EXHIBIT 3 - REVENUES

2021 Cost of Service

Wellington North Power Inc.
EB-2020-0061

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3.1 LOAD AND REVENUE FORECAST

3.1.1 INTRODUCTION

The evidence presented in this exhibit provides information supporting the revenues derived from activities regulated by the Ontario Energy Board (OEB). Actual operating revenues from regulated operations are derived mainly from fixed and variable tariff charges as well as pass through charges and specific service charges. Revenues are collected from seven (7) customer classes:

a) Residential;
b) General Service less than 50 kW;
c) General Service 50 - 999 kW;
d) General Service 1,000 – 4,999 kW;
e) Unmetered Scattered Load (USL);
f) Sentinel Lighting; and
g) Street Lighting.

Wellington North Power Inc. (WNP) does not anticipate any changes to its customer classes (i.e. no addition or removal of a customer class.)

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

The evidence herein is organized per the following topics:

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

3.1.2 OVERVIEW OF CURRENT REVENUES

Table 1 - Revenues at Current Rates below shows revenues from current distribution charges for 2020.

Table 1 - Revenues at Current Rates

2020 Rates at 2021 Load	Test Year Projected Revenue from Existing Variable Charges							
Customer Class Name	**Variable Distribution Rate**	**per**	**Test Year Volume**	**Gross Variable Revenue**	**Transform. Allowance Rate**	**Transform. Allowance kW's**	**Transform. Allowance $'s**	**Net Variable Revenue**
Residential	$0.0000	kWh	26,503,100	$0.00			$0.00	**$0.00**
General Service < 50 kW	$0.0188	kWh	11,455,522	$215,363.81			$0.00	**$215,363.81**
General Service 50 - 999 kW	$2.7600	kW	52,425	$144,692.37	-0.60	10,607	-$6,364.43	**$138,327.95**
General Service 1000 - 4999 kW	$3.1994	kW	92,890	$297,191.37			$0.00	**$297,191.37**
Unmetered Scattered Load	$0.0163	kWh	6,288	$102.49			$0.00	**$102.49**
Sentinel Lighting	$28.6379	kW	55	$1,568.03			$0.00	**$1,568.03**
Street Lighting	$1.8527	kW	632	$1,171.78			$0.00	**$1,171.78**
Total Variable Revenue			**38,110,912**	$660,089.86		10,607.38	-$6,364.43	**$653,725.43**

2020 Rates at 2021 Load	Test Year Projected Revenue from Existing Fixed Charges							
Customer Class Name	**Fixed Rate**	**Customers (Connections)**	**Fixed Charge Revenue**	**Variable Revenue**	**TOTAL**	**% Fixed Revenue**	**% Variable Revenue**	**% Total Revenue**
Residential	$36.39	3,355	$1,465,096.22	$0.00	$1,465,096.22	100.00%		55.37%
General Service < 50 kW	$43.75	468	$245,712.12	$215,363.81	$461,075.93	53.29%	46.71%	17.42%
General Service 50 - 999 kW	$289.38	34	$118,205.67	$138,327.95	$256,533.62	46.08%	53.92%	9.69%
General Service 1000 - 4999 kW	$2,365.10	5	$141,906.00	$297,191.37	$439,097.37	32.32%	67.68%	16.59%
Unmetered Scattered Load	$29.71	2	$831.88	$102.49	$934.37	89.03%	10.97%	0.04%
Sentinel Lighting	$7.75	23	$2,139.00	$1,568.03	$3,707.03	57.70%	42.30%	0.14%
Street Lighting	$1.68	924	$18,627.84	$1,171.78	$19,799.62	94.08%	5.92%	0.75%
Total Fixed Revenue		**4,811**	**$1,992,518.73**	**$653,725.43**	**$2,646,244.16**			

Distribution Revenues are derived from a combination of fixed monthly charges and volumetric charges applied to the utility's proposed Load Forecast:

- Fixed rate revenues are determined by applying the current fixed monthly charge to the number of customers or connections in each of the customer classes in each month.
- Variable rate revenue is based on a volumetric rate applied to meter readings for kWh consumption or kW demand volume.

WNP's 2020 forecasted revenues recovered through its' current OEB-approved distribution rates are projected at $2,646,244 (exclusive of all rate riders). The revenues at proposed distribution rates are presented in Exhibit 6 and Exhibit 8.

A completed Appendix 2-IB Load Forecast Analysis has filed as Appendix 3A of this Exhibit 2. (Appendix 2-IB Load Forecast Analysis is also included in worksheet 10 of the RRWF).[1]

A copy of WNP's Load Forecast has been filed as a live Excel spreadsheet format that contains the data used to determine the customers, connections, demand and load forecast.[2] The file is named "Appendix 3B WNP Wholesale Load Forecast."

WNP does not expect or plan for any changes in the composition of its' customer classes.

[1] MFR - Completed Appendix 2-IB; the customer and load forecast for the test year must be entered on RRWF, Tab 10
[2] MFR – All data used to determine the customers/connections, demand and load forecasts must be presented and filed in a live Microsoft Excel spreadsheet format

3.1.3 PROPOSED LOAD FORECAST

This section of the application covers:

a) The approach and methodology used to determine the Load Forecast;
b) The economic assumptions and data sources for customer and load forecasts;
c) An explanation of wholesale purchases and subsequent adjustments to the wholesale purchases;
d) The rationale behind each variable used in the regression analysis; and
e) The regression results and how they were used to determine the forecast for the Bridge Year (2020) and Test Year (2021).

The table below illustrates the actual and forecast trends for customer/connection counts, kWh consumption and billed kW demand. The forecast trend has been used by WNP to set its' proposed 2021 distribution rates.

Table 2 - Customer and Volume Trend Table

Rate Class		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
Residential	Customers	3,073	3,103	3,126	3,161	3,190	3,212	3,219	3,246	3,279	3,302	3,328	3,355
	kWh	25,348,494	25,466,302	24,774,725	25,587,071	25,720,644	24,960,131	24,523,576	23,863,110	25,345,905	25,253,896	25,886,876	26,503,100
General Service < 50 kW	Customers	479	478	478	474	473	474	469	473	470	470	469	468
	kWh	11,387,103	11,698,450	11,692,350	12,087,562	11,853,213	12,033,955	11,967,606	11,410,391	11,582,140	11,138,172	11,302,682	11,455,522
General Service 50 to 999 kW	Customers	40	38	38	38	38	36	36	35	34	35	35	34
	kWh	20,855,253	21,357,589	21,917,337	16,562,846	15,962,529	20,081,441	19,893,743	19,029,613	18,305,429	18,739,880	18,727,304	18,697,353
	kW	61,885	65,743	67,820	52,256	48,273	55,778	55,436	53,405	52,915	51,685	52,509	52,425
General Service 1000 to 4,999 kW	Customers	5	5	5	6	6	5	5	5	5	5	5	5
	kWh	38,077,455	39,521,515	42,337,529	49,310,777	50,998,403	47,530,355	45,496,516	45,750,527	43,913,956	42,766,148	42,766,148	42,766,148
	kW	83,976	86,114	89,132	105,092	109,682	99,567	96,818	98,592	98,025	96,230	92,890	92,890
Unmetered Scattered Load	Connections	1	2	1	2	1	1	2	2	2	2	2	2
	kWh	9,732	7,563	5,733	5,733	5,733	5,184	6,816	6,801	6,801	6,288	6,288	6,288
Sentinel Lights	Connections	28	28	28	28	28	27	24	23	23	23	23	23
	kWh	31,586	27,612	26,093	26,093	25,409	24,839	22,057	19,673	19,673	19,673	19,673	19,673
	kW	88	80	72	72	71	70	61	55	55	55	55	55
Street Lights	Connections	900	899	898	900	905	905	907	908	908	908	924	924
	kWh	719,199	713,388	715,663	719,239	720,792	720,792	723,427	697,359	691,015	650,270	229,833	229,833
	kW	1,964	1,964	1,963	1,980	1,983	1,984	1,984	1,920	1,902	1,810	632	632
Total													
Customer /	Connections	4,526	4,553	4,574	4,608	4,642	4,660	4,662	4,692	4,721	4,745	4,786	4,811
	kWh	96,428,822	98,792,419	101,469,430	104,299,320	105,286,722	105,356,697	102,633,741	100,777,475	99,864,919	98,574,327	98,938,804	99,677,917
	kW	147,913	153,902	158,988	159,400	160,009	157,399	154,299	153,972	152,896	149,780	146,086	146,002

3.1.4 LOAD FORECAST METHODOLOGY AND DETAIL[3]

The load forecast presented in this application uses the same approach as used in WNP's most recent Cost of Service applications (EB-2015-0110 and EB-2011-0249).

WNP's load forecast is prepared in two phases:

- The first phase, a billed energy forecast by customer class for 2021, is developed using a total purchase (**Wholesale**) basis regression analysis.
- Then, in the second phase, usage associated with the known change in customers for 2021 is determined and added or removed (if applicable) (**Adjusted Wholesale**).

The methodology proposed in this application predicts wholesale consumption (**Predicted**) using a multiple regression analysis that relates historical monthly wholesale kWh usage (January 2010 to December 2019) to carefully selected variables. The one-way analysis of variance (**ANOVA**) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups. The ANOVA compares the means between the groups you are interested in and determines whether any of those means are statistically significantly different from each other.

WNP did not test the Normalized Average Consumption (NAC) method because NAC is generally seen as an alternative when reliable historical data is not available. [4]

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

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

measure of how much, and for how long, the outside temperature was above that base temperature.

For degree days, daily observations as reported at Environment Canada's weather station at Mount Forest *(latitude: 43°59'00.000" N; longitude: 80°45'00.000" W, elevation 414.50 meters)* is used because this is the closest weather-station to WNP with reliable historic weather data.

The regression model also uses other variables which are tested to see their relationship and contribution to the fluctuating wholesale purchases. Each variable is discussed in detail later in this section.

Explanation of Multiple Regression Analysis

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

$$Y = A + B1X1 + B2X2 + B3X3... + BnXn + E$$

Where:

- Y = Predicted depended variable value
- A = the value of Y when all Xs are zero
- X = the independent variable
- B = the coefficients corresponding to the independent variables
- n = the number of independent variables
- E = an error term

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

much of the change in a dependent variable can be explained by changes in all independent variables.

$$Rsq = \text{B'X'Y} - \text{nAVG(Y)^2)/Y'Y} - \text{nAVG(Y)^2}$$

Where:

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

^2 = Squared

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

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

Where:

K = number of independent variable

n = number of observations

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

The formula behind the monthly weather normalized values is:

Predicted kWh Purchases = (coefficient for the intercept) +
(monthly HDD*coefficient for HDD) +
(monthly CDD*coefficient for CDD) +
(monthly Number of Days*coefficient for monthly Number of Days) +
(monthly Regional Employment Stats*coefficient for monthly Regional Employment Stats) +
(monthly CDM kWh *coefficient for monthly CDM kWh) +
(monthly Sensitive Customers kWh volume*coefficient for monthly Sensitive Customers kWh volume).

When the regression line is linear ($y = ax + b$), the regression coefficient is the constant (a) that represents the rate of change of one variable (y) as a function of changes in the other (x); it is the slope of the regression line. The intercept is the predicted value of the dependent variable when all predictor variables are set to 0.

3.1.5 ECONOMIC OVERVIEW

Location

Wellington North Power Inc. (WNP) is a local distribution company servicing approximately 3,800 customers in the Town of Mount Forest, Village of Arthur and the Village of Holstein in southwestern Ontario, approx. 120 km northwest of Toronto (as the crow flies). The distributor's service territory is approximately 14 sq. km of medium density urban area and spans across the County of Wellington (Arthur and Mount Forest) and Grey County (Holstein).

Interesting Facts about our Community:

Until recently, the town of Mount Forest's motto was "High, Healthy, Happy", as on the water tower and welcome sign when approaching the town from the south and referring to its high elevation of 430 meters (1,410 ft.) above sea level making it one of the highest towns in Southern Ontario.

The village of Arthur is referred to as the "Most Patriotic Village in Canada"; one out of every seven Arthur residents fought in the Second World War.

Holstein is a little village in the Township of Southgate in Grey County. This village is well-known for the Holstein Maplefest, Holstein Rodeo Expo and the famous Holstein Non-Motorized Santa Claus Parade.

Transportation

Mount Forest and Arthur are situated along Highway 6. Driving south on Highway 6 from Mount Forest for approx. 79 km will lead to the 401 highway, south of Guelph. There are no train services or public bus services available in the area; however in January 2020 a private transportation company started an intercity bus route with a fourteen passenger mini-bus operating between Owen Sound and Guelph with stops at Mount Forest and Arthur, running two buses in each direction per day. In October 2019, Wellington County launched a county wide, demand based,

public transit service available to all residents and visitors. This five-year pilot is funded by the Government of Ontario and offers a safe, affordable option for people to move throughout the County. RIDE WELL™ is a public transit service that uses a rideshare model of operation and provides an alternative option to owning and using a personal vehicle and for those who cannot access vehicles for regular needs.

Climate

Mount Forest features a humid continental climate, characterized by warm, sometimes wet summers and cold, snowy winters. At an elevation of 430 meters (1,410 ft.) above sea level, Mount Forest is one of the highest towns in Southern Ontario being located in the western portion of the Dundalk Highlands. As such, its elevation and location downwind of Lake Huron makes it prone to hefty snow totals from lake effect snow averaging nearly 300 centimeters per year. Summers, with a daily mean average of 18°C to 20°C are often cooler than they otherwise would be due to the town's elevation and overnight lows are considerably cooler than places along the lakeshore. Winter average mean temperatures are between -9°C to -11°C and, as a result, WNP is a winter-peaking LDC.

Population

Mount Forest and Arthur exist within the Township of Wellington North. Wellington North has a population of 11,500 with an age profile of:

Table 3 – Population Figures

Age Range	% of Population
0 to 14	18.6%
15 to 64	60.7%
65 or older	20.7%

Source: 2016 Canada Census

Of interest, the age group "65 or older" is 4% higher than the Ontario average. Furthermore, the Town of Mount Forest has a 28.2% population "65 or older" which is 11.5% above the Ontario average.

Labour Force

Within Wellington North, the industry categories employing the highest percentages of the population are:

Table 4 – Industry Employment

Industry	% of Population
Manufacturing	21.5%
Agriculture	11.5%
Construction	10.8%
Retail	9.5%
Healthcare	9.2%

Source: 2016 Canada Census

Of the working population, 23% commute out of the area of Wellington North.

3.1.6 OVERVIEW OF WHOLESALE PURCHASES

WNP purchases electricity from Hydro One and embedded generation (FIT and MicroFIT) and IESO as a market participant. The following table summarizes the annual wholesale purchases for the 10-year period 2010 to 2019 as reported to OEB in RRR annual filing "2.1.5 Supply & Delivery Information":

Table 5 - Wholesale Purchases (Supply) & Delivery (kWh) 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	*10 Year Avg*
kWh Purchases from IESO	102,608,265	105,542,005	108,276,715	110,093,942	112,119,465	111,789,934	108,699,220	106,743,638	106,275,600	104,522,560	*107,667,134*
Embedded Generation (kWh)	24	83,693	135,101	220,117	301,047	390,795	413,215	379,064	391,088	392,026	
Total kWh Purchases *(IESO + Generation)*	**102,608,289**	**105,625,698**	**108,411,817**	**110,314,059**	**112,420,512**	**112,180,729**	**109,112,435**	**107,122,702**	**106,666,688**	**104,914,586**	*107,937,751*
Year-over-Year Change		3%	3%	2%	2%	0%	-3%	-2%	0%	-2%	*0.3%*
Total kWh delivered to all customers	96,062,450	99,140,087	101,548,388	104,299,320	105,286,722	105,356,697	102,633,741	100,777,475	99,864,919	98,574,327	*101,354,413*
Year-over-Year Change		3%	2%	3%	1%	0%	-3%	-2%	-1%	-1%	*0.3%*
Long-term load transfer arrangements (kWh)	0	0	0	0	47,422	43,351	33,435	0	0	0	
Distribution Losses	6,545,839	6,485,611	6,863,429	6,014,739	7,086,368	6,780,681	6,445,259	6,345,227	6,801,769	6,340,259	*6,570,918*
Year-over-Year Change		-1%	6%	-12%	18%	-4%	-5%	-2%	7%	-7%	*0.0%*

Source: RRR report 2.1.5 Supply & Delivery

In preparing its' load forecast, WNP used IESO invoices to collect the monthly Wholesale kWh purchases data by:

$$Wholesale\ IESO\ Purchases\ (kWh) = \frac{Rural\ Rate\ Settlement\ Charge\ (CT753)}{Rural\ or\ Remote\ Electricity\ Protection\ Charge\ (RRRP}$$

The table below illustrates monthly Wholesale purchases from the IESO using the above method and compares the annual totals to the quantities as filed under RRR 2.1.5 Supply & Delivery:

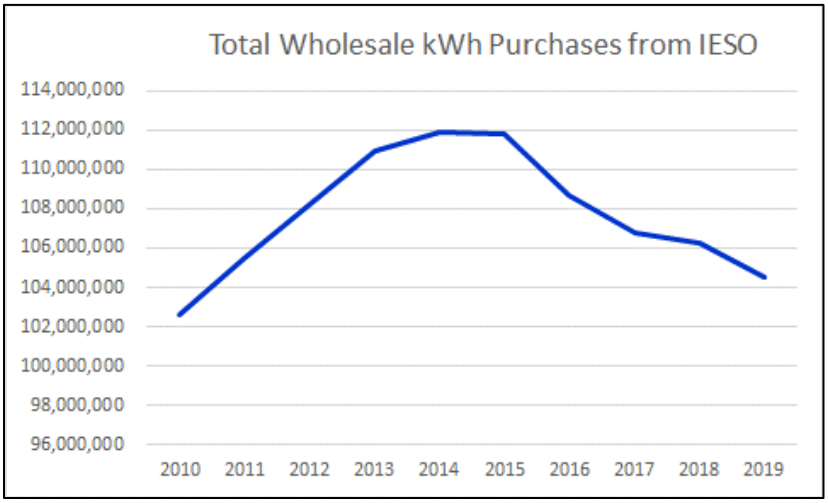
Table 6 - Wholesale Purchases from IESO invoices - 2010-2019

Wholesale Purchases Unadjusted	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	9,555,492	9,903,492	9,969,646	10,229,008	10,797,258	10,452,785	9,895,554	9,930,886	10,120,900	9,946,980
February	8,513,185	9,130,208	9,266,808	9,383,850	9,707,875	9,960,700	9,365,623	8,810,038	8,889,933	8,808,860
March	8,793,400	9,825,154	9,409,615	9,829,058	10,383,525	10,261,985	9,368,754	9,719,967	9,293,433	9,361,540
April	7,779,600	8,000,669	8,528,631	9,207,342	9,160,908	9,023,638	8,794,054	8,325,424	8,633,467	8,484,460
May	8,100,938	7,972,185	8,612,100	8,890,800	8,981,769	8,928,854	8,456,385	8,509,933	8,484,267	8,296,560
June	7,984,485	7,947,462	8,638,909	8,539,508	8,511,154	8,756,485	8,563,654	8,510,690	8,312,400	7,886,820
July	8,350,992	8,282,731	8,769,527	8,808,542	8,491,077	9,022,485	8,313,669	8,340,833	8,610,467	8,759,520
August	8,692,192	8,870,377	9,201,500	8,890,500	8,875,485	9,116,285	9,613,546	8,979,967	9,144,333	8,748,640
September	8,099,892	8,383,662	8,451,018	8,525,042	8,841,092	9,141,308	8,887,523	8,504,667	8,298,633	8,164,120
October	8,501,569	8,946,246	9,155,036	9,300,442	9,370,962	9,198,408	8,931,731	8,854,833	8,833,467	8,548,680
November	8,832,892	8,876,454	9,016,264	9,558,892	9,361,692	8,993,831	9,077,723	9,238,000	8,985,167	8,807,700
December	9,403,608	9,353,623	9,266,691	9,797,817	9,419,200	8,933,085	9,430,592	9,018,400	8,669,133	8,708,680
Total kWh Purchases from IESO	**102,608,246**	**105,492,262**	**108,285,745**	**110,960,800**	**111,901,997**	**111,789,846**	**108,698,808**	**106,743,638**	**106,275,600**	**104,522,560**
Reported RRR data kWH Purchases from IESO	102,608,265	105,542,005	108,276,715	110,093,942	112,119,465	111,789,934	108,699,220	106,743,638	106,275,600	104,522,560
Variance - kWh	19	49,743	(9,030)	(866,858)	217,467	88	412	0	(0)	0
Variance - %	0.00%	0.05%	-0.01%	-0.79%	0.19%	0.00%	0.00%	0.00%	0.00%	0.00%

The variance between the Purchase kWh quantities taken from the IESO invoice to as reported under RRR annual filing are minimal with the exception of 2013. In April 2013, there was an 18-hour power outage in Mount Forest due to an ice-storm which resulted in difficulties in obtaining accurate settlement data for this month – estimated primary meter data reported 8,336,827 kWh whereas using the IESO invoice, the quantity was 9,207,342. As WNP has used the IESO invoice kWh to derive monthly kWh Purchases for its' load forecast, for consistency, WNP elected to also use this method for April 2013.

The chart below plots WNP's Wholesale kWh unadjusted Purchases (i.e. without inclusion of embedded generation kWh or adjustment for weather-normalization) over the 10-year period of 2010 to 2019.

Table 7 - Wholesale Purchases from IESO invoices - 2010-2019



From 2010 to 2014, WNP' load steadily increased; however from 2015 onwards, the utility load is declining. Indeed, WNP's load has increased by 1.9% when comparing Wholesale Purchases 2019 to 2010 (104,522,560 kWh in 2019 compared to 102,608,246 kWh in 2010). Although the Distributor has experienced customer growth of less than 1% per year, the LDC has observed a decrease in the average monthly kWh consumed per customer. This kWh usage per customer decrease could be attributed to energy-saving initiatives (e.g. replacing bulbs with LED lights) as well as larger customers partaking in energy conservation programs to reduce their electricity peak demand as well as energy costs.

Embedded Generation

To better represent the trend in wholesale purchases, WNP has adjusted its' Wholesale purchases prior to running the regression analysis. The purpose of the adjustment was to add back all MicroFIT and FIT (Feed-in tariff) generation kWh data to the Wholesale purchases. This adjustment is necessary because the generated kWh volume is consumed within the utility's service territory. By not including generation data, WNP's wholesale purchases would be lower and therefore not reflective of the true electricity demand. Consequently, generation data is "added-back" to the IESO kWh Wholesale purchases to reflect energy demand of WNP's territory.

The table below illustrates the generated total kWh from FIT and MicroFIT installations over the 10-year period of 2010 to 2019:

Table 8 – Embedded Generation kWh - 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	0	65	2,638	4,706	2,439	7,605	5,208	5,768	7,991	9,214
February	0	1,664	4,659	2,407	2,992	6,503	13,850	12,728	14,040	12,655
March	0	5,312	10,173	15,410	13,924	37,781	29,901	28,699	41,770	35,598
April	0	7,099	13,281	23,775	25,104	41,390	44,752	43,250	37,676	35,834
May	0	6,194	16,576	33,327	32,010	51,652	56,991	47,947	57,043	44,721
June	0	9,229	16,383	31,146	48,617	49,235	59,808	51,759	54,834	55,082
July	0	22,629	16,817	24,908	52,243	56,402	57,728	51,602	59,166	61,228
August	0	10,674	20,048	30,729	46,971	45,641	52,637	48,390	47,776	57,104
September	0	8,059	16,364	25,519	39,980	41,373	43,823	44,462	38,626	36,923
October	0	6,054	8,530	17,141	20,846	26,679	27,242	29,071	21,692	29,569
November	0	4,891	6,433	8,804	7,638	15,989	19,126	10,901	4,955	8,601
December	24	1,825	3,199	2,247	8,282	8,323	2,148	4,527	5,517	5,499
Total Embedded Generation kWh	**24**	**83,693**	**135,101**	**220,117**	**301,047**	**388,572**	**413,215**	**379,104**	**391,088**	**392,026**

Adjusted Wholesale Purchases:

The table below illustrates the sum of IESO Wholesale purchases plus kWh generated from FIT and MicroFIT installations (i.e. adjusted Wholesale purchases) for the period of 2010 to 2019:

Table 9 – Adjusted Wholesale kWh Purchases to include Embedded Generation

Wholesale Purchases Adjusted to Include Embedded Generation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	9,555,492	9,903,492	9,969,646	10,229,008	10,799,698	10,460,389	9,900,762	9,936,653	10,128,891	9,956,194
February	8,513,185	9,130,208	9,266,808	9,383,850	9,710,867	9,967,203	9,379,473	8,822,766	8,903,973	8,821,515
March	8,793,400	9,825,154	9,409,615	9,829,058	10,397,449	10,299,766	9,398,655	9,748,665	9,335,203	9,397,138
April	7,779,600	8,000,669	8,528,631	9,207,342	9,186,013	9,065,028	8,838,805	8,368,674	8,671,143	8,520,294
May	8,100,938	7,972,185	8,612,100	8,890,800	9,013,780	8,980,505	8,513,376	8,557,880	8,541,310	8,341,281
June	7,984,485	7,947,462	8,638,909	8,539,508	8,559,771	8,805,720	8,623,462	8,562,449	8,367,234	7,941,902
July	8,350,992	8,282,731	8,769,527	8,808,542	8,543,320	9,078,886	8,371,398	8,392,435	8,669,633	8,820,748
August	8,692,192	8,870,377	9,201,500	8,890,500	8,922,456	9,161,926	9,666,183	9,028,357	9,192,109	8,805,744
September	8,099,892	8,383,662	8,451,018	8,525,042	8,881,073	9,182,681	8,931,346	8,549,129	8,337,260	8,201,043
October	8,501,569	8,946,246	9,155,036	9,300,442	9,391,807	9,225,087	8,958,973	8,883,905	8,855,159	8,578,249
November	8,832,892	8,876,454	9,016,264	9,558,892	9,369,331	9,009,820	9,096,850	9,248,901	8,990,122	8,816,301
December	9,403,608	9,353,623	9,266,691	9,800,063	9,427,482	8,941,407	9,432,741	9,022,927	8,674,651	8,714,179
Total Wholesale kWh Purchases from IESO + Embedded Generation	**102,608,246**	**105,492,262**	**108,285,745**	**110,963,047**	**112,203,045**	**112,178,419**	**109,112,022**	**107,122,742**	**106,666,688**	**104,914,586**

The table below summarizes the annual Wholesale kWh purchases, the annual kWh generation and the resulting adjusted Wholesale kWh purchases:

Table 10 – Adjusted Wholesale kWh by Year

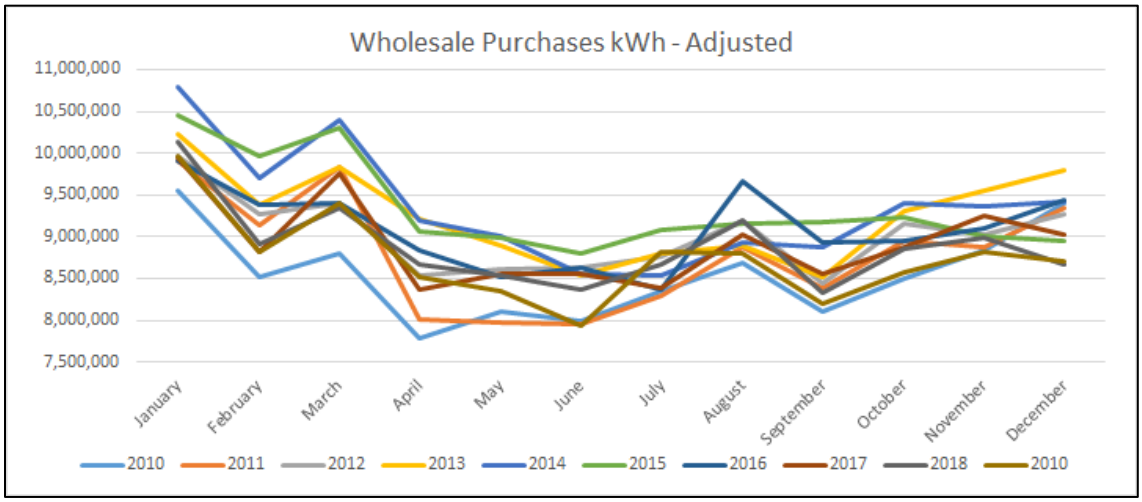
Year	Wholesale Purchases (kWh)	Generation (kWh)	Adjusted Wholsale Purchases (kWh)
	A	*B*	*C = A + B*
2010	102,608,222	24	102,608,246
2011	105,408,568	83,693	105,492,262
2012	108,150,644	135,101	108,285,745
2013	110,742,930	220,117	110,963,047
2014	111,901,997	301,047	112,203,045
2015	111,789,846	388,572	112,178,419
2016	108,698,808	413,215	109,112,022
2017	106,743,638	379,104	107,122,742
2018	106,275,600	391,088	106,666,688
2019	104,522,560	392,026	104,914,586

Wholesale Market Participants:

WNP has no (0) Wholesale Market Participant (WMP) customers so there were no wholesale adjustments required.

The graph below illustrates the adjusted Wholesale kWh purchases by month over the 10-year period 2010-2019. This data has been used in WNP's load forecast:

Table 11 - Monthly Adjusted Wholesale Purchases (kWh)



The table below summarizes the annual adjusted Wholesale kWh purchases that WNP has used to create its' Load Forecast for the Bridge Year (2020) and Test Year (2021):

Table 12 - Monthly Adjusted Wholesale Purchases (kWh)

Year	Adjusted Wholsale Purchases (kWh)
2010	102,608,246
2011	105,492,262
2012	108,285,745
2013	110,963,047
2014	112,203,045
2015	112,178,419
2016	109,112,022
2017	107,122,742
2018	106,666,688
2019	104,914,586

3.1.7 OVERVIEW OF VARIABLES USED[5]

For WNP, the variation in monthly electricity consumption is influenced by 5 factors:

1) Weather (e.g. heating and cooling), which is by far the most dominant effect on most systems;
2) Number of days per month;
3) Regional Employment - increases or decreases in economic activity leads to changes in employment;
4) Conservation and Demand Management (CDM) – energy saving programs and initiatives have influenced consumers' and businesses' behaviour and usage patterns; and
5) Sensitive Customers - these are the large manufacturing customers (5 accounts) in the General Service 1000 – 4999 kW customer class who account for over 40% of WNP's load and in the past, have been "sensitive" to external conditions. For example, these customers altered their shift pattern as a consequence of the 2008/2009 Global Recession which in-turn affected WNP's IESO kWh wholesale purchases.

Details relating to each variable used in the regression analysis are presented in the next section.

Heating and Cooling:

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

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

temperature is above 18°C. For WNP, the monthly HDD and CDD as reported at Environment Canada's weather station at Mount Forest *(latitude: 43°59'00.000" N; longitude: 80°45'00.000" W, elevation 414.50 meters)* were used because this is the closest weather-station to the utility with reliable historic weather data.

WNP has adopted the 10-year average from 2010 to 2019 as the definition of weather normal. The LDC's opinion is that a ten-year average based on the most recent ten calendar years available is a reasonable compromise that likely reflects the "average" weather experienced in recent years. WNP used this definition in its' previous cost of service applications (EB-2015-0110 and EB-2011-0249) and many other LDCs have also adopted this definition for the purposes of cost-of-service rebasing.

The following table outlines the monthly weather data used in the regression analysis.

Table 13 - HDD and CDD as reported at Utility Location

Heating Degree Day (HDD)												
	January	February	March	April	May	June	July	August	September	October	November	December
2010	791.50	680.10	504.70	273.20	148.20	55.23	12.70	19.30	137.00	301.00	439.27	744.30
2011	866.50	720.40	660.10	379.30	168.10	64.10	3.70	13.60	106.33	276.60	399.40	609.80
2012	694.60	611.40	388.70	399.00	123.80	56.40	0.40	22.50	134.70	292.20	505.72	590.90
2013	703.37	699.60	649.00	414.20	160.67	67.40	19.60	33.90	133.10	270.69	557.37	767.20
2014	899.70	820.97	767.16	423.07	185.60	36.00	59.10	40.50	117.20	292.40	548.07	623.73
2015	871.20	928.10	701.50	382.85	135.30	59.20	31.30	35.00	58.00	310.50	387.10	491.90
2016	744.95	660.05	522.60	438.15	187.60	66.55	17.30	3.00	66.60	250.80	383.15	678.60
2017	683.00	559.30	649.80	306.90	228.20	57.10	9.40	47.40	92.40	206.30	506.30	775.10
2018	792.90	619.60	631.60	515.70	120.00	46.50	11.00	5.70	87.90	338.70	568.90	623.70
2019	848.80	690.00	674.13	412.50	227.05	70.20	6.60	25.10	90.90	293.80	576.80	647.30
10 - Year Average	789.65	698.95	614.93	394.49	168.45	57.87	17.11	24.60	102.41	283.30	487.21	655.25

Cooling Degree Day (HDD)												
	January	February	March	April	May	June	July	August	September	October	November	December
2010	0.00	0.00	0.00	1.00	24.00	18.70	89.70	82.00	15.50	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	12.80	16.40	104.30	53.30	20.70	0.30	0.00	0.00
2012	0.00	0.00	3.40	0.00	17.40	57.10	94.00	50.70	15.30	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	18.70	35.00	75.90	34.50	17.20	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	7.60	44.00	25.70	32.40	12.40	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	23.40	5.70	43.40	38.10	47.45	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	22.40	27.55	83.00	91.25	25.10	1.50	0.00	0.00
2017	0.00	0.00	0.00	0.00	2.80	33.20	37.80	26.30	38.80	1.40	0.00	0.00
2018	0.00	0.00	0.00	0.00	30.70	28.70	77.30	80.90	46.10	7.90	0.00	0.00
2019	0.00	0.00	0.00	0.00	1.00	16.40	92.50	33.30	13.20	2.10	0.00	0.00
10 - Year Average	0.00	0.00	0.34	0.10	16.08	28.28	72.36	52.28	25.18	1.32	0.00	0.00

Days per month:

WNP also tested a "Days per month" variable because this identifies seasonal peaks and accounts for the more / less energy depending on the number of days in the month. Although the variables did not yield particularly significant results, it did slightly improve the R-Square, and therefore WNP opted to keep it as a variable.

Regional Employment:

In order to measure the change in economic activity, a data series must be chosen which represents, as much as possible, regional economic activity. WNP used the monthly full-time employment levels for the economic region of Kitchener-Waterloo-Barrie in Ontario as reported in Statistics Canada's Monthly Labour Force Survey (CANSIM). This variable was included because, because the Kitchener-Waterloo-Barrie is geographically closer to WNP's service area than other regional centers reported by Statistics Canada.

The table below outlines the regional employment levels for the WNP's economic region which were used in the regression analysis to predict WNP's load forecast.

Table 14 – Regional Employment Levels

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	633.60	649.30	670.90	681.60	689.40	705.70	715.80	695.30	703.70	748.70
February	630.50	651.20	668.70	682.60	682.30	700.10	710.90	696.50	692.60	741.30
March	627.50	657.10	666.00	683.60	680.20	698.30	709.40	697.80	688.90	733.80
April	631.60	666.40	667.40	685.40	679.40	697.60	707.40	705.60	695.40	734.00
May	641.50	671.50	672.10	690.30	690.00	704.90	712.40	717.20	704.20	747.10
June	657.20	681.80	678.40	696.70	704.40	715.10	714.60	736.20	720.20	762.30
July	669.80	691.50	682.00	702.80	715.10	716.60	712.30	747.10	739.30	764.20
August	672.00	694.90	678.50	701.40	718.70	713.10	707.10	752.80	747.90	760.20
September	665.10	688.60	671.90	698.40	719.30	710.20	702.40	744.40	745.50	756.50
October	657.20	682.20	672.80	698.40	723.50	716.90	702.30	735.00	742.10	760.70
November	622.20	677.00	676.80	700.00	721.00	721.00	680.08	726.20	745.70	758.40
December	653.30	676.60	682.70	695.40	714.30	718.70	678.47	716.50	751.00	756.50

Conservation and Demand Management (CDM):

The CDM variable is an estimate of monthly energy savings achieved from OPA/IESO prescribed CDM-programs since 2006. The CDM values include persistence savings (i.e. kWh savings that continue into future months and years). The addition of the monthly values will equal the sum of the total annual results presented in the table below. And, in the first year of the program, the half-year rule is applied.

The table below shows the CDM results (kWh) and provides the source of the annual program and persistence data by program year.

Table 15 – CDM kWh Variable Data with Half-Year Rule Applied

Year	OPA Annual CDM Results 2006 to 2010 programs (kWh)	OPA / IESO Annual CDM Results 2011 to 2014 programs (kWh)	IESO Annual CDM Results 2015 to 2017 programs (kWh)	2018 and 2019 Programs (kWh) Participation & Cost Report	2020 Programs	Total Annual CDM Results (kWh)
2006	119,655					119,655
2007	317,913					317,913
2008	586,960					586,960
2009	1,153,337					1,153,337
2010	1,406,316					1,406,316
2011	1,426,937	76,759				1,503,696
2012	1,406,861	487,851				1,894,712
2013	1,398,269	831,113				2,229,382
2014	1,353,128	1,146,521				2,499,649
2015	1,226,988	1,300,953	396,066			2,924,007
2016	1,162,172	1,300,953	1,088,425			3,551,550
2017	958,187	1,300,953	1,812,828			4,071,968
2018	724,907	1,300,953	2,239,613	316,401		4,581,874
2019	666,840	1,300,953	2,239,613	992,123		5,199,528
2020	441,871	1,300,953	2,239,613	1,347,598	0	5,330,034
2021	432,369	1,300,953	2,210,863	1,347,598	0	5,291,782

** kWh Savings are reported net savings plus persistence (without losses)*

WNP used the CDM results from the following CDM programs:

- 2006 to 2010 Programs – kWh Net Savings and persistence up to Test Year 2021 derived from OPA Published results.
- 2011 to 2014 Programs– kWh Net Savings and persistence up to Test Year 2021 derived from OPA/IESO Annual Published reports.
- January 2015 to April 2019 under the Conservation First Framework Programs - kWh Net Savings and persistence up to Test Year 2021 derived from IESO Annual Published reports for years 2015, 2016, 2017 and 2018 and the Participation & Cost report of April 2019.

The Ministry of Energy, Northern Development and Mines' directive of March 20, 2019, the IESO's Conservation First Framework (CFF) was revoked and all electricity CDM activity from April 1st 2019 onwards will be centrally delivered and administered by the IESO. As a result, WNP has reported no CDM programs for 2020. Energy savings for Bridge Year (2020) and Test Year (2021) in the table above are the persistent kWh savings generated from prior years CDM programs.

The table below summarizes the CDM variable data that has been used by WNP.

Table 16 – CDM kWh Variable Data with Half-Year Rule Applied

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
January	132,356	120,822	150,638	189,298	211,077	239,322	288,175	346,871	381,012	437,188	484,257	463,519
February	131,088	123,230	153,964	191,077	213,285	243,284	293,443	349,547	385,714	441,648	482,266	464,681
March	129,821	125,638	157,289	192,856	215,492	247,246	298,712	352,223	390,415	446,108	480,275	465,843
April	128,553	128,046	160,615	194,636	217,700	251,208	303,981	354,900	395,117	450,568	478,284	467,005
May	127,286	130,455	163,941	196,415	219,907	255,171	307,519	357,576	399,818	455,028	476,293	468,167
June	126,019	132,863	167,267	198,194	222,115	259,133	312,758	360,253	404,520	459,488	474,302	469,329
July	124,751	135,271	170,592	199,973	224,322	263,095	317,997	362,929	409,221	463,948	472,312	470,491
August	123,484	137,679	173,918	201,753	226,530	267,057	323,237	365,605	413,923	468,408	470,321	471,653
September	122,216	140,088	177,244	203,532	228,737	271,019	328,476	368,282	418,624	472,868	468,330	472,815
October	120,949	142,496	180,856	205,311	230,945	274,981	333,715	370,958	423,326	477,328	466,339	473,977
November	119,681	144,904	184,187	207,091	233,152	278,943	338,955	373,635	428,027	481,788	464,348	475,139
December	118,414	147,312	187,518	208,870	235,360	282,906	344,194	376,311	432,728	486,248	462,357	476,301
Total CDM kWh	**1,504,617**	**1,608,804**	**2,028,029**	**2,389,006**	**2,678,624**	**3,133,365**	**3,791,162**	**4,339,089**	**4,882,445**	**5,540,617**	**5,679,685**	**5,638,923**

Note: CDM kWh savings with persistence and Losses applied

Sensitive Customers:

WNP has five customer accounts in its General Service 1,000-4,999 kW customer class, all of which are manufacturers. These customers account for over 40% of WNP's annual load and, in the past, have been "sensitive" to external conditions. For example, these customers altered their shift pattern as a consequence of the 2008/2009 Global Recession which in-turn affected WNP's IESO kWh wholesale purchases.

In WNP's 2012 Cost of Service rate application (EB-2011-0249), Exhibit 3 / Tab 2 / Schedule 1 described how the utility:

> *"removed data for three specific accounts from the analysis due to their negative effect on the results of the regression analysis. All three accounts are in the GS>1000-4999KW customer class and Wellington North Power Inc. used experience and knowledge of these customers' historical loads to predict their usage for the [2011] Bridge and [2012] Test Years".*

In this rate application, WNP has included the GS>1,000-4,999kW customers in the regression analysis and created a variable based on their monthly billed kWh (without losses) as per the table below:

Table 17 – Sensitive Customers Billed kWh (with Losses)

Sensitive Customers	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	3,487,296	3,844,683	4,250,570	4,525,947	4,667,490	4,513,683	4,405,571	4,687,093	4,526,353	4,403,212
February	3,203,841	3,768,297	4,141,903	4,293,132	4,342,401	4,307,575	4,328,369	4,246,253	4,091,882	3,946,642
March	3,646,819	4,320,214	4,592,874	4,392,825	4,788,789	4,884,587	4,524,815	4,726,111	4,458,043	4,369,393
April	3,531,303	3,411,270	4,218,127	4,685,486	4,624,196	4,732,559	4,449,083	4,367,736	4,217,020	4,248,726
May	3,786,484	3,753,616	4,557,568	4,795,235	4,967,135	5,023,123	4,474,576	4,615,335	4,625,443	4,400,983
June	3,861,171	3,885,860	4,499,266	4,516,928	4,578,201	4,909,278	4,649,235	4,628,754	4,420,602	4,127,497
July	3,721,818	3,654,592	4,141,164	4,372,227	4,518,533	4,834,398	3,951,978	4,242,129	4,194,517	4,161,544
August	4,170,740	4,498,565	4,856,394	4,771,016	4,873,161	5,059,556	5,045,747	4,968,790	4,725,689	4,590,396
September	3,919,809	4,242,245	4,216,762	4,513,365	4,845,023	5,022,140	4,829,713	4,504,351	4,238,332	4,357,475
October	3,943,157	4,411,474	4,599,892	4,880,787	4,964,577	4,871,537	4,731,581	4,755,960	4,538,667	4,416,878
November	3,894,738	4,082,024	4,092,980	4,552,413	4,377,795	4,473,874	4,636,843	4,578,001	4,247,843	4,037,559
December	3,453,656	3,790,571	3,797,850	4,004,843	3,953,464	3,903,048	4,074,210	3,605,479	3,518,108	3,487,389
Total Billed kWh with Loss	**44,620,831**	**47,663,410**	**51,965,350**	**54,304,204**	**55,500,763**	**56,535,359**	**54,101,720**	**53,925,992**	**51,802,500**	**50,547,692**

Note regarding COVID-19 pandemic:

WNP observed that all customer accounts in its General Service 1,000-4,999 kW customer class were affected in April 2020 due to the COVID-19 pandemic. Two accounts shut-down plants for two weeks for cleaning, sterilization, and updating the facilitates to meet public health social distancing requirements; after two weeks, the plants re-opened and operated as normal. The three other accounts saw some reduction in load but not complete shut-down in April. As mentioned, in its' load forecast, WNP has not assumptions to account for the impact of COVID-19 in the Bridget Year (2020) or Test Year (2021) and WNP will track any lost revenue from these customers

in the COVID regulatory account if one or more of the customers in this rate class close because of the pandemic.

Multiple Regression Analysis:

Using a combination of adjusted Wholesale kWh purchases and the variables listed above, a multiple regression analysis was used to develop an equation describing the relationship between monthly actual wholesale kWh and the explanatory variables. WNP also used a correlation function to examine the relationship between the variables included in the analysis. The results of the correlation analysis for each scenario can also be found at worksheet "2a. Power Purchase Model" of Appendix 3B – WNP Wholesale Load Forecast.

To project the adjusted wholesale purchases for the 2020 Bridge Year and 2021 Test Year, the model uses the following mathematical conventions:

Table 18 – Treatment of Variables in Bridge Year & Test Year

Variable	Convention Applied to 2020 Bridge and 2021 Test Years
a) Heating and Cooling:	Used 10-year monthly average of 2010 to 20019 and applied to both 2020 and 2021.
b) Number of days per month:	Used actuals for both 2020 and 2021.
c) Employment Factor:	Used the 10-year Trend of 2010 to 2019 data and applied to both 2020 and 2021.
d) CDM	Used 2010 to 2019 results with CDM persistence as per OPA/ IESO verified reports (for years 2006 to 2017) and Participation & Cost reports (for 2018 and up to April 2019) and applied to both 2020 and 2021. This variable was used because there is no separate CDM adjustment in the resulting load forecast for the Bridget Year (2020) and Test Year (2021).
e) Sensitive customers:	Used a 10-year trend on the actual monthly billed kWh (without losses) values and applied to both 2020 and 2021.

Origin of Variables:

- Heating Degree Days: Stats Canada (*Environment Canada's weather station at Mount Forest.*)
- Cooling Degree Days: Stats Canada (*Environment Canada's weather station at Mount Forest.*)
- Days per month Computed by the utility.

- Regional Employment — Stats Canada (region: Kitchener-Waterloo-Barrie).
- CDM — OPA/IESO published reports containing kWh net-savings and persistence for future years kWh savings.
- Sensitive Customers — Computed by the utility.

Rationale for including and excluding variables:

During the process of testing the regression analysis, many different variables and time periods are tested to arrive at the best R-Squared. The utility's rationale behind selecting or dropping certain variables involves a "no-worst" rationale. In other words, if a variable is justified and does not worsen the R-Squared results, it is generally kept as one of the regression variables. For instance, "number of Peak Hours" was dropped as a variable because it was not statistically significant.

The results of the correlation analysis for each scenario of variables tested can also be found at worksheet "6. Load F-Cast Scenarios" of Appendix 3B – WNP Wholesale Load Forecast.

3.1.8 REGRESSION RESULTS

The table below represents the regression results used to determine WNP's Load Forecast:

Table 19 - Correlation/Regression Results

Regression Statistics	
Multiple R	0.9751
R Square	0.9509
Adjusted R Square	0.9482
Standard Error	133925.4005
Observations	120

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	39215243543551	6535873923925	364	0
Residual	113	2026769456665	17936012891		
Total	119	41242013000216			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-724235.9099	653583.7235	-1.108099672	0.270171778	-2019103.146	570631.3263	-2019103.146	570631.3263
Heating Degree Day	2597.635408	65.38325378	39.72936888	3.10362E-68	2468.09939	2727.171426	2468.09939	2727.171426
Cooling Degree Day	10105.53227	678.5559418	14.89270324	2.04666E-28	8761.19057	11449.87398	8761.19057	11449.87398
# of Days in Month	124979.1741	15464.21395	8.081831673	7.8144E-13	94341.77716	155616.5711	94341.77716	155616.5711
Regional Employment	1781.927646	813.5687331	2.190260728	0.030559565	170.1012505	3393.754041	170.1012505	3393.754041
CDM	-1.366799891	0.222257399	-6.149626047	1.2037E-08	-1.807131885	-0.926467897	-1.807131885	-0.926467897
Sensitive Customers	0.907035002	0.033576398	27.01406517	3.9975E-51	0.840514102	0.973555902	0.840514102	0.973555902

The resulting regression equation yields an adjusted R-squared of 0.9482. When actual annual Wholesale kWh Purchases values are compared to annual Wholesale kWh Predicted values resulting from the regression equation, the mean absolute percentage error (MAPE) is 0.200%.

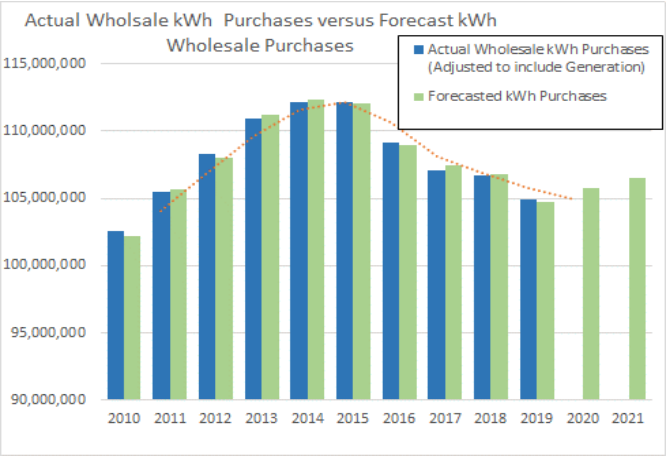
Once WNP calculated its' preferred Regression Results, the Load Forecast model then uses the coefficients from the regression results to adjust the Wholesale purchases. The table below demonstrates the results of this adjustment and compares the actual Wholesale purchases to the predicted Wholesale purchases.

Table 20 - Wholesale vs. Adjusted Purchases using the Coefficients from the Regression Results

Year	Wholesale Adjusted	*Year over Year*	Predicted Purchases	*Variance (kWh) Predicted less Actual*	Variance (Abs)
2010	102,608,246		102,173,701	*-434,545*	0.42%
2011	105,492,262	*2.8%*	105,683,889	*191,627*	0.18%
2012	108,285,745	*2.6%*	108,029,546	*-256,200*	0.24%
2013	110,963,047	*2.5%*	111,196,047	*233,001*	0.21%
2014	112,203,045	*1.1%*	112,379,327	*176,283*	0.16%
2015	112,178,419	*0.0%*	112,108,114	*-70,305*	0.06%
2016	109,112,022	*-2.7%*	108,980,115	*-131,908*	0.12%
2017	107,122,742	*-1.8%*	107,482,226	*359,484*	0.34%
2018	106,666,688	*-0.4%*	106,776,885	*110,198*	0.10%
2019	104,914,586	*-1.6%*	104,736,951	*-177,636*	0.17%

The graph below illustrates variances between Actual Wholesale kWh Purchase kWh versus Adjusted Wholesale kWh Purchases indicating the resulting prediction equation to be reasonable:

Table 21 – Actual Wholesale kWh Purchases vs. Forecasted kWh



The table below presents the results of the mean absolute deviation (MAD), the mean square error (MSE), the root mean square (RMSE) and the mean absolute percentage error (MAPE):

Table 22 - MAP-MSE-MAPE Results

Time	Actual	Forecast	Variance Actual less Forecast	Mean Absolute Deviation (MAD)	Mean Square of Error (MSE)	Mean Absolute Percentage Error (MAPE)
t	*A_t*	*F_t*	*= A_t - F_t*	*= ABS(A_t - F_t)*	*= ABS(A_t - F_t)^2*	*= ABS(A_t - F_t) / A_t*
1	102,608,246	102,173,701	434,545	434,545	188,829,403,739	0.42%
2	105,492,262	105,683,889	-191,627	191,627	36,720,921,795	0.18%
3	108,285,745	108,029,546	256,200	256,200	65,638,240,635	0.24%
4	110,963,047	111,196,047	-233,001	233,001	54,289,296,254	0.21%
5	112,203,045	112,379,327	-176,283	176,283	31,075,546,818	0.16%
6	112,178,419	112,108,114	70,305	70,305	4,942,775,505	0.06%
7	109,112,022	108,980,115	131,908	131,908	17,399,600,555	0.12%
8	107,122,742	107,482,226	-359,484	359,484	129,229,085,307	0.34%
9	106,666,688	106,776,885	-110,198	110,198	12,143,579,496	0.10%
10	104,914,586	104,736,951	177,636	177,636	31,554,387,638	0.17%
Total					571,822,837,741	2.00%

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

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

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

Twenty-Year Weather Normalization

The table below displays 20 years of historical Heating Degree Days (HDD) and Cooling Degree Days (CDD) data.

Table 23 - Twenty-year HDD & CDD Data

Heating Degree Day (HDD)												
HDD	January	February	March	April	May	June	July	August	September	October	November	December
2000	800.40	673.60	493.17	413.13	196.00	78.40	50.80	42.80	165.90	280.20	506.57	845.01
2001	754.00	679.70	681.30	369.90	172.20	79.00	51.40	17.00	165.80	298.22	387.70	568.27
2002	722.56	663.30	625.77	390.73	297.70	69.20	16.68	26.90	67.37	371.10	531.60	701.30
2003	902.08	798.60	661.20	420.64	239.47	81.70	25.70	24.60	111.30	333.00	447.90	649.40
2004	913.20	701.70	575.90	377.40	221.70	104.15	30.60	71.90	83.90	290.60	445.90	729.10
2005	829.30	691.00	708.10	357.60	244.50	26.90	13.60	11.80	68.20	273.60	445.50	721.80
2006	626.30	693.70	613.60	328.40	176.50	59.70	8.60	39.90	145.00	351.80	420.90	569.80
2007	729.30	793.80	593.10	424.30	170.30	55.50	34.00	26.30	83.90	189.20	525.90	696.20
2008	693.80	736.00	698.00	299.10	263.10	50.30	19.40	32.23	98.80	329.80	516.60	733.60
2009	901.40	679.40	597.00	361.70	219.60	99.10	61.20	43.00	110.20	345.30	396.20	698.60
2010	791.50	680.10	504.70	273.20	148.20	55.23	12.70	19.30	137.00	301.00	439.27	744.30
2011	866.50	720.40	660.10	379.30	168.10	64.10	3.70	13.60	106.33	276.60	399.40	609.80
2012	694.60	611.40	388.70	399.00	123.80	56.40	0.40	22.50	134.70	292.20	505.72	590.90
2013	703.37	699.60	649.00	414.20	160.67	67.40	19.60	33.90	133.10	270.69	557.37	767.20
2014	899.70	820.97	767.16	423.07	185.60	36.00	59.10	40.50	117.20	292.40	548.07	623.73
2015	871.20	928.10	701.50	382.85	135.30	59.20	31.30	35.00	58.00	310.50	387.10	491.90
2016	744.95	660.05	522.60	438.15	187.60	66.55	17.30	3.00	66.60	250.80	383.15	678.60
2017	683.00	559.30	649.80	306.90	228.20	57.10	9.40	47.40	92.40	206.30	506.30	775.10
2018	792.90	619.60	631.60	515.70	120.00	46.50	11.00	5.70	87.90	338.70	568.90	623.70
2019	848.80	690.00	674.13	412.50	227.05	70.20	6.60	25.10	90.90	293.80	576.80	647.30
10 - Year Average	789.65	698.95	614.93	394.49	168.45	57.87	17.11	24.60	102.41	283.30	487.21	655.25
20 - Year Average	788.44	705.02	619.82	384.39	194.28	64.13	24.15	29.12	106.23	294.79	474.84	673.28
20 Year Trend	787.66	695.53	634.71	403.76	164.32	53.82	13.34	23.48	87.81	277.20	503.53	642.64

Cooling Degree Day (HDD)												
CDD	January	February	March	April	May	June	July	August	September	October	November	December
2000	0.00	0.00	0.00	0.00	10.90	19.80	22.60	39.62	13.80	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	4.50	37.60	44.80	56.50	13.40	0.00	0.00	0.00
2002	0.00	0.00	0.00	5.00	3.90	43.30	91.52	44.60	43.17	3.70	0.00	0.00
2003	0.00	0.00	0.00	0.30	0.00	17.60	40.00	54.40	9.50	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	7.50	15.70	35.30	24.40	20.40	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.20	0.60	98.50	85.30	62.10	22.60	9.40	0.00	0.00
2006	0.00	0.00	0.00	0.00	21.20	29.30	96.50	35.30	2.80	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	16.10	46.30	43.40	57.20	29.40	15.20	0.00	0.00
2008	0.00	0.00	0.00	1.40	0.30	44.80	55.10	28.40	4.50	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	2.00	15.50	10.30	48.10	7.50	0.00	0.00	0.00
2010	0.00	0.00	0.00	1.00	24.00	18.70	89.70	82.00	15.50	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	12.80	16.40	104.30	53.30	20.70	0.30	0.00	0.00
2012	0.00	0.00	3.40	0.00	17.40	57.10	94.00	50.70	15.30	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	18.70	35.00	75.90	34.50	17.20	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	7.60	44.00	25.70	32.40	12.40	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	23.40	5.70	43.40	38.10	47.45	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	22.40	27.55	83.00	91.25	25.10	1.50	0.00	0.00
2017	0.00	0.00	0.00	0.00	2.80	33.20	37.80	26.30	38.80	1.40	0.00	0.00
2018	0.00	0.00	0.00	0.00	30.70	28.70	77.30	80.90	46.10	7.90	0.00	0.00
2019	0.00	0.00	0.00	0.00	1.00	16.40	92.50	33.30	13.20	2.10	0.00	0.00
10 - Year Average	0.00	0.00	0.34	0.10	16.08	28.28	72.36	52.28	25.18	1.32	0.00	0.00
20 - Year Average	0.00	0.00	0.17	0.40	11.39	32.56	62.42	48.67	20.94	2.08	0.00	0.00
20 Year Trend	0.00	0.00	0.29	-0.20	17.24	26.65	73.29	51.91	27.90	2.07	0.00	0.00

Source: Stats Canada (Environment Canada's weather station at Mount Forest.)

In accordance with the Filing Requirements[6], WNP has provided a forecast assuming twenty-year normal weather conditions. The effect of using both a 10-year average of HDD and CDD data (2010-2019) versus a trend based on 20-year HDD and CDD data (2000-2019) to weather normalize the adjusted Wholesale kWh purchases is illustrated in the table below:

Table 24 – Weather Normalization Forecast Comparison: 10 yr Average vs 20 yr Trend

	Weather Normalized kWh (10-Yr Average)	Weather Normalized kWh (20-Yr Trend)	kWh Variance between Predicted Forecasts	
	A	B	C = A - B	D = C/A
Jan-21	9,919,724	9,915,035	4,690	0.05%
Feb-21	9,075,933	9,062,149	13,784	0.15%
Mar-21	9,621,682	9,643,608	(21,926)	-0.23%
Apr-21	8,711,714	8,702,133	9,581	0.11%
May-21	8,604,969	8,608,655	(3,686)	-0.04%
Jun-21	8,229,965	8,192,701	37,264	0.45%
Jul-21	8,452,620	8,468,640	(16,020)	-0.19%
Aug-21	8,791,826	8,813,838	(22,013)	-0.25%
Sep-21	8,361,324	8,350,135	11,188	0.13%
Oct-21	8,851,395	8,846,410	4,985	0.06%
Nov-21	8,949,595	8,979,531	(29,936)	-0.33%
Dec-21	8,978,093	8,968,457	9,636	0.11%
Total	**106,548,840**	**106,551,294**	**(2,454)**	**-0.002%**

Based upon the above result, there is minimal kWh difference in the weather-normalized Load Forecast when using 20-year trended HDD and CDD data when compared to the 10-year average of HDD and CDD data. Consequently, WNP's Load Forecast for Predicted kWh Purchases maintains using the most recent 10-year average (2010 to 2019) of HDD and CDD data.

[6] MFR – In addition to the proposed Test Year Load Forecast, the load forecasts based on a 10-year average and 20-year trends in HDD and CDD

Adjustment to the Wholesale kWh Forecast for COVID-19 Pandemic

WNP has made no adjustments to its' adjusted Wholesale kWh purchases to account for the effect of changing electricity usage as a result of the COVID-19 pandemic. With the Emergency Order declared by the Province of Ontario on March 17th 2020, there have been notable changes resulting in altered behaviour patterns of electricity consumption and demand by residential and business customers. For example, business closures and an increase in the number of people working from home.

WNP is not cognizant of the medium or long-term effects of these behavioral changes and how it may alter the utility's load forecast. Therefore, WNP has not made any adjustments to its' adjusted Wholesale kWh purchases due to COVID-19. Since WNP's load forecast for the Bridge Year (2020) and Test Year depend on "COVID Free" data, WNP is tracking deviations from the load forecast caused by COVID-19 in the regulatory COVID account as announced by the OEB.

Adjustment to Wholesale Forecast due to LED Streetlight Conversion

In WNP's service area, the utility maintains and is the hydro provider for urban streetlights on behalf of the Townships of Southgate (for the village of Holstein) and Wellington North (for Arthur and Mount Forest).

In 2017, the Township of Southgate awarded a contract to a third-party to convert the streetlights in Holstein to light-emitting diodes (LEDs). All 27 streetlights in Holstein, powered by and billed by WNP were converted to LED in 2017. Because the conversion project was completed in 2017, Wholesale kWh purchased in years 2018 and 2019 would include actual kW demand and kWh consumption from the LED streetlights in Holstein.

Included in WNP's 2015-2020 Conservation First budget, approved by the IESO, was a CDM program to replace all high-pressure sodium (HPS) lights used in the streetlights with light-emitting diodes (LEDs) in Arthur and Mount Forest owned by the Township of Wellington North. Greensaver, under contract to Wellington North Power to deliver saveONenergy™ programs, worked with the Township of Wellington North to develop the LED retrofit project. The project

was approved in Quarter 1 of 2019 and all streetlights were converted to LED by the end of November 2019. The table below illustrates the kWh (without losses) for 2019 for all streetlights maintained and billed by WNP:

Table 25 – 2019 Streetlight Data

Light Type	Arthur Streetlights *HPS*		Mount Forest Streetlights *HPS*		Holstein Streetlights *LED*		Total Streetlights		
	kWh (without Loss)	kW	kWh (without Loss)	kW	kWh (without Loss)	kW	kWh (without Loss)	kW	*Data*
Jan-19	30,052.64	63.60	43,507.26	92.00	1,361.52	2.90	74,921.42	158.50	*Actual*
Feb-19	25,809.56	63.60	37,364.60	92.00	1,169.28	2.90	64,343.44	158.50	*Actual*
Mar-19	25,618.71	63.60	37,088.09	92.00	1,160.64	2.90	63,867.44	158.50	*Actual*
Apr-19	21,454.80	63.60	31,060.20	92.00	972.00	2.90	53,487.00	158.50	*Actual*
May-19	19,706.70	63.60	28,529.61	92.00	892.80	2.90	49,129.11	158.50	*Actual*
Jun-19	16,210.50	63.60	23,468.10	92.00	734.40	2.90	40,413.00	158.50	*Actual*
Jul-19	17,243.44	63.60	24,963.37	92.00	781.20	2.90	42,988.01	158.50	*Actual*
Aug-19	19,214.11	63.60	27,816.30	92.00	870.48	2.90	47,900.89	158.50	*Actual*
Sep-19	20,978.10	63.60	30,370.20	92.00	950.40	2.90	52,298.70	158.50	*Actual*
Oct-19	24,633.22	63.60	35,661.78	92.00	1,116.00	2.90	61,411.00	158.50	*Actual*
Nov-19	26,700.24	63.60	38,652.60	92.00	1,209.60	2.90	66,562.44	158.50	*Actual*
Dec-19	29,560.98	63.60	42,794.26	92.00	1,339.20	2.90	73,694.44	158.50	*Actual*
Total	**277,183.00**	**763.20**	**401,276.37**	**1,104.00**	**12,557.52**	**34.80**	**691,016.89**	**1,902.00**	

As a result of the LED streetlight conversion for the streetlights in Arthur and Mount Forest, the monthly kW demand was reduced. For Arthur, the monthly kW reduced from 63.60 kW to 15.60 kW; for Mount Forest it changed from 92.00 kW to 34.23 kW.

WNP uses an unmetered profile to determined kWh (without loses) calculated by:

$$kWh = kW\ x\ number\ of\ days\ in\ month\ \ x\ Hours\ Streetlight\ On$$

The tables below show the monthly kWh, applying the above formula, using the revised kW demand due to the LED conversion:

Table 26 – LED Streetlight Data – Arthur & Mount Forest

	Arthur Streetlights				Mount Forest Streetlights			
	kW	Days	Hours of LED On	kWh without Loss	kW	Days	Hours of LED On	kWh without Loss
	A	B	C	D = A x B x C	A	B	C	D = A x B x C
January	15.60	31	15.25	7,375.59	34.23	31	15.25	16,183.75
February	15.60	28	14.50	6,334.19	34.23	28	14.50	13,898.68
March	15.60	31	13.00	6,287.39	34.23	31	13.00	13,795.98
April	15.60	30	11.25	5,265.49	34.23	30	11.25	11,553.71
May	15.60	31	10.00	4,836.45	34.23	31	10.00	10,612.29
June	15.60	30	8.50	3,978.37	34.23	30	8.50	8,729.47
July	15.60	31	8.75	4,231.90	34.23	31	8.75	9,285.76
August	15.60	31	9.75	4,715.54	34.23	31	9.75	10,346.98
September	15.60	30	11.00	5,148.48	34.23	30	11.00	11,296.96
October	15.60	31	12.50	6,045.57	34.23	31	12.50	13,265.37
November	15.60	30	14.00	6,552.61	34.23	30	14.00	14,377.94
December	15.60	31	15.00	7,254.68	34.23	31	15.00	15,918.44
Total	187.20			68,026.27	410.76			149,265.33

Source: For LED hours "on" time, refer to https://www.timeanddate.com/sun/canada/toronto

The table below summarizes the streetlight kWh and kW data for 2019 for the areas of Arthur, Mount Forest and Holstein as billed by WNP.

Table 27 – Actual kWh and kW Streetlight Data for 2019

Light Type	Arthur Streetlights *HPS*		Mount Forest Streetlights *HPS*		Holstein Streetlights *LED*		Total Streetlights		
	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	**kWh** *(without Loss)*	**kW**	*Data*
Jan-19	30,052.64	63.60	43,507.26	92.00	1,361.52	2.90	**74,921.42**	**158.50**	*Actual*
Feb-19	25,809.56	63.60	37,364.60	92.00	1,169.28	2.90	**64,343.44**	**158.50**	*Actual*
Mar-19	25,618.71	63.60	37,088.09	92.00	1,160.64	2.90	**63,867.44**	**158.50**	*Actual*
Apr-19	21,454.80	63.60	31,060.20	92.00	972.00	2.90	**53,487.00**	**158.50**	*Actual*
May-19	19,706.70	63.60	28,529.61	92.00	892.80	2.90	**49,129.11**	**158.50**	*Actual*
Jun-19	16,210.50	63.60	23,468.10	92.00	734.40	2.90	**40,413.00**	**158.50**	*Actual*
Jul-19	17,243.44	63.60	24,963.37	92.00	781.20	2.90	**42,988.01**	**158.50**	*Actual*
Aug-19	19,214.11	63.60	27,816.30	92.00	870.48	2.90	**47,900.89**	**158.50**	*Actual*
Sep-19	20,978.10	63.60	30,370.20	92.00	950.40	2.90	**52,298.70**	**158.50**	*Actual*
Oct-19	24,633.22	63.60	35,661.78	92.00	1,116.00	2.90	**61,411.00**	**158.50**	*Actual*
Nov-19	26,700.24	63.60	38,652.60	92.00	1,209.60	2.90	**66,562.44**	**158.50**	*Actual*
Dec-19	29,560.98	63.60	42,794.26	92.00	1,339.20	2.90	**73,694.44**	**158.50**	*Actual*
Total	**277,183.00**	**763.20**	**401,276.37**	**1,104.00**	**12,557.52**	**34.80**	**691,016.89**	**1,902.00**	

The table below summarizes the streetlight data for 2020 for the areas of Arthur, Mount Forest and Holstein, all LED lights, and provides streetlight kWh total.

Table 28 – LED Streetlight Data for 2020

Light Type	Arthur Streetlights *LED*		Mount Forest Streetlights *LED*		Holstein Streetlights *LED*		Total Streetlights		
	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	**kWh** *(without Loss)*	**kW**	*Data*
Jan-20	7,375.59	15.60	16,183.75	34.23	1,359.76	2.88	**24,919.10**	**52.71**	*Actual*
Feb-20	6,334.19	15.60	13,898.68	34.23	1,167.77	2.88	**21,400.64**	**52.71**	*Actual*
Mar-20	6,287.39	15.60	13,795.98	34.23	1,159.14	2.88	**21,242.50**	**52.71**	*Actual*
Apr-20	5,265.49	15.60	11,553.71	34.23	970.74	2.88	**17,789.95**	**52.71**	*Forecast*
May-20	4,836.45	15.60	10,612.29	34.23	891.64	2.88	**16,340.38**	**52.71**	*Forecast*
Jun-20	3,978.37	15.60	8,729.47	34.23	733.45	2.88	**13,441.29**	**52.71**	*Forecast*
Jul-20	4,231.90	15.60	9,285.76	34.23	780.19	2.88	**14,297.85**	**52.71**	*Forecast*
Aug-20	4,715.54	15.60	10,346.98	34.23	869.35	2.88	**15,931.87**	**52.71**	*Forecast*
Sep-20	5,148.48	15.60	11,296.96	34.23	949.17	2.88	**17,394.61**	**52.71**	*Forecast*
Oct-20	6,045.57	15.60	13,265.37	34.23	1,114.55	2.88	**20,425.49**	**52.71**	*Forecast*
Nov-20	6,552.61	15.60	14,377.94	34.23	1,208.03	2.88	**22,138.58**	**52.71**	*Forecast*
Dec-20	7,254.68	15.60	15,918.44	34.23	1,337.47	2.88	**24,510.58**	**52.71**	*Forecast*
Total	**68,026.27**	**187.20**	**149,265.33**	**410.76**	**12,541.25**	**34.51**	**229,832.85**	**632.47**	

WNP started billing the Arthur and Mount Forest streetlight accounts using LED streetlight profile data in February 2020 for January 2020 kWh consumption and kW demand.

For the forecasted adjusted Wholesale kWh purchases for the Bridge Year (2020) and Test Year (2021) WNP made the following adjustment:

Table 29 – Manual Adjustment to Predicted Wholesale Purchases for LED Streetlights

	Predicted kWh
2020 Weather Normal Predicted kWh Purchases	105,762,198
Remove: Streetlight usage based on 2019 kWh actuals	(691,017)
Add: Streetlight usage based on LED data for 2020	229,833
= 2020 Weather Normal Predicted kWh Purchases	**105,301,014**
2021 Weather Normal Predicted kWh Purchases	106,548,840
Remove: Streetlight usage based on 2019 kWh actuals	(691,017)
Add: Streetlight usage based on LED data for 2020	229,833
= 2021 Weather Normal Predicted kWh Purchases	**106,087,656**

3.1.9 DETERMINATION OF CUSTOMER FORECAST

WNP has used a simple geometric mean function to determine the forecasted number of customers / connections for 2020 and 2021. The geometric mean is more appropriate to use when dealing with percentages and rates of change. Although the formula is somewhat simplistic, it is reasonably representative of WNP's natural customer growth. The geometric mean results were analyzed by the utility and then further adjusted for known particulars. Historical yearly average number of accounts / connections and projected number of accounts / connections for 2020 and 2021 are presented in the table below.

Table 30 - Customer Account / Connection Forecast

	Residential	General Service <50kW	General Service 50-999 kW	General Service 1,000-4,999 kW	Unmetered Scattered Load	Sentinel	Streetlights
	Accounts	*Accounts*	*Accounts*	*Accounts*	*Connections*	*Connections*	*Connections*
2010	3,073	479	40	5	1	28	900
2011	3,103	478	38	5	2	28	899
2012	3,126	478	38	5	1	28	898
2013	3,161	474	38	6	2	28	900
2014	3,190	473	38	6	1	28	905
2015	3,212	474	36	5	1	27	905
2016	3,219	469	36	5	2	24	907
2017	3,246	473	35	5	2	23	908
2018	3,279	470	34	5	2	23	908
2019	3,302	470	35	5	2	23	908
Growth Rate							
2011	1.010	0.997	0.966	1.000	1.357	1.000	0.999
2012	1.007	1.000	0.983	1.000	0.842	1.000	0.999
2013	1.011	0.993	1.020	1.167	1.188	1.000	1.002
2014	1.009	0.998	0.998	1.000	0.737	0.997	1.006
2015	1.007	1.003	0.933	0.857	0.857	0.949	1.000
2016	1.002	0.989	0.995	1.000	1.583	0.906	1.002
2017	1.008	1.007	0.977	1.000	1.263	0.962	1.001
2018	1.010	0.995	0.978	1.000	1.167	0.996	1.000
2019	1.007	1.000	1.029	1.000	1.000	1.000	1.000
Geomean	1.008	0.998	0.986	1.000	1.080	0.978	1.001
Accounts / Connections Forecast based on Geomean:							
2020 Forecast - *Geomean*	3,328	469	35	5	3	23	909
2021 Forecast - *Geomean*	3,355	468	34	5	3	22	910
Manual Adjustment	No	No	No	No	No	Yes	Yes
2020 Forecast	3,328	469	35	5	3	23	924
2021 Forecast	3,355	468	34	5	3	23	924

WNP confirms the historical numbers are the yearly average of accounts / connections represented in the table above. These yearly averages were used to derive the annual growth rate and resulting geomean rate.

Manual Adjustment

WNP made the following adjustments to the calculated geomean mean:

- Sentinel Lighting – changed the 2021 forecasted connections to be 23 connections based upon the actual number of connections for the 3-year period 2017 to 2019.
- Streetlight connections – changed the 2020 and 2021 forecasted connections to be 924. As noted previously, there was an LED streetlight conversion project in 2019. During this streetlight conversion project, WNP re-counted all the streetlight connections serviced by the utility and confirmed the actual number of streetlights was 924 connections.

No other rate classes required a manual adjustment of the number of accounts or connections forecasted for the Bridge Year (2020) and Test Year (2021).

3.1.10 DETERMINATION OF WEATHER NORMALIZED FORECAST

The difference between non-normalized and normalized forecast is assumed to be the amount related to moving the forecast to a weather normal basis. This difference will be assigned to those rate classes that are weather sensitive. WNP used the weather normalization work completed by Hydro One for WNP for its' 2007 Cost Allocation Study as a starting point and has shown its weather sensitivity, by rate class, in the table below.

Table 31 – Weather Sensitive Customers

	Residential	General Service <50kW	General Service 50-999 kW	General Service 1,000-4,999 kW	Unmetered Scattered Load	Sentinel	Streetlights
% Weather-Sensitive	82.50%	82.50%	65.00%	0.00%	0.00%	0.00%	0.00%

WNP has applied a weather sensitivity factor of 82.50%, which is the mid-point between the 100% HONI reported for Residential and GS<50 kW rate classes. The LDC has applied a sensitivity factor of 65% for GS 50-999 kW rate class. None of the other rate classes were assumed to be weather sensitive.

The table below outlines how the weather sensitive rate classes have been adjusted to align the non-normalized forecast with the normalized forecast.

Table 32 – Alignment of Non-Normalized Forecast to Weather-Normalized Forecast

	Residential	General Service <50kW	General Service 50-999 kW	General Service 1,000-4,999 kW	Unmetered Scattered Load	Sentinel	Streetlights
	Non-Normalized Weather Billed Energy Forecast (kWh)						
2020 Bridge Year	25,456,387	11,114,723	18,481,068	42,766,148	6,288	19,673	229,833
2021 Test Year	25,660,501	11,091,323	18,225,830	42,766,148	6,288	19,673	229,833
	Adjustment for Weather (kWh)						
2020 Bridge Year	430,489	187,959	246,236	0	0	0	0
2021 Test Year	842,599	364,200	471,523	0	0	0	0
	Weather-Normalized Billed Energy Forecast (kWh)						
2020 Bridge Year	25,886,876	11,302,682	18,727,304	42,766,148	6,288	19,673	229,833
2021 Test Year	26,503,100	11,455,522	18,697,353	42,766,148	6,288	19,673	229,833

3.1.11 LOAD FORECAST BY CLASS[7]

This section presents the load forecast by customer rate class. This is determined, for each rate class, by multiplying the kWh per customer by the number of accounts or connections to give a forecasted billed kWh (without loss). WNP has elected to use the actuals of 2019 kWh per customer/connection for each rate class.

In the tables below, WNP has included the historical 10-year data to illustrate actual billed kWh (without loss), count of customers (yearly average) and kWh per customer.

Table 33 – Residential Forecast (Weather Sensitive)

Residential						
	kWh Actual Billed (without loss)	Number of Accounts	kWh Per Customer	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	25,348,494	3,073	8,249			
2011	25,466,302	3,103	8,206			
2012	24,774,725	3,126	7,925			
2013	25,587,071	3,161	8,096			
2014	25,720,644	3,190	8,062			
2015	24,960,131	3,212	7,771			
2016	24,523,576	3,219	7,618			
2017	23,863,110	3,246	7,352			
2018	25,345,905	3,279	7,731			
2019	25,253,896	3,302	7,648			
	Forecast 2020	3,328	7,648	25,456,387	430,489	25,886,876
	Forecast 2021	3,355	7,648	25,660,501	842,599	26,503,100

In the above table, by dividing the kWh Actual Billed (without Loss) by the number of accounts provides the kWh per customer. WNP has used the 2019 kWh per customer value of 7,648 kWh and multiplied this by the forecasted number of accounts in the Bridge Year (2020) to give a forecasted billed kWh quantity of 25,456,387 kWh. Because Residential is a weather-sensitive rate class, there is an adjustment to include weather-sensitive kWh quantity (as described in section 3.1.10). The result of 25,866,876 kWh is the forecasted billed kWh (without loss) with weather-

[7] MFR - year-over-year variances in kWh and kW by rate

adjusted for the Bridge Year (2020). The same process has been applied to derive the quantity of forecasted billed kWh (without loss) with weather-adjusted for the Test Year (2021).

The method above has been applied to all WNP rates classes as illustrated in the following tables, with the exception of the Streetlight rate class.

Table 34 – General Service<50 kW Forecast (Weather Sensitive)

General Service <50kW						
	kWh Actual Billed (without loss)	Number of Accounts	kWh Per Customer	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	11,387,103	479	23,773			
2011	11,698,450	478	24,487			
2012	11,692,350	478	24,474			
2013	12,087,562	474	25,488			
2014	11,853,213	473	25,055			
2015	12,033,955	474	25,366			
2016	11,967,606	469	25,499			
2017	11,410,391	473	24,136			
2018	11,582,140	470	24,634			
2019	11,138,172	470	23,698			
	Forecast 2020	469	23,698	11,114,723	187,959	11,302,682
	Forecast 2021	468	23,698	11,091,323	364,200	11,455,522

Table 35 – General Service 50-999 kW Forecast (Weather Sensitive)

General Service 50-999kW						
	kWh Actual Billed (without loss)	Number of Accounts	kWh Per Customer	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	20,855,253	40	525,763			
2011	21,357,589	38	557,154			
2012	21,917,337	38	581,876			
2013	16,562,846	38	431,137			
2014	15,962,529	38	416,414			
2015	20,081,441	36	561,719			
2016	19,893,743	36	559,075			
2017	19,029,613	35	547,615			
2018	18,305,429	34	538,395			
2019	18,739,880	35	535,425			
	Forecast 2020	35	535,425	18,481,068	246,236	18,727,304
	Forecast 2021	34	535,425	18,225,830	471,523	18,697,353

Table 36 – General Service 1,000-4,999 kW Forecast

General Service 1,000-4,999kW						
	kWh Actual Billed (without loss)	Number of Accounts	kWh Per Customer	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	38,077,455	5	7,615,491			
2011	39,521,515	5	7,904,303			
2012	42,337,529	5	8,467,506			
2013	49,310,777	6	8,453,276			
2014	50,998,403	6	8,742,583			
2015	47,530,355	5	9,506,071			
2016	45,496,516	5	9,099,303			
2017	45,750,527	5	9,150,105			
2018	43,913,956	5	8,782,791			
2019	42,766,148	5	8,553,230			
	Forecast 2020	5	8,553,230	42,766,148	0	42,766,148
	Forecast 2021	5	8,553,230	42,766,148	0	42,766,148

Table 37 – Unmetered Scattered Load Forecast

Unmetered Scattered Load						
	kWh Actual Billed (without loss)	Number of Connections	kWh Per Connection	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	9,732	1	8,342			
2011	7,563	2	4,777			
2012	5,733	1	4,300			
2013	5,733	2	3,621			
2014	5,733	1	4,914			
2015	5,184	1	5,184			
2016	6,816	2	4,305			
2017	6,801	2	3,401			
2018	6,801	2	2,915			
2019	6,288	2	2,695			
	Forecast 2020	2	2,695	6,288	0	6,288
	Forecast 2021	2	2,695	6,288	0	6,288

Table 38 – Sentinel Lighting Forecast

Sentinel Lighting						
	kWh Actual Billed (without loss)	Number of Connections	kWh Per Connection	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B	D = C x B	E	F = D + E
2010	31,586	28	1,128			
2011	27,612	28	986			
2012	26,093	28	932			
2013	26,093	28	932			
2014	25,409	28	910			
2015	24,839	27	937			
2016	22,057	24	919			
2017	19,673	23	852			
2018	19,673	23	855			
2019	19,673	23	855			
	Forecast 2020	23	855	19,673	0	19,673
	Forecast 2021	23	855	19,673	0	19,673

For the rate class of Streetlights, WNP has kWh quantity as derived from the LED street light conversion as discussed in section 3.1.8 under sub-section "Adjustment to Wholesale Forecast due to LED Streetlight Conversion" Below is the a copy of the table from section 3.1.8 summarizing the streetlight data for 2020.

Table 39 – LED Streetlight Data for 2020

Light Type	**Arthur Streetlights** *LED*		**Mount Forest Streetlights** *LED*		**Holstein Streetlights** *LED*		**Total Streetlights**		
	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	kWh *(without Loss)*	kW	**kWh** *(without Loss)*	**kW**	*Data*
Jan-20	7,375.59	15.60	16,183.75	34.23	1,359.76	2.88	**24,919.10**	**52.71**	*Actual*
Feb-20	6,334.19	15.60	13,898.68	34.23	1,167.77	2.88	**21,400.64**	**52.71**	*Actual*
Mar-20	6,287.39	15.60	13,795.98	34.23	1,159.14	2.88	**21,242.50**	**52.71**	*Actual*
Apr-20	5,265.49	15.60	11,553.71	34.23	970.74	2.88	**17,789.95**	**52.71**	*Forecast*
May-20	4,836.45	15.60	10,612.29	34.23	891.64	2.88	**16,340.38**	**52.71**	*Forecast*
Jun-20	3,978.37	15.60	8,729.47	34.23	733.45	2.88	**13,441.29**	**52.71**	*Forecast*
Jul-20	4,231.90	15.60	9,285.76	34.23	780.19	2.88	**14,297.85**	**52.71**	*Forecast*
Aug-20	4,715.54	15.60	10,346.98	34.23	869.35	2.88	**15,931.87**	**52.71**	*Forecast*
Sep-20	5,148.48	15.60	11,296.96	34.23	949.17	2.88	**17,394.61**	**52.71**	*Forecast*
Oct-20	6,045.57	15.60	13,265.37	34.23	1,114.55	2.88	**20,425.49**	**52.71**	*Forecast*
Nov-20	6,552.61	15.60	14,377.94	34.23	1,208.03	2.88	**22,138.58**	**52.71**	*Forecast*
Dec-20	7,254.68	15.60	15,918.44	34.23	1,337.47	2.88	**24,510.58**	**52.71**	*Forecast*
Total	**68,026.27**	**187.20**	**149,265.33**	**410.76**	**12,541.25**	**34.51**	**229,832.85**	**632.47**	

The table below illustrates the forecasted billed kWh (without loss) quantities for the Bridge Year (2020) and Test Year (2021):

Table 40 – Street Lighting Forecast

	Street Lights					
	kWh Actual Billed (without loss)	Number of Connections	kWh Per Connection	Forecasted Billed kWh	Adjustment for Weather	Forecasted Billed kWh with Weather Adjusted
	A	B	C = A / B			
2010	719,199	900	799			
2011	713,388	899	793			
2012	715,663	898	797			
2013	719,239	900	800			
2014	720,792	905	796			
2015	720,792	905	796			
2016	723,427	907	798			
2017	697,359	908	768			
2018	691,015	908	761			
2019	650,270	908	716			
				Forecast based on Streetlight Data		
	Forecast 2020	924		229,833	0	229,833
	Forecast 2021	924		229,833	0	229,833

kWh to kW[8]

WNP has four customer rate classes that are charged for distribution on per a kW basis. These are General Service >50-999 kW, General Service 1,000-4,999 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 rate classes is based on an average analysis of the historical ratio of kW to kWhs and applying this ratio to the forecasted kWh to produce the required kW. The table below summarizes the historical annual demand units by applicable rate class:

Table 41 – Historic Annual kW by Class

	General Service 50-999 kW	General Service 1,000-4,999 kW	Sentinel	Streetlights
2010	61,885	83,976	88	1,964
2011	65,743	86,114	80	1,964
2012	67,820	89,132	72	1,963
2013	52,256	105,092	72	1,980
2014	48,273	109,682	71	1,983
2015	55,778	99,567	70	1,984
2016	55,436	96,818	61	1,984
2017	53,405	98,592	55	1,920
2018	52,915	98,025	55	1,902
2019	51,685	96,230	55	1,810

[8] MFR - explanation to support how kWh are converted to kW for applicable demand-billed classes,

WNP has adopted the average analysis approach to provide a forecast of kW demand for the applicable rate classes as shown in the table below:

Table 42 – kW: kWh Ratios - Historic

	kW Demand			
	General Service 50-999 kW	General Service 1,000-4,999 kW	Sentinel	Streetlights
2010	61,885	83,976	88	1,964
2011	65,743	86,114	80	1,964
2012	67,820	89,132	72	1,963
2013	52,256	105,092	72	1,980
2014	48,273	109,682	71	1,983
2015	55,778	99,567	70	1,984
2016	55,436	96,818	61	1,984
2017	53,405	98,592	55	1,920
2018	52,915	98,025	55	1,902
2019	51,685	96,230	55	1,810
	kWh Consumption			
	General Service 50-999 kW	General Service 1,000-4,999 kW	Sentinel	Streetlights
2010	20,855,253	38,077,455	31,586	719,199
2011	21,357,589	39,521,515	27,612	713,388
2012	21,917,337	42,337,529	26,093	715,663
2013	16,562,846	49,310,777	26,093	719,239
2014	15,962,529	50,998,403	25,409	720,792
2015	20,081,441	47,530,355	24,839	720,792
2016	19,893,743	45,496,516	22,057	723,427
2017	19,029,613	45,750,527	19,673	697,359
2018	18,305,429	43,913,956	19,673	691,015
2019	18,739,880	42,766,148	19,673	650,270
	kW / kWh Ratio			
	General Service 50-999 kW	General Service 1,000-4,999 kW	Sentinel	Streetlights
2010	0.00297	0.00221	0.00278	0.00273
2011	0.00308	0.00218	0.00291	0.00275
2012	0.00309	0.00211	0.00278	0.00274
2013	0.00316	0.00213	0.00278	0.00275
2014	0.00302	0.00215	0.00278	0.00275
2015	0.00278	0.00209	0.00281	0.00275
2016	0.00279	0.00213	0.00278	0.00274
2017	0.00281	0.00215	0.00278	0.00275
2018	0.00289	0.00223	0.00278	0.00275
2019	0.00276	0.00225	0.00278	0.00278
	Averages of Ratios			
10-year average	0.00293	0.00216	0.00279	0.00275
5-year average	0.00280	0.00217	0.00278	0.00276

WNP divided the historical (10 years) actual kW demand by the kWh for each rate class to give a kW to kWh ratio as illustrated in the above table. WNP elected to adopt the 5-year average ratio

(years 2015 to 2019 data) to apply to the forecasted kWh for these particular rate classes[9]. The LDC chose the 5-year average because this reflects reduced kW demand due to CDM programs delivered and implemented during this period. The table below illustrates the Bridge Year (2020) and Test Year (2021) kW volumes for the four rate classes as derived from using the 5-year average:

Table 43 – Calculated kW

	General Service 50-999 kW	General Service 1,000-4,999 kW	Sentinel	Streetlights
Bridge Year (2020) - kWh	18,727,304	42,766,148	19,673	229,833
Test Year (2021) - kWh	18,697,353	42,766,148	19,673	229,833
5-year average kW : kWh Ratio	0.00280	0.00217	0.00278	
Bridge Year (2020) - kW	52,509	92,890	55	632
Test Year (2021) - kW	52,425	92,890	55	632

Because the Streetlights have undergone LED conversions during 2017 (Holstein) and 2019 (Arthur and Mount Forest), WNP has used the kW as derived from the LED streetlight conversion project rather than using the 5-year historical kW: kWh ratio[10].

[9] MFR - explanation to support how kWh are converted to kW for applicable demand-billed classes
[10] MFR - explanation to support how kWh are converted to kW for applicable demand-billed classes

3.1.12 FINAL WEATHER NORMALIZED LOAD FORECAST

The table illustrates the historic and projected weather normalized Load Forecast by customer class.

Table 44 - Final Load Forecast (not CDM adjusted)

Load Forecast		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	102,608,246	105,492,262	108,285,745	110,963,047	112,203,045	112,178,419	109,112,022	107,122,742	106,666,688	104,914,586		
	Predicted kWh Purchases	102,173,701	105,683,889	108,029,546	111,196,047	112,379,327	112,108,114	108,980,115	107,482,226	106,776,885	104,736,951	105,762,198	106,548,840
	% Difference	-0.4%	0.2%	-0.2%	0.2%	0.2%	-0.1%	-0.1%	0.3%	0.1%	-0.2%		
	Remove Streetlights usage (2019 Actuals pre-LED conversion)											(691,017)	(691,017)
	Add-in Street lights LED conversion											229,833	229,833
	CDM Purchase Adjustment											0	0
	Predicted kWh Purchases (after CDM & Streetlight LED conversion)											105,301,014	106,087,656
	Billed kWh	96,428,822	98,792,419	101,469,430	104,299,320	105,286,722	105,356,697	102,633,741	100,777,475	99,864,919	98,574,327	98,938,804	99,677,917
Rate Class													
Residential	Customers	3,073	3,103	3,126	3,161	3,190	3,212	3,219	3,246	3,279	3,302	3,328	3,355
	kWh	25,348,494	25,466,302	24,774,725	25,587,071	25,720,644	24,960,131	24,523,576	23,863,110	25,345,905	25,253,896	25,886,876	26,503,100
General Service < 50 kW	Customers	479	478	478	474	473	474	469	473	470	470	469	468
	kWh	11,387,103	11,698,450	11,692,350	12,087,562	11,853,213	12,033,955	11,967,606	11,410,391	11,582,140	11,138,172	11,302,682	11,455,522
General Service 50 to 999 kW	Customers	40	38	38	38	38	36	36	35	34	35	35	34
	kWh	20,855,253	21,357,589	21,917,337	16,562,846	15,962,529	20,081,441	19,893,743	19,029,613	18,305,429	18,739,880	18,727,304	18,697,353
	kW	61,885	65,743	67,820	52,256	48,273	55,778	55,436	53,405	52,915	51,685	52,509	52,425
General Service 1000 to 4,999 kW	Customers	5	5	5	6	6	5	5	5	5	5	5	5
	kWh	38,077,455	39,521,515	42,337,529	49,310,777	50,998,403	47,530,355	45,496,516	45,750,527	43,913,956	42,766,148	42,766,148	42,766,148
	kW	83,976	86,114	89,132	105,092	109,682	99,567	96,818	98,592	98,025	96,230	92,890	92,890
Unmetered Scattered Load	Connections	1	2	1	2	1	1	2	2	2	2	2	2
	kWh	9,732	7,563	5,733	5,733	5,733	5,184	6,816	6,801	6,801	6,288	6,288	6,288
Sentinel Lights	Connections	28	28	28	28	28	27	24	23	23	23	23	23
	kWh	31,586	27,612	26,093	26,093	25,409	24,839	22,057	19,673	19,673	19,673	19,673	19,673
	kW	88	80	72	72	71	70	61	55	55	55	55	55
Street Lights	Connections	900	899	898	900	905	905	907	908	908	908	924	924
	kWh	719,199	713,388	715,663	719,239	720,792	720,792	723,427	697,359	691,015	650,270	229,833	229,833
	kW	1,964	1,964	1,963	1,980	1,983	1,984	1,984	1,920	1,902	1,810	632	632
Total													
	Customer / Connections	4,526	4,553	4,574	4,608	4,642	4,660	4,662	4,692	4,721	4,745	4,786	4,811
	kWh	96,428,822	98,792,419	101,469,430	104,299,320	105,286,722	105,356,697	102,633,741	100,777,475	99,864,919	98,574,327	98,938,804	99,677,917
	kW	147,913	153,902	158,988	159,400	160,009	157,399	154,299	153,972	152,896	149,780	146,086	146,002

WNP is not cognizant of the medium or long-term effects of the COVID-19 pandemic and how it may alter the utility's load forecast. Therefore, WNP has <u>not</u> made any adjustments to its' adjusted Wholesale kWh purchases or Load Forecast due to COVID-19.

3.2 IMPACT AND PERSISTENCE FROM HISTORICAL CDM PROGRAMS[11]

3.2.1 LOAD FORECAST CDM ADJUSTMENT WORK FORM

As discussed in Section 3.1.8 Regression Results, WNP made a manual adjustment to the Load Forecast to account for the LED streetlight conversion project completed at the end of 2019.

Included in WNP's 2015-2020 Conservation First Framework budget, approved by the IESO, was a CDM program to replace all high-pressure sodium (HPS) lights used in the streetlights with light-emitting diodes (LEDs) in Arthur and Mount Forest owned by the Township of Wellington North. Greensaver, under contract to Wellington North Power Inc. to deliver saveONenergy™ programs, worked with the Township of Wellington North to develop the LED retrofit project. The project was approved in the first quarter of 2019. The customer, the Township of Wellington North, received their CDM incentive payment from the IESO for the program in Quarter 2 of 2020.

In the absence of information from the IESO, below is the third-party measurement and verification (M & V) report concerning the LED streetlight conversion:

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

Table 45 – LED Streetlight M&V Report

Wellington North - Arthur and Mount Forest Street Lighting Project

M&V Analysis

Base Case

784 High Pressure Sodium Streetlights
of which 39 >250W, 747 < 250W
Lights operate on average 12h per day, 365 days per year

	Electricity (kWh)
Base Case	574,047
EE Case	164,666
Savings	409,381

EE Case

786 LED street lights (RFM-72W32LED4K-G2)
of which 39 are set at 100%, the rest are set at 50% and 75% of lumens
Lights operate on average 12h per day, 365 days per year

	Qty					
	289	490	3	2	Theoretical kW	Annual kWh
Base Case Wattage	130	188	457	1100	131	574,047
Hours						4380
EE Case Wattage	36.5	54.75	73	73	38	164,666

WNP has filed a copy of the third-party M & V report together with the OEB's LRAMVA workform with Exhibit 4. Worksheet "8. Streetlighting" of the LRAMVA workform includes the data and assumptions the LDC has made to support the Streetlight LED conversion project due to the absence of program savings information from the IESO.

WNP started billing the Arthur and Mount Forest streetlight accounts using LED streetlight profile data in February 2020 for January 2020 kWh consumption and kW demand.

The LED streetlight conversion project was completed at the end of 2019. As noted in Section 3.1.8 Regression Results, WNP made a manual adjustment to the Load Forecast to account for the LED streetlight conversion project for kWh and KW forecasted quantities for in Bridge Year (2020) and Test Year (2021).

WNP is not planning for or aware of any new CDM programs that will be initiated in the Test Year (2021). Consequently, no manual CDM adjustment is required to the Load Forecast for the Test Year (2021) as illustrated in the table below.[12] [13] [14]

Table 46 - Weight Factor for Inclusion in CDM Adjustment to 2021 Load Forecast

Weight Factor for Inclusion in CDM Adjustment to 2021 Load Forecast								
	2015	2016	2017	2018*	2019**	2020**	2021***	
Weight Factor for each year's CDM program impact on 2021 load forecast	0	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. Full year impact of 2018 CDM is assumed to be reflected in the base forecast.*	*Default is 0. Full year impact of 2019 CDM is assumed to be reflected in the base forecast. Adjust based on distributor's circumstance*	*Default is 0.5. Adjust based on distributor's circumstance*	*Default is 1. Adjust based on distributor's circumstance*	

Source: Chapter 2 Appendices, worksheet APP2-I-LF-CDM

[12] MFR - CDM Adjustment - If a distributor expects impacts from any CFF-related projects not deployed by April 2019 but for which a distributor is contractually obligated to complete, or for other programs delivered by the distributor after April 2019, a distributor may include these amounts as part of a CDM manual adjustment to the 2021 load forecast but must ensure that sufficient supporting evidence is provided for all estimated CDM savings

[13] MFR - If a distributor proposes a CDM adjustment to its 2021 load forecast, it should document the CDM savings to be used as the basis for the 2021 LRAMVA threshold. In addition, the allocation of the CDM savings for the LRAMVA and the load forecast adjustment should be provided by customer class and for both kWh and, as applicable to a customer class, kW. The distributor should document its proposal adequately

[14] MFR - Appendix 2-I - is provided as one approach for calculating the aggregate amounts for the LRAMVA and the corresponding CDM adjustment to the load forecast

WNP has set the 2021 Lost Revenue Adjustment Mechanism - Variance Account (LRAMVA) to zero as illustrated below:

Table 47 – 2021 LRAMVA and 2021 CDM Adjustment to Load Forecast

	2015	2016	2017	2018	2019	2020	2021	Total for 2021
Amount used for CDM threshold for LRAMVA (2021)	-	-	-	-	-	-	-	-
Manual Adjustment for 2021 Load Forecast (billed basis)					-	-	-	-
Manual Adjustment for 2021 LDC-only CDM programs (billed basis)							-	
Total Manual Forecast to Load Forecast							-	-
Proposed Loss Factor (TLF)	6.08%	Format: X.XX%						
Manual Adjustment for 2021 Load Forecast (system purchased basis)	-	-	-	-	-	-	-	-

Source: Chapter 2 Appendices, worksheet APP2-I-LF-CDM

3.2.2 ALLOCATION OF CDM RESULTS

As there is no adjustment for CDM in WNP's load forecast for the Test Year (2021), no allocation of projected CDM savings for customer rates classes is required.

3.2.3 FINAL CDM ADJUSTED LOAD FORECAST

As there is no adjustment for CDM in WNP's load forecast for the Test Year (2021), the final weather normalized load forecast and summary of billing determinants by rates class as presented in section 3.1.12 will be used to develop WNP's proposed rates.

3.3 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS[15]

3.3.1 VARIANCE ANALYSIS OF LOAD FORECAST[16]

Table 48 below shows the yearly change in consumption for the Residential class.

Table 48 - Residential Variance

Year	Customers *	% Change	kWh **	% Change	Usage per Customer	% Change
2010	3,073		25,348,494		8,249	
2011	3,103	0.99%	25,466,302	0.46%	8,206	-0.52%
2012	3,126	0.74%	24,774,725	-2.72%	7,925	-3.43%
2013	3,161	1.09%	25,587,071	3.28%	8,096	2.16%
2014	3,190	0.95%	25,720,644	0.52%	8,062	-0.42%
2015	3,212	0.67%	24,960,131	-2.96%	7,771	-3.61%
2016	3,219	0.23%	24,523,576	-1.75%	7,618	-1.98%
2017	3,246	0.82%	23,863,110	-2.69%	7,352	-3.48%
2018	3,279	1.01%	25,345,905	6.21%	7,731	5.15%
2019	3,302	0.71%	25,253,896	-0.36%	7,648	-1.07%
10-yr Average	*3,191*	*0.80%*	*25,084,385*	*0.00%*	*7,866*	*-0.80%*
2016 OEB-Approved	*3,251*		*27,408,200*		*8,431*	

** Number of customers is expressed in year average format*
*** kWh is metered without loss*

The number of residential customers has steadily increased since 2010 at an average rate of 0.8% per year. The kWh consumption has seen both increases and decreases over the same period, with 2019 kWhs at approximately the same level as seen 10 years prior in 2010. Over the 10-year period, while the number of Residential customers has increased, usage per customer has decreased which is likely to be attributable to energy conservation measures and newer homes and appliances being more energy efficient.

[15] MFR - year-over-year variances in kWh and kW by rate class and for system consumption overall (kWh) with explanations for material changes in the definition of or major changes over time (should be done for both historical actuals against each other and historical weather-normalized actuals over time)

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

Based on timing of the decrease, WNP can assume that the effects of increased conservation measures has contributed to the reduction in overall consumption since 2015. In 2018, the increase in usage can be attributed to above-warmer summer temperatures, especially in September when WNP observed an increase in the running of residential air-conditioners.

The OEB-approved forecast for customer numbers and consumption was above the actual for 2016. This is attributed to slower customer growth in both 2015 and 2016 as well as decline in energy usage per customer, especially in 2015.

The Load Forecast model uses a 10-year average to determine the consumption and customer number forecast for the Bridge Year (2020) and Test Year (2021).As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted number of customers for the Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in customers and consumption for the General Service <50 kW class:

Table 49 – General Service <50 kW Variance

Year	Customers *	*% Change*	kWh **	*% Change*	Usage per Customer	*% Change*
2010	479		11,387,103		23,773	
2011	478	*-0.26%*	11,698,450	*2.73%*	24,487	*3.00%*
2012	478	*0.00%*	11,692,350	*-0.05%*	24,474	*-0.05%*
2013	474	*-0.73%*	12,087,562	*3.38%*	25,488	*4.14%*
2014	473	*-0.25%*	11,853,213	*-1.94%*	25,055	*-1.70%*
2015	474	*0.28%*	12,033,955	*1.52%*	25,366	*1.24%*
2016	469	*-1.07%*	11,967,606	*-0.55%*	25,499	*0.53%*
2017	473	*0.73%*	11,410,391	*-4.66%*	24,136	*-5.35%*
2018	470	*-0.55%*	11,582,140	*1.51%*	24,634	*2.06%*
2019	470	*-0.04%*	11,138,172	*-3.83%*	23,698	*-3.80%*
10-yr Average	*474*	*-0.21%*	*11,685,094*	*-0.21%*	*24,661*	*0.01%*
2016 OEB-Approved	*476*		*12,494,682*		*26,276*	

** Number of customers is expressed in year average format*
*** kWh is metered without loss*

The number of customers and consumption in the GS<50 kW class have remained relatively steady over the past 10 years. Usage per customer in 2019 is approximately the same as that 10 years ago in 2010. WNP does not anticipate any new GS<50 customers in 2020 or 2021.

The OEB-approved forecast for customer numbers and consumption was above the actual for 2016. This is attributed to five GS<50 kW customers closing their businesses in 2016.

The projected consumption for 2021 is 11,455,522 kWh which is on par with the 10-year average for this customer class.

As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted number of customers for Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in customers, kWh consumption and kW demand for the General Service 50-999 kW class:

Table 50 – General Service 50-999 kW Variance

Year	Customers *	% Change	kWh **	% Change	kW	% Change
2010	40		20,855,253		61,885	
2011	38	-3.36%	21,357,589	2.41%	65,743	6.23%
2012	38	-1.74%	21,917,337	2.62%	67,820	3.16%
2013	38	1.99%	16,562,846	-24.43%	52,256	-22.95%
2014	38	-0.22%	15,962,529	-3.62%	48,273	-7.62%
2015	36	-6.74%	20,081,441	25.80%	55,778	15.55%
2016	36	-0.47%	19,893,743	-0.93%	55,436	-0.61%
2017	35	-2.34%	19,029,613	-4.34%	53,405	-3.66%
2018	34	-2.16%	18,305,429	-3.81%	52,915	-0.92%
2019	35	2.94%	18,739,880	2.37%	51,685	-2.32%
10-yr Average	*37*	*-1.34%*	*19,270,566*	*-0.44%*	*56,520*	*-1.46%*
2016 OEB-Approved	*38*		*14,065,279*		*43,362*	

** Number of customers is expressed in year average format*
*** kWh is metered without loss*

Similar to the GS<50 kW, the number of customers in the GS 50-999 kW class have also remained relatively steady over the past 10 years. The region's manufacturing and retail footprint has

struggled over the past decade, reflecting the challenges faced in most parts of rural Ontario with its' relatively narrow economic base and concentration in slow growing or declining industries.

The OEB-approved forecast for customer numbers was above the 2016 actual; however the forecasted consumption and demand was below the 2016 actual. This may be attributable to the 2016 forecast taking into account the sharp decline in usage in years 2013 and 2014.

The projected consumption for 2021 is 18,697,353 kWh and 52,425 kW which is on par with the 2018 and 2019 actuals. WNP does not anticipate any new customers in 2020 or 2021.

As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted number of customers for Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in customers, kWh consumption and kW demand for the General Service 1,000-4,999 kW class:

Table 51 – General Service 1,000-4,999 kW Variance

Year	Customers *	% Change	kWh **	% Change	kW	% Change
2010	5		38,077,455		83,976	
2011	5	0.00%	39,521,515	3.79%	86,114	2.55%
2012	5	0.00%	42,337,529	7.13%	89,132	3.50%
2013	6	16.67%	49,310,777	16.47%	105,092	17.91%
2014	6	0.00%	50,998,403	3.42%	109,682	4.37%
2015	5	-14.29%	47,530,355	-6.80%	99,567	-9.22%
2016	5	0.00%	45,496,516	-4.28%	96,818	-2.76%
2017	5	0.00%	45,750,527	0.56%	98,592	1.83%
2018	5	0.00%	43,913,956	-4.01%	98,025	-0.58%
2019	5	0.00%	42,766,148	-2.61%	96,230	-1.83%
10-yr Average	*5*	*0.26%*	*44,570,318*	*1.52%*	*96,323*	*1.75%*
2016 OEB-Approved	*5*		*50,613,209*		*108,301*	

** Number of customers is expressed in year average format*
*** kWh is metered without loss*

Similar to the GS 50-999 kW, the number of customers in the GS 1,000-4,999 kW class have also remained relatively steady over the past 10 years. Energy usage and demand increased in 2012 onwards when customers increased plant production, indicating signs of recovery from the 2008/2009 Global Recession.

The OEB-approved forecast for customer numbers was as per 2016 actual; however the forecasted consumption and demand was above the 2016 actual. This is attributable to all the customers in this rate class participating intensively in CDM programs in 20015 and 2016 under the 2015-2020 Conservation First Framework program. As a result of these CDM programs consumption and demand has continued to decline from 2015 onwards. Also, all customers in this rate class participate in the IESO's Industrial Conservation Initiative (years 2019-2020 and 2020-2021) actively managing their peak demand. The usage for customers that have participated in the ICI program is already embedded in the load forecast data for years 2017, 2018 and 2019 when customers starting to opt-in to the program; no customers have opted-out of the ICI program.

WNP does not anticipate any new customers in 2020 or 2021. The projected consumption for 2021 is 42,766,148 kWh and 92,890 kW. As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted customer numbers for Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in connections and kWh consumption for the Unmetered Scattered Load class:

Table 52 – Unmetered Scattered Load Variance

Year	Connections	*% Change*	kWh **	*% Change*
2010	1		9,732	
2011	2	*35.71%*	7,563	*-22.29%*
2012	1	*-15.79%*	5,733	*-24.20%*
2013	2	*18.75%*	5,733	*0.00%*
2014	1	*-26.32%*	5,733	*0.00%*
2015	1	*-14.29%*	5,184	*-9.58%*
2016	2	*58.33%*	6,816	*31.48%*
2017	2	*26.32%*	6,801	*-0.22%*
2018	2	*16.67%*	6,801	*0.00%*
2019	2	*0.00%*	6,288	*-7.54%*
10-yr Average	*2*	*11.04%*	*6,638*	*-3.59%*
2016 OEB-Approved	*1*		*3,024*	

** Number of connections is expressed in year average format*
*** kWh is without loss*

Connection count and consumption for the Unmetered Scattered Load class has been consistent since 2010. The Load Forecast model uses a 10-year (2010-2019) average to determine the projections.

WNP does not anticipate any new connections in 2020 or 2021. The projected consumption for 2021 is 6,288 kWh which is consistent to 2019 actual.

As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted customer numbers for Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in connections, kWh consumption and kW demand for the Sentinel Lighting class:

Table 53 – Sentinel Lighting Variance

Year	Connections	% Change	kWh **	% Change	kW	% Change
2010	28		31,586		88	
2011	28	0.00%	27,612	-12.58%	80	-8.25%
2012	28	0.00%	26,093	-5.50%	72	-9.95%
2013	28	0.00%	26,093	0.00%	72	0.00%
2014	28	-0.30%	25,409	-2.62%	71	-2.62%
2015	27	-5.07%	24,839	-2.24%	70	-1.28%
2016	24	-9.43%	22,057	-11.20%	61	-12.06%
2017	23	-3.82%	19,673	-10.81%	55	-10.81%
2018	23	-0.36%	19,673	0.00%	55	0.00%
2019	23	0.00%	19,673	0.00%	55	-0.01%
10-yr Average	*26*	*-2.11%*	*24,271*	*-5.00%*	*68*	*-5.00%*
2016 OEB-Approved	*29*		*23,128*		*65*	

** Number of connections is expressed in year average format*
*** kWh is without loss*

The connection count, consumption and kWh for the Sentinel Lighting class has generally declined over the 10-year period. The Load Forecast model uses a 10-year (2010-2019) average to determine the projections.

WNP does not anticipate any new connections in 2020 or 2021 with the Load Forecast using 23 Sentinel Light connections for the Bridge Year and Test Year. The projected consumption and demand for 2021 is 19,673 kWh and 55 kW which is consistent to 2017, 2018 and 2019 actuals.

As explained in Section 3.1.9 Determination of Customer Forecast, WNP has used a simple 10-year (2010-2019) geometric mean function to determine the forecasted customer numbers for Bridge Year (2020) and Test Year (2021) with the methodology behind the projections being explained in detail in Section 3.3.1.

The table below illustrates the yearly change in connections, kWh consumption and kW demand for the Streetlight class:

Table 54 – Streetlight Variance

Year	Connections	% Change	kWh **	% Change	kW	% Change
2010	900		719,199		1,964	
2011	899	-0.09%	713,388	-0.81%	1,964	-0.05%
2012	898	-0.13%	715,663	0.32%	1,963	-0.02%
2013	900	0.17%	719,239	0.50%	1,980	0.84%
2014	905	0.61%	720,792	0.22%	1,983	0.18%
2015	905	0.00%	720,792	0.00%	1,984	0.01%
2016	907	0.23%	723,427	0.37%	1,984	0.03%
2017	908	0.14%	697,359	-3.60%	1,920	-3.22%
2018	908	-0.04%	691,015	-0.91%	1,902	-0.96%
2019	908	-0.01%	650,270	-5.90%	1,810	-4.83%
10-yr Average	*904*	*0.10%*	*707,114*	*-1.09%*	*1,945*	*-0.89%*
2016 OEB-Approved	*905*		*725,392*		*1,995*	

** Number of connections is expressed in year average format*
*** kWh is without loss*

The connection count, consumption and demand for the Streetlight class has been consistent since 2010.

As discussed in "Section 3.1.8 Regression Results," all streetlights maintained and billed by WNP have been converted to LED lights – 27 connections in 2017 and 897 connections in 2019. Consequently, this resulted in a manual adjustment to the Wholesale Forecast. For its Load Forecast, WNP is proposing to use 229,833 kWh and 633 kW with 924 connections for the Bridge Year (2020) and Test Year (2021) as per the calculations described in "Section 3.1.8 Regression Results."

The table below summarizes the variance between the 2016 Board Approved Load Forecast and the Test Year (2021) Load Forecast[17].

Table 55 – 2012 Board Approved VS 2019 Load Forecast

	Customer Class	2016 Board-Approved	2021 Forecast	Variance
Customers / Connections	Residential	3,251	3,355	104
	General Service <50kW	476	468	(8)
	General Service 50-999kW	38	34	(4)
	General Service 1,000-4,999kW	5	5	0
	Unmetered Scattered Load	1	2	1
	Sentinel Lighting	29	23	(6)
	Streetlights	905	924	19
	Total	**4,705**	**4,811**	**107**
	Customer Class	2016 Board-Approved	2021 Forecast	Variance
kWh	Residential	27,408,200	26,503,100	(905,100)
	General Service <50kW	12,494,682	11,455,522	(1,039,160)
	General Service 50-999kW	14,065,279	18,697,353	4,632,074
	General Service 1,000-4,999kW	50,613,209	42,766,148	(7,847,061)
	Unmetered Scattered Load	3,024	6,288	3,264
	Sentinel Lighting	23,128	19,673	(3,455)
	Streetlights	725,392	229,833	(495,559)
	Total	**105,332,914**	**99,677,917**	**(5,654,997)**
	Customer Class	2016 Board-Approved	2021 Forecast	Variance
kW	General Service 50-999kW	43,362	52,425	9,063
	General Service 1,000-4,999kW	108,301	92,890	(15,411)
	Sentinel Lighting	65	55	(10)
	Streetlights	1,995	632	(1,363)
	Total	**153,723**	**146,002**	**(7,721)**

WNP acknowledges that the utility has little control over its' Board Approved Load Forecast as the regulator dictates the manner in which the forecast is determined (i.e. using a multivariate regression analysis based on multi-year historical values.) In other words, the Load Forecasting process is formulaic in nature and hence year-over-year variances are outside of the utility's control.

[17] MFR - explanations of the bridge and test year forecasts by rate class, variance analysis between the last OEB-approved and the actual and weather-normalized actual results

The overall consumption decline can be explained by the decline in the number of customers (in the General Service <50 kW class) and changes in weather patterns and effects of energy efficiencies (especially the Residential customer class).

The table below presents variances between actuals and 2016 Board Approved.[18]

Table 56 - Yearly Variances from Last Board Approved

	Customer Class	2016 Board-Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Forecast	2021 Forecast
Customers / Connections	Residential	3,251	(32)	(5)	28	51	77	104
	General Service <50kW	476	(6)	(3)	(5)	(6)	(7)	(8)
	General Service 50-999kW	38	(2)	(3)	(4)	(3)	(3)	(4)
	General Service 1,000-4,999kW	5	0	0	0	0	0	0
	Unmetered Scattered Load	1	1	1	1	1	1	1
	Sentinel Lighting	29	(5)	(6)	(6)	(6)	(6)	(6)
	Streetlights	905	2	3	3	3	19	19
	Total	4,705	(43)	(13)	17	41	82	107
	Customer Class	2016 Board-Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Forecast	2021 Forecast
kWh	Residential	27,408,200	(2,884,624)	(3,545,090)	(2,062,295)	(2,154,304)	(1,521,324)	(905,100)
	General Service <50kW	12,494,682	(527,076)	(1,084,291)	(912,542)	(1,356,510)	(1,192,000)	(1,039,160)
	General Service 50-999kW	14,065,279	5,828,464	4,964,334	4,240,150	4,674,601	4,662,025	4,632,074
	General Service 1,000-4,999kW	50,613,209	(5,116,693)	(4,862,682)	(6,699,253)	(7,847,061)	(7,847,061)	(7,847,061)
	Unmetered Scattered Load	3,024	3,792	3,777	3,777	3,264	3,264	3,264
	Sentinel Lighting	23,128	(1,071)	(3,455)	(3,455)	(3,455)	(3,455)	(3,455)
	Streetlights	725,392	(1,965)	(28,033)	(34,377)	(75,122)	(495,559)	(495,559)
	Total	105,332,914	(2,699,173)	(4,555,439)	(5,467,995)	(6,758,587)	(6,394,110)	(5,654,997)
	Customer Class	2016 Board-Approved	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Forecast	2021 Forecast
kW	General Service 50-999kW	43,362	12,074	10,043	9,553	8,323	9,147	9,063
	General Service 1,000-4,999kW	108,301	(11,483)	(9,709)	(10,276)	(12,071)	(15,411)	(15,411)
	Sentinel Lighting	65	(4)	(10)	(10)	(10)	(10)	(10)
	Streetlights	1,995	(11)	(75)	(93)	(185)	(1,363)	(1,363)
	Total	153,723	576	249	(827)	(3,943)	(7,637)	(7,721)

Generally, the above table illustrates:

- Residential customer count was below the Board-Approved number in 2016 and 2017; whilst GS<50 and GS50-999 kW classes did not meet the 2016 Board-approved customer count.
- Regarding kWh consumption, with the exception of GS50-999 kW, all other metered classes did not meet the 2016 Board-approved kWh forecast. As explained in section 3.1.6,

[18] MFR - explanations of the bridge and test year forecasts by rate class, variance analysis between the last OEB-approved and the actual and weather-normalized actual results

the assumption is that the effects of energy efficient changes have contributed to the modest decline in consumption.

- Concerning kW demand, again, with the exception of GS50-999 kW, all other classes did not meet the 2016 Board-approved kW forecast. For General Service 1,000-4,999 kW class, this is attributed to participation in CDM programs and more recently, the Industrial Conservation Initiative program.

WNP has completed worksheet "Appendix 2-IB Load Forecast Analysis" and included it in Appendix 3A of this Exhibit.

The tables below illustrate the actual average kWh consumption and kW demand per customer, by customer class, and historical and adjusted forecast average use per customer generated from the load forecast. As can be seen from the results below, the predicted use per customer follows the trend created from its historical usage per customer.[19]

Table 57 - Average kWh per Customer / Connection

	Residential	GS<50kW	GS50-999kW	GS1000-4999kW	USL	Sentinel	StreetLights
2010	8,249	23,773	525,763	7,615,491	8,342	1,128	799
2011	8,206	24,487	557,154	7,904,303	4,777	986	793
2012	7,925	24,474	581,876	8,467,506	4,300	932	797
2013	8,096	25,488	431,137	8,453,276	3,621	932	800
2014	8,062	25,055	416,414	8,742,583	4,914	910	796
2015	7,771	25,366	561,719	9,506,071	5,184	937	796
2016	7,618	25,499	559,075	9,099,303	4,305	919	798
2017	7,352	24,136	547,615	9,150,105	3,401	852	768
2018	7,731	24,634	538,395	8,782,791	2,915	855	761
2019	7,648	23,698	535,425	8,553,230	2,695	855	716
Bridge Year 2020	7,648	23,698	535,425	8,553,230	2,695	855	249
Test Year 2021	7,648	23,698	535,425	8,553,230	2,695	855	249

** Streetlight Bridge Year and Test Year consumption based on manual adjustment to account for LED streetlights as discussed in Section 3.1.8 Regression Results*

Table 58 - Average kW per Customer/Connection

	GS50-999kW	GS1000-4999kW	Sentinel	StreetLights
2010	61,885	83,976	88	1,964
2011	65,743	86,114	80	1,964
2012	67,820	89,132	72	1,963
2013	52,256	105,092	72	1,980
2014	48,273	109,682	71	1,983
2015	55,778	99,567	70	1,984
2016	55,436	96,818	61	1,984
2017	53,405	98,592	55	1,920
2018	52,915	98,025	55	1,902
2019	51,685	96,230	55	1,810
Bridge Year 2020	52,509	92,890	55	632
Test Year 2021	52,425	92,890	55	632

** Streetlight Bridge Year and Test Year consumption based on manual adjustment to account for LED streetlights as discussed in Section 3.1.8 Regression Results*

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

3.3.2 VARIANCE ANALYSIS OF DISTRIBUTION REVENUES[20]

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

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

Table 59 - Variance Analysis of Revenues

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

	Year	2016 Board Approved	2016	Variance	2017	Variance	2018	Variance
Residential	Fixed	$23.97	$23.97	$0.00	$27.95	$3.98	$31.81	$3.86
	Variable	$0.0153	$0.0153	$0.0000	$0.0103	-$0.0050	$0.0052	-$0.0051
	Cust/Conn	3,251	3,219	-32	3,246	27	3,279	33
	kWh	27,408,200	24,523,576	-2,884,624	23,863,110	-660,466	25,359,188	1,496,078
	Revenues	$1,354,463.10	$1,278,073.04	-$76,390.06	$1,334,275.81	$56,202.77	$1,395,547.50	$61,271.69
GS<50	Fixed	$41.71	$41.71	$0.00	$42.31	$0.60	$42.63	$0.32
	Variable	$0.0179	$0.0179	$0.0000	$0.0182	$0.0003	$0.0183	$0.0001
	Cust/Conn	476	469	-7	473	4	470	-3
	kWh	12,494,682	11,967,606	-527,076	11,410,391	-557,215	11,564,095	153,704
	Revenues	$461,902.33	$444,908.51	-$16,993.82	$445,996.46	$1,087.95	$453,860.76	$7,864.30
GS 50-999	Fixed	$275.90	$275.90	$0.00	$279.90	$4.00	$282.00	$2.10
	Variable	$2.6315	$2.6315	$0.0000	$2.6697	$0.0382	$2.6897	$0.0200
	Cust/Conn	38	34	-4	33	-1	34	1
	kWh	14,065,279	19,893,744	5,828,465	19,029,613	-864,131	18,305,428	-724,185
	kW	43,362	55,436	12,074	53,405	-2,031	51,912	-1,493
	Revenues	$231,351.50	$247,714.65	$16,363.15	$251,129.76	$3,415.11	$242,505.61	-$8,624.15
GS 1000-4999	Fixed	$2,254.94	$2,254.94	$0.00	$2,287.64	$32.70	$2,304.80	$17.16
	Variable	$3.0505	$3.0505	$0.0000	$3.0947	$0.0442	$3.1179	$0.0232
	Cust/Conn	5	5	0	5	0	5	0
	kWh	50,613,209	45,496,516	-5,116,693	45,750,527	254,011	43,918,718	-1,831,809
	kW	108,301	96,818	-11,483	98,592	1,774	98,050	-543
	Revenues	$465,668.60	$429,058.41	-$36,610.19	$440,647.04	$11,588.63	$443,135.25	$2,488.21
USL	Fixed	$28.33	$28.33	$0.00	$28.74	$0.41	$28.96	$0.22
	Variable	$0.0156	$0.0156	$0.0000	$0.0158	$0.0002	$0.0159	$0.0001
	Cust/Conn	1	2	1	2	0	2	0
	kWh	3,024	6,816	3,792	6,801	-15	6,801	0
	Revenues	$387.13	$626.25	$239.12	$882.70	$256.45	$917.58	$34.88
Sentinel	Fixed	$7.38	$7.38	$0.00	$7.49	$0.11	$7.55	$0.06
	Variable	$27.3041	$27.3041	$0.0000	$27.7000	$0.3959	$27.9078	$0.2078
	Cust/Conn	29	23	-6	23	0	23	0
	kWh	23,128	22,056	-1,072	19,674	-2,382	19,673	-1
	kW	65	61	-4	55	-6	55	0
	Revenues	$4,343.01	$3,379.02	-$963.99	$3,615.73	$236.71	$3,644.99	$29.26
Street Lighting	Fixed	$1.60	$1.60	$0.00	$1.62	$0.02	$1.63	$0.01
	Variable	$1.7664	$1.7664	$0.0000	$1.7920	$0.0256	$1.8054	$0.0134
	Cust/Conn	908	908	0	908	0	908	0
	kWh	725,392	723,427	-1,965	697,359	-26,068	691,015	-6,344
	kW	1,995	1,984	-11	1,920	-64	1,902	-18
	Revenues	$20,957.57	$48,367.87	$27,410.30	$23,631.09	-$24,736.78	$23,741.97	$110.88
Total	**Cust/Conn**	4,708	4,660	-48	4,690	30	4,721	31
	kWh	105,332,914	102,633,741	-2,699,173	100,777,475	-1,856,266	99,864,918	-912,557
	kW	153,723	154,299	576	153,972	-327	151,919	-2,053
	Revenues	$2,539,073.24	$2,452,127.75	-$86,945.49	$2,500,178.59	$48,050.84	$2,563,353.66	$63,175.07

Variance Analysis of Revenues (Cont'd)

	Year	2019	Variance	2020	Variance	2021	Variance
Residential	Fixed	$35.83	$4.02	$36.39	$0.56	$39.18	$2.79
	Variable	$0.0000	-$0.0052	$0.0000	$0.0000	$0.0000	$0.0000
	Cust/Conn	3,302	23	3,328	26	3,355	27
	kWh	25,253,896	-105,292	25,886,876	632,980	26,503,100	616,224
	Revenues	$1,431,751.25	$36,203.75	$1,453,271.04	$21,519.79	$1,577,424.29	$124,153.25
GS<50	Fixed	$43.08	$0.45	$43.75	$0.67	$43.85	$0.10
	Variable	$0.0185	$0.0002	$0.0188	$0.0003	$0.0239	$0.0051
	Cust/Conn	470	0	469	-1	468	-1
	kWh	11,138,172	-425,923	11,302,682	164,510	11,455,522	152,840
	Revenues	$450,899.74	-$2,961.02	$458,715.42	$7,815.68	$520,449.99	$61,734.57
GS 50-999	Fixed	$284.96	$2.96	$289.38	$4.42	$289.38	$0.00
	Variable	$2.7179	$0.0282	$2.7600	$0.0421	$3.4101	$0.6501
	Cust/Conn	35	1	34	-1	34	0
	kWh	18,739,880	434,452	18,727,304	-12,576	18,697,353	-29,951
	kW	51,685	-228	52,509	824	52,425	-84
	Revenues	$252,543.91	$10,038.30	$256,591.88	$4,047.97	$290,613.41	$34,021.53
GS 1000-4999	Fixed	$2,329.00	$24.20	$2,365.10	$36.10	$2,365.10	$0.00
	Variable	$3.1506	$0.0327	$3.1994	$0.0488	$4.4260	$1.2266
	Cust/Conn	5	0	5	0	5	0
	kWh	42,766,148	-1,152,570	42,766,148	0	42,766,148	0
	kW	96,231	-1,819	92,890	-3,341	92,890	0
	Revenues	$447,206.34	$4,071.09	$439,098.27	-$8,108.07	$553,038.25	$113,939.98
USL	Fixed	$29.26	$0.30	$29.71	$0.45	$26.58	-$3.13
	Variable	$0.0161	$0.0002	$0.0163	$0.0002	$0.0125	-$0.0038
	Cust/Conn	2	0	2	0	2	0
	kWh	6,288	-513	6,288	0	6,288	0
	Revenues	$929.17	$11.59	$886.84	-$42.33	$822.75	-$64.09
Sentinel	Fixed	$7.63	$0.08	$7.75	$0.12	$8.78	$1.03
	Variable	$28.2008	$0.2930	$28.6379	$0.4371	$32.4036	$3.7657
	Cust/Conn	23	0	23	0	23	0
	kWh	19,673	0	55	-19,618	55	0
	kW	55	0	55	0	55	0
	Revenues	$3,693.76	$48.77	$3,714.08	$20.32	$4,197.50	$483.42
Street Lighting	Fixed	$1.65	$0.02	$1.68	$0.03	$4.25	$2.57
	Variable	$1.8244	$0.0190	$1.8527	$0.0283	$4.6187	$2.7660
	Cust/Conn	908	0	924	16	924	0
	kWh	650,270	-40,745	229,833	-420,437	229,833	0
	kW	1,810	-92	632	-1,178	632	0
	Revenues	$23,925.67	$183.70	$19,798.75	-$4,126.92	$50,045.21	$30,246.46
Total	**Cust/Conn**	4,745	24	4,785	40	4,811	26
	kWh	98,574,327	-1,290,591	98,919,186	344,859	99,658,299	739,113
	kW	149,780	-2,139	146,086	-3,694	146,002	-84
	Revenues	$2,610,949.84	$47,596.18	$2,632,076.28	$21,126.44	$2,996,591.40	$364,515.12

2016 Board Approved VS 2016 Actual

The total distribution revenue in 2016 of $2,452,128 was $86,945 lower than the 2016 Board Approved. The primary reason was that the regression analysis used in Cost of Service applications overestimate the Load Forecast compared to actuals.

2016 Actual VS 2017 Actual

The total distribution revenue in 2017 of $2,500,178 was $48,051 higher than the 2016 Actual. The primary reason was that as Residential fixed rate increased in percentage, the overestimation of the Load Forecast compared to actuals had less effect on revenue.

2017 Actual VS 2018 Actual

The total distribution revenue in 2018 of $2,563,354 was $63,175 higher than the 2017 Actual. The primary reason was that as Residential fixed rate increased in percentage, the overestimation of the Load Forecast compared to actuals had less effect on revenue.

2018 Actual VS 2019 Actual

The total distribution revenue in 2019 of $2,610,950 was $47,596 higher than the 2018 Actual. The primary reason was that as Residential fixed rate increased in percentage, the overestimation of the Load Forecast compared to actuals had less effect on revenue.

2019 Actual VS 2020 Predicted

The predicted total distribution revenue in 2020 of $2,632,076 is $21,126 higher than the 2019 Actual. The primary reason was the IRM percentage increase in rates. This increase will likely not exist to the same extent as this projection since it is based on the load forecast and usage has been lower for March to June 2020 due to COVID-19.

2021 Predicted VS 2020 Predicted

The predicted total distribution revenue in 2021 of $2,996,591 is $364,515 higher than the 2020 Predicted values. The primary reason for this increase is to eliminate the revenue deficiency in this rate application.

Table 60 - Revenues at Proposed Rates

The table below shows the projected revenues, variable and fixed, derived from proposed 2021 distribution rates using the load forecast for the Test Year (2021):

2021 Rates at 2021 Load

	Test Year Projected Revenue from Proposed Variable Charges							
Customer Class Name	**Variable Distribution Rate**	**per**	**Test Year Volume**	**Gross Variable Revenue**	**Transform. Allowance Rate**	**Transform. Allowance kW's**	**Transform. Allowance $'s**	**Net Variable Revenue**
Residential	$0.0000	kWh	26,503,100	$0.00			$0.00	$0.00
General Service < 50 kW	$0.0239	kWh	11,455,522	$274,176.25			$0.00	$274,176.25
General Service 50 to 2999 kW	$3.4101	kW	52,425	$178,772.17	0.60	10,607	($6,364.43)	$172,407.74
General Service 3000-4999 kW	$4.4260	kW	92,890	$411,132.25			$0.00	$411,132.25
Unmetered Scattered Load	$0.0125	kWh	6,288	$78.51			$0.00	$78.51
Sentinel Lighting	$32.4036	kW	55	$1,774.22			$0.00	$1,774.22
Street Lighting	$4.6187	kW	632	$2,921.21			$0.00	$2,921.21
Total Variable Revenue			**38,110,912**	**$868,854.60**		10607	($6,364.43)	$862,490.17

	Test Year Projected Revenue from Proposed Fixed Charges							
Customer Class Name	**Fixed Rate**	**Customers (Connections)**	**Fixed Charge Revenue**	**Variable Revenue**	**TOTAL**	**% Fixed Revenue**	**% Variable Revenue**	**% Total Revenue**
Residential	$39.18	3,355	$1,577,424.29	$0.00	$1,577,424.29	92.88%		55.37%
General Service < 50 kW	$43.85	468	$246,273.74	$274,176.25	$520,449.99	47.21%	46.71%	17.42%
General Service 50 - 999 kW	$289.38	34	$118,205.67	$172,407.74	$290,613.41	40.67%	53.92%	9.69%
General Service 1000 - 4999 kW	$2,365.10	5	$141,906.00	$411,132.25	$553,038.25	25.66%	67.68%	16.59%
Unmetered Scattered Load	$26.58	2	$744.24	$78.51	$822.75	101.11%	10.97%	0.04%
Sentinel Lighting	$8.78	23	$2,423.28	$1,774.22	$4,197.50	50.96%	42.30%	0.14%
Street Lighting	$4.25	924	$47,124.00	$2,921.21	$50,045.21	37.22%	5.92%	0.75%
Total Fixed Revenue		**4,811**	**$2,134,101.23**	**$862,490.17**	**$2,996,591.40**			

3.4 OTHER REVENUES

3.4.1 OVERVIEW OF OTHER REVENUE

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

Other Distribution Revenues includes items such as:

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

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

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Table 61 – OEB Appendix 2-H[21]

	Reporting Basis	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
		2016	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
	USoA Description	**Board Approved**						
4235	**4235-Miscellaneous Service Revenues**	-$58,297	-$65,689	-$56,991	-$49,669	-$49,666	-$33,643	-$34,000
4225	**4225-Late Payment Charges**	-$29,000	-$32,463	-$25,259	-$26,043	-$26,204	-$24,436	-$24,500
4082	4082-Retail Services Revenues	-$5,780	-$5,689	-$5,619	-$5,596	-$7,616	-$7,725	-$7,880
4084	4084-Service Transaction Requests (STR) Revenues	-$50	-$41	-$38	-$52	-$221	-$225	-$230
4086	4086-SSS Administration Revenue	-$14,113	-$13,399	-$13,486	-$13,544	-$13,649	-$13,675	-$13,725
4205	4205-Interdepartmental Rents	$0	$0	$0	$0	$0	$0	$0
4210	4210-Rent from Electric Property	-$29,800	-$30,420	-$27,938	-$29,624	-$29,225	-$29,500	-$49,296
4215	4215-Other Utility Operating Income	$0	$0	$0	$0	$0	$0	$0
4220	4220-Other Electric Revenues	$0	$0	$0	$0	$0	$0	$0
4240	4240-Provision for Rate Refunds	$0	$0	$0	$0	$0	$0	$0
4245	4245-Government Assistance Directly Credited to Income	-$11,565	-$11,710	-$11,854	-$11,854	-$12,503	$0	$0
4305	4305-Regulatory Debits	$0	$0	$0	$0	$0	$0	$0
4310	4310-Regulatory Credits	$0	$0	$0	$0	$0	$0	$0
4315	4315-Revenues from Electric Plant Leased to Others	$0	$0	$0	$0	$0	$0	$0
4320	4320-Expenses of Electric Plant Leased to Others	$0	$0	$0	$0	$0	$0	$0
4324	4324-Special Purpose Charge Recovery	$0	$0	$0	$0	$0	$0	$0
4325	4325-Revenues from Merchandise Jobbing, Etc.	$0	$0	$0	$0	$0	$0	$0
4330	4330-Costs and Expenses of Merchandising Jobbing, Etc.	$0	$0	$0	$0	$0	$0	$0
4335	4335-Profits and Losses from Financial Instrument Hedges	$0	$0	$0	$0	$0	$0	$0
4340	4340-Profits and Losses from Financial Instrument Investments	$0	$0	$0	$0	$0	$0	$0
4345	4345-Gains from Disposition of Future Use Utility Plant	$0	$0	$0	$0	$0	$0	$0
4350	4350-Losses from Disposition of Future Use Utility Plant	$0	$0	$0	$0	$0	$0	$0

[21] MFR - Completed Appendix 2-H

4355	4355-Gain on Disposition of Utility and Other Property	$0	$0	-$9,863	-$2,498	-$10,000	-$5,000	-$5,000
4360	4360-Loss on Disposition of Utility and Other Property	$28,000	$20,210	$17,503	$30,375	$51,692	$25,000	$25,000
4365	4365-Gains from Disposition of Allowances for Emission	$0	$0	$0	$0	$0	$0	$0
4370	4370-Losses from Disposition of Allowances for Emission	$0	$0	$0	$0	$0	$0	$0
4375	4375-Revenues from Non-Utility Operations	-$140,000	-$150,226	-$160,999	-$181,570	-$537,757	-$170,000	-$170,000
4380	4380-Expenses of Non-Utility Operations	$134,000	$155,563	$142,554	$140,574	$471,517	$150,000	$150,000
4380	4380-Sub-account Generation Facility Expenses	$0	$0	$0	$0	$0	$0	$0
4385	4385-Non-Utility Rental Income	$0	$0	$0	$0	$0	$0	$0
4390	4390-Miscellaneous Non-Operating Income	-$500	-$170	-$470	-$2,787	-$2,750	-$900	-$900
4395	4395-Rate-Payer Benefit Including Interest	$0	$0	$0	$0	$0	$0	$0
4398	4398-Foreign Exchange Gains and Losses, Including Amortization	$0	$0	$0	$0	$0	$0	$0
4405	4405-Interest and Dividend Income	-$3,000	-$12,122	-$11,924	-$27,582	-$28,105	-$19,500	-$4,800
4415	4415-Equity in Earnings of Subsidiary Companies	$0	$0	$0	$0	$0	$0	$0
Othe	Other	$0	$0	$0	$0	$0	$0	$0
	Total	-$130,105	-$146,157	-$164,384	-$179,871	-$194,487	-$129,604	-$135,330
	Specific Service Charges	-$58,297	-$65,689	-$56,991	-$49,669	-$49,666	-$33,643	-$34,000
	Late Payment Charges	-$29,000	-$32,463	-$25,259	-$26,043	-$26,204	-$24,436	-$24,500
	Other Distribution/Operating Revenues	-$61,307	-$61,260	-$58,935	-$60,670	-$63,213	-$51,125	-$71,130
	Other Income or Deductions	$18,500	$13,256	-$23,198	-$43,488	-$55,404	-$20,400	-$5,700
	Total	-$130,105	-$146,157	-$164,384	-$179,871	-$194,487	-$129,604	-$135,330

Account 4405 - Interest and Dividend Income

	2016 Actual	2017 Actual	2018 Actual[2]	2019 Actual	2020 Bridge Year[2]	2021 Test Year
Reporting Basis	Accrual	Accrual	Accrual	Accrual	Accrual	Accrual
Interest and Dividend Income	-3,513.96	-3,843.47	-11,788.77	-9,555.96	-5,704.62	-1,000.00
Interest and Dividend Income - Carrying Charges	-8,607.93	-8,080.29	-15,793.61	-18,549.49	-13,795.38	-3,800.00
Total	**-12,121.89**	**-11,923.76**	**-27,582.38**	**-28,105.45**	**-19,500.00**	**-4,800.00**

3.4.2 OTHER REVENUE VARIANCE ANALYSIS[22]

The tables below present year-over-year variances of other operating revenues:

Table 62 - Variance Analysis of Other Operating Revenues

2016 – 2017

	Reporting Basis	MIFRS	MIFRS	Var Analysis	Var Analysis
		2016	**2017**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$65,689	-$56,991	$8,698	-13.24%
4225	**4225-Late Payment Charges**	-$32,463	-$25,259	$7,204	-22.19%
4082	4082-Retail Services Revenues	-$5,689	-$5,619	$70	-1.23%
4084	4084-Service Transaction Requests (STR) Revenues	-$41	-$38	$3	-7.93%
4086	4086-SSS Administration Revenue	-$13,399	-$13,486	-$87	0.65%
4210	4210-Rent from Electric Property	-$30,420	-$27,938	$2,482	-8.16%
4245	4245-Government Assistance Directly Credited to Income	-$11,710	-$11,854	-$144	1.23%
4355	4355-Gain on Disposition of Utility and Other Property	$0	-$9,863	-$9,863	
4360	4360-Loss on Disposition of Utility and Other Property	$20,210	$17,503	-$2,707	-13.40%
4375	4375-Sub-account Generation Facility Revenues	-$150,226	-$160,999	-$10,773	7.17%
4380	4380-Expenses of Non-Utility Operations	$155,563	$142,554	-$13,009	-8.36%
4390	4390-Miscellaneous Non-Operating Income	-$170	-$470	-$300	176.47%
4405	4405-Interest and Dividend Income	-$12,122	-$11,924	$198	-1.63%
	Total	-$146,157	-$164,384	-$18,228	12%
	Specific Service Charges	-$65,689	-$56,991	$8,698	-13.24%
	Late Payment Charges	-$32,463	-$25,259	$7,204	-22.19%
	Other Distribution/Operating Revenues	-$61,260	-$58,935	$2,325	-3.79%
	Other Income or Deductions	$13,256	-$23,198	-$36,454	275.01%
	Total	-$146,157	-$164,384	-$18,228	12.47%

2016 Actual compared to 2017 Actual

The Other Revenues variance reflects an increase of $18,228. There was a decrease in the Service and Late Payment charges which was more than offset by a gain on disposition of assets (mostly the value of a fully amortized pickup truck), and an increase in chargeable job activity in Non-Utility income.

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

Table 63 - Variance Analysis of Other Operating Revenues

2017-2018

	Reporting Basis	MIFRS	MIFRS	Var Analysis	Var Analysis
		2017	**2018**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$56,991	-$49,669	$7,322	-12.85%
4225	**4225-Late Payment Charges**	-$25,259	-$26,043	-$784	3.11%
4082	4082-Retail Services Revenues	-$5,619	-$5,596	$23	-0.41%
4084	4084-Service Transaction Requests (STR) Revenues	-$38	-$52	-$15	38.41%
4086	4086-SSS Administration Revenue	-$13,486	-$13,544	-$58	0.43%
4210	4210-Rent from Electric Property	-$27,938	-$29,624	-$1,686	6.03%
4245	4245-Government Assistance Directly Credited to Income	-$11,854	-$11,854	$0	0.00%
4355	4355-Gain on Disposition of Utility and Other Property	-$9,863	-$2,498	$7,365	-74.68%
4360	4360-Loss on Disposition of Utility and Other Property	$17,503	$30,375	$12,872	73.54%
4375	4375-Sub-account Generation Facility Revenues	-$160,999	-$181,570	-$20,572	12.78%
4380	4380-Expenses of Non-Utility Operations	$142,554	$140,574	-$1,980	-1.39%
4390	4390-Miscellaneous Non-Operating Income	-$470	-$2,787	-$2,317	492.91%
4405	4405-Interest and Dividend Income	-$11,924	-$27,582	-$15,659	131.32%
	Total	-$164,384	-$179,871	-$15,487	9%
	Specific Service Charges	-$56,991	-$49,669	$7,322	-12.85%
	Late Payment Charges	-$25,259	-$26,043	-$784	3.11%
	Other Distribution/Operating Revenues	-$58,935	-$60,670	-$1,735	2.94%
	Other Income or Deductions	-$23,198	-$43,488	-$20,290	87.46%
	Total	-$164,384	-$179,871	-$15,487	9.42%

2017 Actual compared to 2018 Actual

There was a decrease in the Miscellaneous Service charges which is added to the decrease in gain on disposition of assets and an increase in loss on disposition of assets. The increase in Non-Utility income is attributable to a one-time CDM bonus from the IESO of just over $22,000. There was an increase in Interest due to higher interest rates, higher credit DVA balances and a higher bank account balance from the loans for the MS3 substation rebuild.

Table 64 - Variance Analysis of Other Operating Revenues

2018 – 2019

	Reporting Basis	MIFRS	MIFRS	Var Analysis	Var Analysis
		2018	**2019**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$49,669	-$49,666	$3	-0.01%
4225	**4225-Late Payment Charges**	-$26,043	-$26,204	-$161	0.62%
4082	4082-Retail Services Revenues	-$5,596	-$7,616	-$2,020	36.09%
4084	4084-Service Transaction Requests (STR) Revenues	-$52	-$221	-$169	322.49%
4086	4086-SSS Administration Revenue	-$13,544	-$13,649	-$105	0.78%
4210	4210-Rent from Electric Property	-$29,624	-$29,225	$401	-1.35%
4245	4245-Government Assistance Directly Credited to Income	-$11,854	-$12,503	-$649	5.47%
4355	4355-Gain on Disposition of Utility and Other Property	-$2,498	-$10,000	-$7,502	300.40%
4360	4360-Loss on Disposition of Utility and Other Property	$30,375	$51,692	$21,317	70.18%
4375	4375-Sub-account Generation Facility Revenues	-$181,570	-$537,757	-$356,187	196.17%
4380	4380-Expenses of Non-Utility Operations	$140,574	$471,517	$330,943	235.42%
4390	4390-Miscellaneous Non-Operating Income	-$2,787	-$2,750	$37	-1.32%
4405	4405-Interest and Dividend Income	-$27,582	-$28,105	-$523	1.90%
	Total	-$179,871	-$194,487	-$14,616	8%
	Specific Service Charges	-$49,669	-$49,666	$3	-0.01%
	Late Payment Charges	-$26,043	-$26,204	-$161	0.62%
	Other Distribution/Operating Revenues	-$60,670	-$63,213	-$2,5452	4.12%
	Other Income or Deductions	-$43,488	$55,404	-$11,916	27.40%
	Total	-$179,871	-$194,487	-$14,616	8.13%

2018 Actual compared to 2019 Actual

There was an increase in gain on disposition of assets and a much larger increase in loss on disposition of assets. The increase in Non-Utility income is mostly attributable to a large job to convert the streetlights in WNP's service territory to LED.

Table 65 - Variance Analysis of Other Operating Revenues

2019 – 2020

	Reporting Basis	MIFRS	MIFRS	Var Analysis	Var Analysis
		2019	**2020**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$49,666	-$33,643	$16,023	-32.26%
4225	**4225-Late Payment Charges**	-$26,204	-$24,436	$1,768	-6.75%
4082	4082-Retail Services Revenues	-$7,616	-$7,725	-$110	1.44%
4084	4084-Service Transaction Requests (STR) Revenues	-$221	-$225	-$4	1.93%
4086	4086-SSS Administration Revenue	-$13,649	-$13,675	-$26	0.19%
4210	4210-Rent from Electric Property	-$29,225	-$29,500	-$275	0.94%
4245	4245-Government Assistance Directly Credited to Income	-$12,503	$0	$12,503	-100.00%
4355	4355-Gain on Disposition of Utility and Other Property	-$10,000	-$5,000	$5,000	-50.00%
4360	4360-Loss on Disposition of Utility and Other Property	$51,692	$25,000	-$26,692	-51.64%
4375	4375-Sub-account Generation Facility Revenues	-$537,757	-$170,000	$367,757	-68.39%
4380	4380-Expenses of Non-Utility Operations	$471,517	$150,000	-$321,517	-68.19%
4390	4390-Miscellaneous Non-Operating Income	-$2,750	-$900	$1,850	-67.27%
4405	4405-Interest and Dividend Income	-$28,105	-$19,500	$8,605	-30.62%
	Total	-$194,487	-$129,604	$64,883	-33%
	Specific Service Charges	-$49,666	-$33,643	$16,023	-32.26%
	Late Payment Charges	-$26,204	-$24,436	$1,768	-6.75%
	Other Distribution/Operating Revenues	-$63,213	-$51,125	$12,088	-19.12%
	Other Income or Deductions	-$55,404	-$20,400	$35,004	-63.18%
	Total	-$194,487	-$129,604	$64,883	-33.36%

2019 Actual compared to 2020 Bridge

There was a large decrease in Miscellaneous Service Revenue due to the introduction of new OEB regulations regarding customer service rules, particularly LDC's not being able to apply a "Notification Charge" for collection activities such as issuance of an account overdue notice or disconnection notice.[23] Prior to July 1, 2019, WNP was charging $15.00 (before HST) for delivery of a disconnection notice as per the LDC's approved Tariff of Rates and Charges "Notification Charge." After July 1, 2019, as per OEB's generic rate order eliminating "Collection Charges", WNP

[23] OEB Bulletin Notification Charge (August 8, 2019) stated "It is OEB staff's view that using the Notification Charge, or any other approved specific service charge for the purpose of charging for activities related to collection of accounts would be inconsistent with the OEB's decision to eliminate Collection of Account charges. As a result, OEB staff's view is that electricity distributors cannot apply the Notification Charge for collection activities. The views expressed in this Bulletin are those of OEB staff and are not binding on the OEB".

ceased applying the charge for delivery of a disconnection notice. The table below illustrates the revenue collected by the utility from applying the Notification Charge for delivery of disconnection notices for the period January 1, 2016 to June 30, 2019:

Table 66 - Variance Analysis of Other Operating Revenues

		2016		2017		2018		2019	
Customer Administration	**Charge**	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
Notification Charge	$15.00	1,826	$27,390	1,209	$18,135	832	$12,480	165	$2,475
Year-over-Year Change				-34%	-34%	-31%	-31%	-80%	-80%
3-year average 2016 to 2018				*$19,335*					

Using 2018 as the last full year, WNP estimates the effect on Other Revenue for not being able to apply the Notification Charge for delivery of disconnection notices in 2020 and 2021 is approx. $12,000 to $13,000 per year. WNP acknowledges that in 2017 and 2018, the number of disconnection notices fell by approx. 30% per year. This decline is due to the introduction of OEB policy of prohibiting the disconnection of residential customers for non-payment for the period:

a) February 2017 to April 30th 2017[24] and ;

b) Each subsequent year for the winter period from November 15th to April 30th [25]

This prohibition includes "*… or issue a disconnection notice to a residential customer solely by reason of non-payment.*"

Account 4245 is accounted for in the Fixed Asset Continuity schedule and thus was removed from this category. The gain and loss on disposition of assets have been adjusted to reflect an average year. The income and expenses for non-utility operations are also adjusted to remove the effects of the exceptional items of the last two years. Interest and Dividend income has also dropped since market interest rates and the OEB's prescribed interest rate have dropped in the second half of the year.

[24] OEB Decision and Order EB-2017-0318 Amending Electricity Distributor Licences to Prohibit the Disconnection of Residential Customers and Related Matters (February 23, 2017), amendments to section 70 of the Ontario Energy Board Act, 1998 (OEB Act)
[25] OEB Decision and Order EB-2017-0318 Amending Electricity Distributor Licences to Prohibit the Disconnection of Residential Customers and Related Matters (November 2, 2017)

Table 67 - Variance Analysis of Other Operating Revenues

2020 – 2021

	Reporting Basis	MIFRS	MIFRS	Var Analysis	Var Analysis
		2020	**2021**	**$**	**%**
	USoA Description				
4235	**4235-Miscellaneous Service Revenues**	-$33,643	-$34,000	-$357	1.06%
4225	**4225-Late Payment Charges**	-$24,436	-$24,500	-$64	0.26%
4082	4082-Retail Services Revenues	-$7,725	-$7,880	-$155	2.00%
4084	4084-Service Transaction Requests (STR) Revenues	-$225	-$230	-$5	2.00%
4086	4086-SSS Administration Revenue	-$13,675	-$13,725	-$50	0.37%
4210	4210-Rent from Electric Property	-$29,500	-$49,2960	-$19,796	67.11%
4245	4245-Government Assistance Directly Credited to Income	$0	$0	$0	0.00%
4355	4355-Gain on Disposition of Utility and Other Property	-$5,000	-$5,000	$0	0.00%
4360	4360-Loss on Disposition of Utility and Other Property	$25,000	$25,000	$0	0.00%
4375	4375-Sub-account Generation Facility Revenues	-$170,000	-$170,000	$0	0.00%
4380	4380-Expenses of Non-Utility Operations	$150,000	$150,000	$0	0.00%
4390	4390-Miscellaneous Non-Operating Income	-$900	-$900	$0	0.00%
4405	4405-Interest and Dividend Income	-$19,500	-$4,800	$14,700	-75.38%
	Total	-$129,604	-$135,330	-$5,726	4%
	Specific Service Charges	-$33,643	-$34,000	-$357	1.06%
	Late Payment Charges	-$24,436	-$24,500	-$64	0.26%
	Other Distribution/Operating Revenues	-$51,125	-$71,130	-$20,005	39.13%
	Other Income or Deductions	-$20,400	-$5,700	$14,700	-72.06%
	Total	-$129,604	-$135,330	-$5,726	4.42%

2020 Bridge compared to 2021 Test Year

There will be a large increase in 4210 with the pole attachment charges not being allocated to the Deferral Variance Account. This will be partially offset by a decrease in interest due to low interest rates for the entire year and lower DVA and bank balances during the year.

3.4.3 PROPOSED SPECIFIC SERVICE CHARGES[26]

WNP is not proposing any changes to the current Specific Service Charges that have been approved by the OEB in previous applications, with the exception of "specific charge for access to power poles - $/pole/year", known as wireline pole attachment charge.

Wireline Pole Attachment Charge

WNP uses the provincial-wide wireline pole attachment charge as determined by the OEB and adjusted annually to account for inflation.

The LDC acknowledges that for the wireline pole attachment charge, the OEB will issue a Decision and Rate Order declaring the annual inflation adjusted rate to be effective from January 1, 2021. In its' "Other Operating Revenue" projections for the Test Year 2021, WNP has applied a 2% inflation rate above the Bridge Year (2020) in the absence of an OEB rate being available at the time of preparing this application.

MicroFIT Monthly Service Charge

WNP is proposing no change to the MicroFIT Monthly Service Charge of $15.69 - a non-provincial-wide rate that was approved in the LDC's 2016 Cost of Service rate application (EB-2015-0110).

In its' 2016 Cost of Service rate application, EB-2015-0110, WNP explained in Exhibit 3 the utility incurred third-party settlement cost of $10.00 per MicroFIT account per month that specifically related to MicroFIT customers. During interrogatories, the LDC used the OEB's Cost Allocation model, worksheet "O3.6 MicroFIT Charge" to demonstrate the impact of this third-party settlement cost that is specifically related to MicroFIT accounts.[27] WNP continues to incur this third-party settlement cost of $10.00 per MicroFIT account per month.

[26] MFR – Any new proposed specific service charges
[27] EB-2015-0110 WellingtonNorth_IR_20160127 Applicant's response to IR 3-VECC-21 – page 130

WNP does not record specific costs related to MicroFIT meters separately. However, assuming that cost-structure for MicroFIT meters is similar to that of a Residential metered customer, using the data in worksheet "O3.6 - MicroFIT Charge" in the Cost Allocation model, then the calculated MicroFIT Monthly Unit Cost for 2021 would be $16.33 per account per month as illustrated below:

Table 68 – "O3.6 – MicroFIT Charge" Including MicroFIT Meters to Residential Base

Description	Residential	Monthly Unit Cost	*Monthly Unit Cost including MicroFIT*
Customer Premises - Operations Labour (5070)	$ 42,145.04	$ 1.05	$ 1.04
Customer Premises - Materials and Expenses (5075)	$ 10,536.26	$ 0.26	$ 0.26
Meter Expenses (5065)	$ 37,413.12	$ 0.93	$ 0.92
Maintenance of Meters (5175)	$ 21,824.32	$ 0.54	$ 0.54
Meter Reading Expenses (5310)	$ 54,106.39	$ 1.34	$ 10.00
Customer Billing (5315)	$ 90,215.25	$ 2.24	$ 2.23
Amortization Expense - General Plant Assigned to Meters	$ 4,798.11	$ 0.12	$ 0.12
Admin & General Expenses allocated to O&M expenses for meters	$ 47,334.50	$ 1.18	$ 1.17
Allocated PILS (general plant assigned to meters)	$ -	$ -	$ -
Interest Expense	$ 828.51	$ 0.02	$ 0.02
Income Expenses	$ 1,240.84	$ 0.03	$ 0.03
Total Cost	**$310,442.35**	**$ 7.71**	**$ 16.33**
Number of Residential Customers (forecast year-average for 2021)	3,355		
Number of MicroFIT accounts *(as at Dec 31st 2019)*	22		
Number of Residential accounts + MicroFIT accounts	3,377		

In the above, table, WNP has added the 22 MicroFIT connection accounts to the 2021 forecasted number of Residential customer accounts. Dividing the total cost by a revised meter count of 3,377 plus adding the $10.00 per month for settlement provider costs (highlighted above) results in a MicroFIT monthly unit cost of $16.33[28]. WNP used this approach in its' 2016 Cost of Service application as evidence to adjust its' MicroFIT Monthly Service from the province-wide rate, which was accepted by all intervening parties.

The calculated monthly unit cost presented in the table above of $16.33 is above WNP's current OEB-approved MicroFIT Monthly Service Charge. The Applicant is proposing to maintain the current rate of $15.69 for the MicroFIT Monthly Service Charge.

[28] MFR - As per OEB letter "Review of Fixed Monthly Charge for microFIT Generator Service classification" (February 24, 2020), any distributor that applies for a distributor-specific charge will be required to support its costs with evidence

There are no classes or discrete customer groups that may be materially impacted by changes to other rates and charges.[29]

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

WNP has no affiliates and as such does not have any affiliate transactions, shared services and corporate cost allocation that will be affecting its 2021 rates.[30]

APPENDICES

List of Appendices

Appendix 3A	OEB Appendix 2-IB
Appendix 3B	WNP Load Forecast

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

[30] MFR - Revenue from affiliate transactions, shared services, corporate cost allocation

APPENDIX 3A – OEB APPENDIX 2-IB

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	112,178,419	112,108,114		
Historical	*2016*		Actual	109,112,022	108,980,115	OEB-approved	112,565,495
Historical	*2017*		Actual	107,122,742	107,482,226		
Historical	*2018*		Actual	106,666,688	106,776,885		
Historical	*2019*		Actual	104,914,586	104,736,951		
Bridge Year	*2020*		Forecast		105,301,014		
Test Year	*2021*		Forecast		106,087,656		

Variance Analysis	Year	Year-over-year			Versus OEB-approved
	2015				
	2016	-2.7%	-2.8%		
	2017	-1.8%	-1.4%		
	2018	-0.4%	-0.7%		
	2019	-1.6%	-1.9%		
	2020		0.5%		
	2021		0.7%		-5.8%
	Geometric Mean	-2.2%	-1.1%		-1.5%

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	3,212			Actual	24,960,131				Actual	7,771	0		
Historical	*2016*	Actual	3,219	OEB-approved	3,251	Actual	24,523,576		OEB-approved	27,408,200	Actual	7,618	0	OEB-approved	8,431
Historical	*2017*	Actual	3,246			Actual	23,863,110				Actual	7,352	0		
Historical	*2018*	Actual	3,279			Actual	25,345,905				Actual	7,731	0		
Historical	*2019*	Actual	3,302			Actual	25,253,896				Actual	7,648	0		
Bridge Year	*2020*	Forecast	3,328			Forecast		25,886,876			Forecast	0	7,778		
Test Year	*2021*	Forecast	3,355			Forecast		26,503,100			Forecast	0	7,899		

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	0.2%		*2016*	-1.7%		*2016*	-2.0%	
	2017	0.8%		*2017*	-2.7%		*2017*	-3.5%	
	2018	1.0%		*2018*	6.2%		*2018*	5.1%	
	2019	0.7%		*2019*	-0.4%		*2019*	-1.1%	
	2020	0.8%		*2020*			*2020*		
	2021	0.8%	3.2%	*2021*	2.4%	-3.3%	*2021*	1.6%	-6.3%
	Geometric Mean	0.9%	0.8%	Geometric Mean	0.4%	-0.8%	Geometric Mean	-0.5%	-1.6%

	Calendar Year (for 2021 Cost of Service	Revenues			
Historical	*2015*	Actual	$ 1,183,229		
Historical	*2016*	Actual	$ 1,244,463	OEB-approved	$1,354,342
Historical	*2017*	Actual	$ 1,336,547		
Historical	*2018*	Actual	$ 1,389,125		
Historical	*2019*	Actual	$ 1,427,941		
Bridge Year (Foreca	*2020*	Forecast	$ 1,438,055		
Test Year (Forecast)	*2021*	Forecast	$ 1,577,450		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	5.2%	
	2017	7.4%	
	2018	3.9%	
	2019	2.8%	
	2020	0.7%	
	2021	9.7%	16.5%
	Geometric Mean	5.9%	3.9%

2 Customer Class: General Service <50kW

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	474			Actual	12,033,955				Actual	25,366	0		
Historical	*2016*	Actual	469	OEB-approved	476	Actual	11,967,606		OEB-approved	12,494,682	Actual	25,499	0	OEB-approved	26,276
Historical	*2017*	Actual	473			Actual	11,410,391				Actual	24,136	0		
Historical	*2018*	Actual	470			Actual	11,582,140				Actual	24,634	0		
Historical	*2019*	Actual	470			Actual	11,138,172				Actual	23,698	0		
Bridge Year	*2020*	Forecast	469			Forecast		11,302,682			Forecast	0	24,099	0	
Test Year	*2021*	Forecast	468			Forecast		11,455,522			Forecast	0	24,476	0	

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved
	2015			*2015*			*2015*		
	2016	-1.1%		*2016*	-0.6%		*2016*	0.5%	
	2017	0.7%		*2017*	-4.7%		*2017*	-5.3%	
	2018	-0.5%		*2018*	1.5%		*2018*	2.1%	
	2019	0.0%		*2019*	-3.8%		*2019*	-3.8%	
	2020	-0.2%		*2020*			*2020*		
	2021	-0.2%	-1.6%	*2021*	1.4%	-8.3%	*2021*	1.6%	-6.8%
	Geometric Mean	-0.3%	-0.4%	Geometric Mean	-2.5%	-2.1%	Geometric Mean	-2.2%	-1.8%

	Calendar Year (for 2021 Cost of Service)	Revenues			
Historical	*2015*	Actual	$ 425,733		
Historical	*2016*	Actual	$ 437,109	OEB-approved	$461,091
Historical	*2017*	Actual	$ 446,294		
Historical	*2018*	Actual	$ 453,431		
Historical	*2019*	Actual	$ 446,409		
Bridge Year (Foreca	*2020*	Forecast	$ 449,648		
Test Year (Forecast)	*2021*	Forecast	$ 520,438		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	2.7%	
	2017	2.1%	
	2018	1.6%	
	2019	-1.5%	
	2020	0.7%	
	2021	15.7%	12.9%
	Geometric Mean	4.1%	3.1%

3 Customer Class: General Service 50-999kWh

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	36			Actual	20,081,441				Actual	561,719	0		
Historical	*2016*	Actual	36	OEB-approved	38	Actual	19,893,743		OEB-approved	14,065,279	Actual	559,075	0	OEB-approved	369,546
Historical	*2017*	Actual	35			Actual	19,029,613				Actual	547,615	0		
Historical	*2018*	Actual	34			Actual	18,305,429				Actual	538,395	0		
Historical	*2019*	Actual	35			Actual	18,739,880				Actual	535,425	0		
Bridge Year	*2020*	Forecast	35			Forecast		18,727,304			Forecast	0	542,559		
Test Year	*2021*	Forecast	34			Forecast		18,697,353			Forecast	0	549,277		

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*	-0.9%		*2016*	-0.5%	
	2017	-2.3%		*2017*	-4.3%		*2017*	-2.0%	
	2018	-2.2%		*2018*	-3.8%		*2018*	-1.7%	
	2019	2.9%		*2019*	2.4%		*2019*	-0.6%	
	2020	-1.4%		*2020*			*2020*		
	2021	-1.4%	-10.6%	*2021*	-0.2%	32.9%	*2021*	1.2%	48.6%
	Geometric Mean	-1.0%	-2.8%	Geometric Mean	-2.3%	7.4%	Geometric Mean	-1.6%	10.4%

	Calendar Year (for 2021 Cost of Service)	Revenues				Demand (kW)					Demand (kW) per Customer				
							Actual (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	$ 312,596			Actual	55,778				Actual				
Historical	*2016*	Actual	$ 280,599	OEB-approved	$232,406	Actual	55,436		OEB-approved	43,362	Actual			OEB-approved	1,139.3
Historical	*2017*	Actual	$ 251,771			Actual	53,405				Actual				
Historical	*2018*	Actual	$ 245,613			Actual	52,915				Actual				
Historical	*2019*	Actual	$ 252,352			Actual	51,685				Actual				
Bridge Year (Foreca	*2020*	Forecast	$ 254,871			Forecast		52,509			Forecast				
Test Year (Forecast)	*2021*	Forecast	$ 290,475			Forecast		52,425			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	-10.2%		*2016*	-0.6%		*2016*		
	2017	-10.3%		*2017*	-3.7%		*2017*		
	2018	-2.4%		*2018*	-0.9%		*2018*		
	2019	2.7%		*2019*	-2.3%		*2019*		
	2020	1.0%		*2020*			*2020*		
	2021	14.0%	25.0%	*2021*	-0.2%	20.9%	*2021*		
	Geometric Mean	-1.5%	5.7%	Geometric Mean	-2.5%	4.9%	Geometric Mean		

4 Customer Class: General Service 1,000-4999kW

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	5			Actual	47,530,355				Actual	9,506,071	0		
Historical	*2016*	Actual	5	OEB-approved	5	Actual	45,496,516		OEB-approved	50,613,209	Actual	9,099,303	0	OEB-approved	10,122,642
Historical	*2017*	Actual	5			Actual	45,750,527				Actual	9,150,105	0		
Historical	*2018*	Actual	5			Actual	43,913,956				Actual	8,782,791	0		
Historical	*2019*	Actual	5			Actual	42,766,148				Actual	8,553,230	0		
Bridge Year	*2020*	Forecast	5			Forecast		42,766,148			Forecast	0	8,553,230	0	
Test Year	*2021*	Forecast	5			Forecast		42,766,148			Forecast	0	8,553,230		

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved	Year	Year-over-year	Test Year Versus OEB-approved
	2015			*2015*			*2015*		
	2016	0.0%		*2016*	-4.3%		*2016*	-4.3%	
	2017	0.0%		*2017*	0.6%		*2017*	0.6%	
	2018	0.0%		*2018*	-4.0%		*2018*	-4.0%	
	2019	0.0%		*2019*	-2.6%		*2019*	-2.6%	
	2020	0.0%		*2020*			*2020*		
	2021	0.0%	0.0%	*2021*	0.0%	-15.5%	*2021*	0.0%	-15.5%
	Geometric Mean	0.0%	0.0%	Geometric Mean	-3.5%	-4.1%	Geometric Mean	-3.5%	-4.1%

	Calendar Year (for 2021 Cost of Service	Revenues				Demand (kW)					Demand (kW) per Customer				
							Actual (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	$ 322,450			Actual	99,567				Actual				
Historical	*2016*	Actual	$ 384,795	OEB-approved	$465,666	Actual	96,818		OEB-approved	108,301	Actual			OEB-approved	21,660
Historical	*2017*	Actual	$ 440,467			Actual	98,592				Actual				
Historical	*2018*	Actual	$ 443,136			Actual	98,025				Actual				
Historical	*2019*	Actual	$ 440,971			Actual	96,230				Actual				
Bridge Year (Foreca	*2020*	Forecast	$ 413,514			Forecast		92,890			Forecast				
Test Year (Forecast)	*2021*	Forecast	$ 553,038			Forecast		92,890			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	19.3%		*2016*	-2.8%		*2016*		
	2017	14.5%		*2017*	1.8%		*2017*		
	2018	0.6%		*2018*	-0.6%		*2018*		
	2019	-0.5%		*2019*	-1.8%		*2019*		
	2020	-6.2%		*2020*			*2020*		
	2021	33.7%	18.8%	*2021*	0.0%	-14.2%	*2021*		
	Geometric Mean	11.4%	4.4%	Geometric Mean	-1.1%	-3.8%	Geometric Mean		

5 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)	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	1			Actual	5,184				Actual	5,184	0		
Historical	*2016*	Actual	2	OEB-approved	1	Actual	6,816		OEB-approved	3,024	Actual	4,305	0	OEB-approved	4,430
Historical	*2017*	Actual	2			Actual	6,801				Actual	3,401	0		
Historical	*2018*	Actual	2			Actual	6,801				Actual	2,915	0		
Historical	*2019*	Actual	2			Actual	6,288				Actual	2,695	0		
Bridge Year	*2020*	Forecast	2			Forecast		6,288			Forecast	0	2,695		
Test Year	*2021*	Forecast	2			Forecast		6,288			Forecast	0	2,695		

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	58.3%		*2016*	31.5%		*2016*	-17.0%	
	2017	26.3%		*2017*	-0.2%		*2017*	-21.0%	
	2018	16.7%		*2018*	0.0%		*2018*	-14.3%	
	2019	0.0%		*2019*	-7.5%		*2019*	-7.5%	
	2020	0.0%		*2020*			*2020*		
	2021	0.0%	241.7%	*2021*	0.0%	107.9%	*2021*	0.0%	-39.2%
	Geometric Mean	18.5%	36.0%	Geometric Mean	6.6%	20.1%	Geometric Mean	-19.6%	-11.7%

	Calendar Year (for 2021 Cost of Service)	Revenues				
Historical	*2015*	Actual	$ 356			
Historical	*2016*	Actual	$ 583	OEB-approved	$279	
Historical	*2017*	Actual	$ 883			
Historical	*2018*	Actual	$ 919			
Historical	*2019*	Actual	$ 928			
Bridge Year (Foreca	*2020*	Forecast	$ 959			
Test Year (Forecast)	*2021*	Forecast	$ 716			

Variance Analysis	Year	Year-over-year	Test Year Versus OEB-approved
	2015		
	2016	63.6%	
	2017	51.5%	
	2018	4.1%	
	2019	1.0%	
	2020	3.3%	
	2021	-25.3%	156.5%
	Geometric Mean	15.0%	26.6%

6 Customer Class: Sentinel Lights

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	27			Actual	24,839				Actual	937	0		
Historical	*2016*	Actual	24	OEB-approved	29	Actual	22,057		OEB-approved	23,128	Actual	919	0	OEB-approved	791
Historical	*2017*	Actual	23			Actual	19,673				Actual	852	0		
Historical	*2018*	Actual	23			Actual	19,673				Actual	855	0		
Historical	*2019*	Actual	23			Actual	19,673				Actual	855	0		
Bridge Year	*2020*	Forecast	23			Forecast		19,673			Forecast	0	855		
Test Year	*2021*	Forecast	23			Forecast		19,673			Forecast	0	855		

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	-9.4%		*2016*	-11.2%		*2016*	-1.9%	
	2017	-3.8%		*2017*	-10.8%		*2017*	-7.3%	
	2018	-0.4%		*2018*	0.0%		*2018*	0.4%	
	2019	0.0%		*2019*	0.0%		*2019*	0.0%	
	2020	0.0%		*2020*			*2020*		
	2021	0.0%	-21.4%	*2021*	0.0%	-14.9%	*2021*	0.0%	8.2%
	Geometric Mean	-2.8%	-5.8%	Geometric Mean	-7.5%	-4.0%	Geometric Mean	-3.0%	2.0%

	Calendar Year (for 2021 Cost of Service)	Revenues				Demand (kW)					Demand (kW) per Customer				
							Actual (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	$ 3,077			Actual	70				Actual				
Historical	*2016*	Actual	$ 3,405	OEB-approved	$4,367	Actual	61		OEB-approved	65	Actual			OEB-approved	2.22
Historical	*2017*	Actual	$ 3,618			Actual	55				Actual				
Historical	*2018*	Actual	$ 3,657			Actual	55				Actual				
Historical	*2019*	Actual	$ 3,690			Actual	55				Actual				
Bridge Year (Foreca	*2020*	Forecast	$ 3,706			Forecast		55			Forecast				
Test Year (Forecast)	*2021*	Forecast	$ 4,197			Forecast		55			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	10.7%		*2016*	-12.1%		*2016*		
	2017	6.3%		*2017*	-10.8%		*2017*		
	2018	1.1%		*2018*	0.0%		*2018*		
	2019	0.9%		*2019*	0.0%		*2019*		
	2020	0.4%		*2020*			*2020*		
	2021	13.3%	-3.9%	*2021*	0.0%	-15.8%	*2021*		
	Geometric Mean	6.4%	-1.0%	Geometric Mean	-7.8%	-4.2%	Geometric Mean		

7 Customer Class: Street Lights

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	905			Actual	720,792				Actual	796	0		
Historical	*2016*	Actual	907	OEB-approved	905	Actual	723,427		OEB-approved	725,392	Actual	798	0	OEB-approved	802
Historical	*2017*	Actual	908			Actual	697,359				Actual	768	0		
Historical	*2018*	Actual	908			Actual	691,015				Actual	761	0		
Historical	*2019*	Actual	908			Actual	650,270				Actual	716	0		
Bridge Year	*2020*	Forecast	924			Forecast		229,833			Forecast	0	249		
Test Year	*2021*	Forecast	924			Forecast		229,833			Forecast	0	249		

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	0.2%		*2016*	0.4%		*2016*	0.1%	
	2017	0.1%		*2017*	-3.6%		*2017*	-3.7%	
	2018	0.0%		*2018*	-0.9%		*2018*	-0.9%	
	2019	0.0%		*2019*	-5.9%		*2019*	-5.9%	
	2020	1.8%		*2020*			*2020*		
	2021	0.0%	2.1%	*2021*	0.0%	-68.3%	*2021*	0.0%	-69.0%
	Geometric Mean	0.4%	0.5%	Geometric Mean	-3.4%	-25.0%	Geometric Mean	-3.5%	-25.4%

	Calendar Year (for 2021 Cost of Service)	Revenues				Demand (kW)					Demand (kW) per Customer				
							Actual (Weather actual)	Weather-normalized		Weather-normalized		Actual (Weather actual)	Weather-normalized		Weather-normalized
Historical	*2015*	Actual	$ 95,329			Actual	1,984				Actual				
Historical	*2016*	Actual	$ 53,713	OEB-approved	$20,922	Actual	1,984		OEB-approved	1,995	Actual			OEB-approved	2.20
Historical	*2017*	Actual	$ 23,647			Actual	1,920				Actual				
Historical	*2018*	Actual	$ 23,781			Actual	1,902				Actual				
Historical	*2019*	Actual	$ 23,904			Actual	1,810				Actual				
Bridge Year (Foreca	*2020*	Forecast	$ 22,220			Forecast		632			Forecast				
Test Year (Forecast)	*2021*	Forecast	$ 50,045			Forecast		632			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	-43.7%		*2016*	0.0%		*2016*		
	2017	-56.0%		*2017*	-3.2%		*2017*		
	2018	0.6%		*2018*	-1.0%		*2018*		
	2019	0.5%		*2019*	-4.8%		*2019*		
	2020	-7.0%		*2020*			*2020*		
	2021	125.2%	139.2%	*2021*	0.0%	-68.3%	*2021*		
	Geometric Mean	-12.1%	24.4%	Geometric Mean	-3.0%	-25.0%	Geometric Mean		

APPENDIX 3B – WNP LOAD FORECAST

A copy of WNP's Load Forecast has been filed as a live Excel spreadsheet format that contains the data used to determine the customers, connections, demand and load forecast.[31] The file is named "Appendix 3B WNP Wholesale Load Forecast."

[31] MFR – All data used to determine the customers/connections, demand and load forecasts must be presented and filed in a live Microsoft Excel spreadsheet format