423		
Historical	*2019*	Actual	$ 84,570		
Bridge Year (Foreca	*2020*	Forecast	$ 76,705		
Test Year (Forecast)	*2021*	Forecast	$ 76,021		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	6.0%	
	2017	4.9%	
	2018	-1.9%	
	2019	6.5%	
	2020	-9.3%	
	2021	-0.9%	0.3%
	Geometric Mean	0.9%	0.1%

6 Customer Class: Streetlighting — 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	12,897	OEB-approved	12,989	Actual	6,899,420		OEB-approved	7,477,962	Actual	534.94	0.00	OEB-approved	575.71
Historical	*2016*	Actual	13,177			Actual	4,950,220				Actual	375.67	0.00		
Historical	*2017*	Actual	13,308			Actual	4,481,099				Actual	336.73	0.00		
Historical	*2018*	Actual	13,310			Actual	4,494,762				Actual	337.70	0.00		
Historical	*2019*	Actual	13,360			Actual		4,379,324			Actual	0.00	327.79		
Bridge Year	*2020*	Forecast	13,496			Forecast		4,423,985			Forecast	0.00	327.79		
Test Year	*2021*	Forecast	13,634			Forecast		4,469,101			Forecast	0.00	327.79		

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	2.2%		*2016*	-28.3%		*2016*	-29.8%	
	2017	1.0%		*2017*	-9.5%		*2017*	-10.4%	
	2018	0.0%		*2018*	0.3%		*2018*	0.3%	
	2019	0.4%		*2019*	-100.0%		*2019*	-100.0%	
	2020	1.0%		*2020*	1.0%		*2020*	0.0%	
	2021	1.0%	5.0%	*2021*	1.0%	-40.2%	*2021*	0.0%	-43.1%
	Geometric Mean	1.1%	1.0%	Geometric Mean	-100.0%	-9.8%	Geometric Mean	-100.0%	-10.7%

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual	$ 274,409	OEB-approved	$284,257
Historical	*2016*	Actual	$ 256,900		
Historical	*2017*	Actual	$ 254,779		
Historical	*2018*	Actual	$ 257,712		
Historical	*2019*	Actual	$ 259,440		
Bridge Year (Foreca	*2020*	Forecast	$ 265,367		
Test Year (Forecast)	*2021*	Forecast	$ 265,367		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	-6.4%	
	2017	-0.8%	
	2018	1.2%	
	2019	0.7%	
	2020	2.3%	
	2021	0.0%	-6.6%
	Geometric Mean	-0.7%	-1.4%

7 **Customer Class:** | 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	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2015*	Actual		OEB-approved		Actual			OEB-approved	Actual		OEB-approved	
Historical	*2016*	Actual				Actual				Actual			
Historical	*2017*	Actual				Actual				Actual			
Historical	*2018*	Actual				Actual				Actual			
Historical	*2019*	Actual				Actual				Actual			
Bridge Year	*2020*	Forecast				Forecast				Forecast			
Test Year	*2021*	Forecast				Forecast				Forecast			

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			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	2020			*2020*			*2020*		
	2021			*2021*			*2021*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual		OEB-approved	
Historical	*2016*	Actual			
Historical	*2017*	Actual			
Historical	*2018*	Actual			
Historical	*2019*	Actual			
Bridge Year (Foreca	*2020*	Forecast			
Test Year (Forecast)	*2021*	Forecast			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016		
	2017		
	2018		
	2019		
	2020		
	2021		
	Geometric Mean		

8 **Customer Class:** | 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	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2015*	Actual		OEB-approved		Actual			OEB-approved	Actual		OEB-approved	
Historical	*2016*	Actual				Actual				Actual			
Historical	*2017*	Actual				Actual				Actual			
Historical	*2018*	Actual				Actual				Actual			
Historical	*2019*	Actual				Actual				Actual			
Bridge Year	*2020*	Forecast				Forecast				Forecast			
Test Year	*2021*	Forecast				Forecast				Forecast			

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			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	2020			*2020*			*2020*		
	2021			*2021*			*2021*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual		OEB-approved	
Historical	*2016*	Actual			
Historical	*2017*	Actual			
Historical	*2018*	Actual			
Historical	*2019*	Actual			
Bridge Year (Foreca	*2020*	Forecast			
Test Year (Forecast)	*2021*	Forecast			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016		
	2017		
	2018		
	2019		
	2020		
	2021		
	Geometric Mean		

9 **Customer Class:** | 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	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2015*	Actual		OEB-approved		Actual			OEB-approved	Actual		OEB-approved	
Historical	*2016*	Actual				Actual				Actual			
Historical	*2017*	Actual				Actual				Actual			
Historical	*2018*	Actual				Actual				Actual			
Historical	*2019*	Actual				Actual				Actual			
Bridge Year	*2020*	Forecast				Forecast				Forecast			
Test Year	*2021*	Forecast				Forecast				Forecast			

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			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	2020			*2020*			*2020*		
	2021			*2021*			*2021*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual		OEB-approved	
Historical	*2016*	Actual			
Historical	*2017*	Actual			
Historical	*2018*	Actual			
Historical	*2019*	Actual			
Bridge Year (Foreca	*2020*	Forecast			
Test Year (Forecast)	*2021*	Forecast			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016		
	2017		
	2018		
	2019		
	2020		
	2021		
	Geometric Mean		

10 Customer Class: | 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	Weather-normalized		Actual (Weather actual)	Weather-normalized	Weather-normalized
Historical	*2015*	Actual		OEB-approved		Actual			OEB-approved		Actual		OEB-approved
Historical	*2016*	Actual				Actual					Actual		
Historical	*2017*	Actual				Actual					Actual		
Historical	*2018*	Actual				Actual					Actual		
Historical	*2019*	Actual				Actual					Actual		
Bridge Year	*2020*	Forecast				Forecast					Forecast		
Test Year	*2021*	Forecast				Forecast					Forecast		

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			*2016*			*2016*		
	2017			*2017*			*2017*		
	2018			*2018*			*2018*		
	2019			*2019*			*2019*		
	2020			*2020*			*2020*		
	2021			*2021*			*2021*		
	Geometric Mean			Geometric Mean			Geometric Mean		

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual		OEB-approved	
Historical	*2016*	Actual			
Historical	*2017*	Actual			
Historical	*2018*	Actual			
Historical	*2019*	Actual			
Bridge Year (Foreca	*2020*	Forecast			
Test Year (Forecast)	*2021*	Forecast			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016		
	2017		
	2018		
	2019		
	2020		
	2021		
	Geometric Mean		

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

Appendix 3-5

OEB Appendix 2-H

Other Revenue

File Number:	EB-2020-0040
Exhibit:	3
Tab:	3
Schedule:	1
Page:	
Date:	8/31/2020

TO BE UPDATED AT THE DRAFT RATE ORDER STAGE

Appendix 2-H
Other Operating Revenue

USoA #	USoA Description	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
		2015	2016	2017	2018	2019	2020	2021
	Reporting Basis	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
4235	Specific Service Charges	$ 839,364	$ 955,021	$ 778,746	$ 739,660	$ 718,611	$ 575,790	$ 915,096
4225	Late Payment Charges	$ 424,468	$ 429,277	$ 372,954	$ 372,405	$ 336,173	$ 340,000	$ 341,000
4082	Retail Services Revenues	$ 38,566	$ 34,361	$ 30,253	$ 26,298	$ 39,082	$ 43,264	$ 39,136
4084	Service Transaction Reques	$ 653	$ 657	$ 368	$ 348	$ 654	$ 776	$ 792
4086	SSS Administration Revenu	$ 149,441	$ 149,419	$ 156,050	$ 158,072	$ 160,440	$ 165,072	$ 166,911
4215	Other Utility Operating Inco	$ 57,932	$ 41,442	$ 29,141	$ 28,867	$ 19,294	$ 24,500	$ 25,500
4355	Gain on Disposition of Utilit	$ 29,600	$ 3,010	$ 7,522	$ 5,153	$ 265	$ -	$ -
4360	Loss on Disposition of Utilit	$ -	-$ 7,885	-$ 2,048	-$ 73,230	-$ 68,275	$ -	$ -
4362	Loss on Retirement of Utilit	$ -	$ -	-$ 100,431	-$ 28,013	-$ 6,135	$ -	$ -
4375	Revenue from Non-Utility Op	$ 3,100,130	$ 4,591,717	$ 3,314,051	$ 2,739,667	$ 1,604,938	$ 237,786	$ -
4380	Expenses from Non-Utility O	-$ 2,821,818	-$ 4,607,804	-$ 3,320,281	-$ 2,302,137	-$ 1,604,938	-$ 237,786	$ -
4390	Miscellaneous Non-Operatin	$ 103,532	$ 95,183	$ 63,464	$ 38,875	$ 34,166	$ 13,589	$ 17,315
4405	Interest and Dividend Incom	$ 105,631	$ 108,114	$ 225,113	$ 260,255	$ 225,055	$ 216,000	$ 200,000
4235	Amortization of Capital Con	$ 613,263	$ 738,438	$ 824,191	$ 894,004	$ 1,002,764	$ 1,126,809	$ 1,211,588
5025	Storm Aid for Other Utilities	$ -	$ -	$ -	$ 394,229	$ 100,295	$ -	$ -
4235	IT Services					$ 41,144	$ 40,200	$ 54,000
Specific Service Charges		$ 839,364	$ 955,021	$ 778,746	$ 739,660	$ 718,611	$ 575,790	$ 915,096
Late Payment Charges		$ 424,468	$ 429,277	$ 372,954	$ 372,405	$ 336,173	$ 340,000	$ 341,000
Other Operating Revenues		$ 246,592	$ 225,878	$ 215,812	$ 213,586	$ 260,613	$ 273,813	$ 286,338
Other Income or Deductions		$ 1,130,338	$ 920,775	$ 1,011,581	$ 1,928,803	$ 1,288,136	$ 1,356,398	$ 1,428,903
Total		$ 2,640,762	$ 2,530,951	$ 2,379,092	$ 3,254,454	$ 2,603,534	$ 2,546,001	$ 2,971,337

Description **Account(s)**
Specific Service Charges: 4235
Late Payment Charges: 4225
Other Distribution Revenues: 4082, 4084, 4090, 4205, 4210, 4215, 4220, 4230, 4240, 4245
Other Income and Expenses: 4305, 4310, 4315, 4320, 4325, 4330, 4335, 4340, 4345, 4350, 4355, 4357, 4360, 4362, 4365, 4370, 4375, 4380, 4385, 4390, 4395, 4398, 4405, 4410, 4415, 4420

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 filled in.

Example: Account 4405 - Interest and Dividend Income

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Short-term Investment Interest							
Bank Deposit Interest							
Miscellaneous Interest Revenue							
etc.[1]							
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Notes:

1 List and specify any other interest revenue.

2 In the transition year to IFRS, the applicant is to present information in both MIFRS and CGAAP. In column N, present CGAAP transition year information. For the typical applicant that adopted IFRS on January 1, 2015, 2014 must be presented in both a CGAAP and MIFRS basis.

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

4235 - Specific Service Charges

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Returned cheque charge	$ 5,820	$ 6,335	$ 6,220	$ 4,808	$ 5,397	$ 5,300	$ 5,400
Legal Letter Charge	$ 5,165	$ 6,960	$ 4,737	$ 4,046	$ 3,729	$ 4,000	$ 4,000
ccount Set up / Change of Occupancy charg	$ 188,670	$ 205,290	$ 215,220	$ 186,780	$ 188,760	$ 175,000	$ 177,990
Disconnect / Reconnect Charges	$ 34,057	$ 34,925	$ 13,785	$ 17,645	$ 45,720	$ 34,100	$ 34,215
Specific Charge for Access to the Power Po	$ 253,234	$ 242,690	$ 248,746	$ 252,719	$ 189,880	$ 199,476	$ 535,463
Collection of Account Charge	$ 247,610	$ 235,196	$ 103,612	$ 74,877	$ 39,441	$ -	$ -
MicroFIT Service Charges	$ 24,477	$ 27,730	$ 28,471	$ 57,278	$ 57,689	$ 57,914	$ 58,028
Total	$ 759,034	$ 759,126	$ 620,791	$ 598,154	$ 530,616	$ 475,790	$ 815,096

Account 4235 - Miscellaneous Service Reve

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Billings	$ 65,087	$ 185,006	$ 132,135	$ 119,279	$ 158,697.54	$ 100,000	$ 100,000
Clear Small Differences	-$ 51	-$ 92	-$ 40	$ 508	$ 1,883		
U.S Exchange	-$ 2,228	-$ 3,716	$ 7,384	$ 231	$ 1,798		
Visa Card Rewards	$ 8,944	$ 9,811	$ 9,404	$ 9,296	$ 6,789		
Write Off Stale-Dated Cheques	$ 8,578	$ 4,887	$ 9,071	$ 12,193	$ 18,827		
Total	$ 80,330	$ 195,895	$ 157,954	$ 141,506	$ 187,995	$ 100,000	$ 100,000

Account 4225 - Late Payment Charges

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Late Payment Charges	$ 424,468	$ 429,277	$ 372,954	$ 372,405	$ 336,173	$ 340,000	$ 341,000
Total	$ 424,468	$ 429,277	$ 372,954	$ 372,405	$ 336,173	$ 340,000	$ 341,000

Account 4082 - Retailer Services Revenue

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Retailer Service Agreement - Monthly Fixed	$ 4,340	$ 4,360	$ 4,260	$ 4,540	$ 7,600	$ 9,302	$ 9,488
Retailer Service Agreement - Monthly Variab	$ 21,392	$ 18,751	$ 16,246	$ 13,599	$ 19,677	$ 21,226	$ 18,530
or Consilidated Billing - Monthly Charge per C	$ 12,835	$ 11,250	$ 9,747	$ 8,159	$ 11,806	$ 12,736	$ 11,118

Total	$ 38,566	$ 34,361	$ 30,253	$ 26,298	$ 39,082	$ 43,264	$ 39,136

Account 4084 - Service Transaction Reques

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Service Transaction Requests - Request Fe	$ 233	$ 242	$ 128	$ 124	$ 231	$ 276	$ 281
Service Transaction Requests - Processing	$ 421	$ 415	$ 240	$ 225	$ 422	$ 501	$ 511
Total	$ 653	$ 657	$ 368	$ 348	$ 654	$ 776	$ 792

Account 4086 - SSS Administration Revenu

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
SSS Administration Revenue	$ 149,441	$ 149,419	$ 156,050	$ 158,072	$ 160,440	$ 165,072	$ 166,911
Total	$ 149,441	$ 149,419	$ 156,050	$ 158,072	$ 160,440	$ 165,072	$ 166,911

Account 4215 - Other Utility Operating Incom

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Sale of Scrap Materials	$ 45,397	$ 30,493	$ 25,633	$ 26,041	$ 16,703	$ 22,000	$ 23,000
Transformer Rental	$ 12,534	$ 10,949	$ 3,508	$ 2,826	$ 2,591	$ 2,500	$ 2,500
Total	$ 57,932	$ 41,442	$ 29,141	$ 28,867	$ 19,294	$ 24,500	$ 25,500

4355 - Gain on Disposition of Utility and Oth

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Sale of Obsolete Vehicles & Equipment	$ 29,600	$ 3,010	$ 7,522	$ 5,153	$ 265		
Total	$ 29,600	$ 3,010	$ 7,522	$ 5,153	$ 265	$ -	$ -

Account 4360 - Loss on Disposition of Utility

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Meter Disposals		$ (7,435.16)		$ (19,318.14)	$ (32,333.73)		
Vehicle & Equipment Disposals		-$ 449	-$ 2,048	-$ 17,341			
Pole Disposals				-$ 36,570	-$ 15,766		
Transformer Disposals					-$ 20,175		

Total	$ -	-$ 7,885	-$ 2,048	-$ 73,230	-$ 68,275	$ -	$ -

Account 4362 - Loss on Retirement of Utility

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Retirement of Meters			-$ 100,431	-$ 28,013	-$ 6,135		
Total	$ -	$ -	-$ 100,431	-$ 28,013	-$ 6,135	$ -	$ -

Account 4375 - Revenue from Non-Utility Op

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
CDM Revenue	$ 3,100,130	$ 4,591,717	$ 3,314,051	$ 2,739,667	$ 1,604,938	$ 237,786	
Total	$ 3,100,130	$ 4,591,717	$ 3,314,051	$ 2,739,667	$ 1,604,938	$ 237,786	$ -

Account 4380 - Expenses from Non-Utility O

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
CDM Expenses	-$ 2,821,818	-$ 4,607,804	-$ 3,320,281	-$ 2,302,137	-$ 1,604,938	-$ 237,786	
Total	-$ 2,821,818	-$ 4,607,804	-$ 3,320,281	-$ 2,302,137	-$ 1,604,938	-$ 237,786	$ -

Account 4390 - Miscellaneous Operating Inc

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Apprenticeship Tax Credits	$ 103,532	$ 95,183	$ 63,464	$ 38,875	$ 34,166	$ 13,589	$ 17,315
Total	$ 103,532	$ 95,183	$ 63,464	$ 38,875	$ 34,166	$ 13,589	$ 17,315

Account 4405 - Interest and Dividend Incom

	2015 Actual²	2016 Actual²	2017 Actual²	2018 Actual²	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Bank Deposit Interest	$ 105,631	$ 108,114	$ 225,113	$ 260,255	$ 225,055	$ 216,000	$ 200,000
Total	$ 105,631	$ 108,114	$ 225,113	$ 260,255	$ 225,055	$ 216,000	$ 200,000

Account 4245 - Government and Other Assi

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Amortization of Capital Contributions	$ 613,263	$ 738,438	$ 824,191	$ 894,004	$ 1,002,764	$ 1,126,809	$ 1,211,588
Total	$ 613,263	$ 738,438	$ 824,191	$ 894,004	$ 1,002,764	$ 1,126,809	$ 1,211,588

Storm Aid for Other Utilities

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
Billings for Providing Assistance to Other Ut	$ -	$ -	$ -	$ 394,229	$ 100,295	$ -	$ -
Total	$ -	$ -	$ -	$ 394,229	$ 100,295	$ -	$ -

IT Services

	2015 Actual[2]	2016 Actual[2]	2017 Actual[2]	2018 Actual[2]	2019 Actual	Bridge Year	Test Year
	2015	2016	2017	2018	2019	2020	2021
Reporting Basis							
IT Services					$ 41,144	$ 40,200	$ 54,000
Total	$ -	$ -	$ -	$ -	$ 41,144	$ 40,200	$ 54,000