EXHIBIT 3 – LOAD AND CUSTOMER FORECAST

2024 Cost of Service

Westario Power Inc.
EB-2023-0058

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3.1 LOAD AND CUSTOMER FORECAST

3.1.1 Introduction

Westario Power Inc.'s (WPI) exhibit describes the proposed load forecast methodology and assumptions used to determine the rates and rate riders for WPI's customer classes.

WPI notes that it is not proposing any changes to the below customer class composition.

Table 1 – Customer Class Composition and billing determinants

Customer Class Name	Existing/ Proposed	MSC Metric	Usage Metric
Residential	Existing	Customer	kWh
GS<50	Existing	Customer	kWh
GS 50-4999kW	Existing	Connection	kW
USL	Existing	Customer	kWh
Sentinel Lighting	Existing	Connection	kW
Street Lighting	Existing	Connection	kW

Table 2 – Identifiers Unique to the LDC

	Factor	Unique to LDC
1	Customer growth or decline (historical or future)– residential	No
2	Customer growth or decline (historical or future)– business	No
3	Increased / Reduced kW Demand (historic or future)	No
4	Weather abnormality	No
5	Infrastructure growth / decline	No
6	Change in Demographics	No
7	Customer composite (e.g., 85% residential accounts making up 50% of annual kWh consumption)	No
8	Growth in net-metered accounts, electric vehicles, battery-storage	No
9	Growth in energy conservation	No
10	Etc.	No

The utility does not believe there are any specific factors that would be unique to it or would have caused a significant change in how it determines its load forecast compared to the last board-approved cost of service.

The utility is not projecting a growth trend that is different from what it has seen over past years and as such, found the regression results to be in line with its internal prediction of customer and connection projections. As indicated in the DSP, the utility maintains regular contact with developers and the region and is generally informed well in advance of upcoming plans for subdivisions and new development.

Bruce County's Housing Services division recently hired KPMG to complete a comprehensive Housing Demographic Study to help understand the County's changing demographic characteristics, current and future housing supply and demand, key housing gaps and issues, and key factors affecting housing demands, supply, and affordability issues. This study relied on census information, proprietary micro-data, and stakeholder consultations. The full study can be found at Housing Demographic Study.

Key Highlights from the Study:

Demographic Changes - Bruce County's aging population continues to highlight the importance of accessible housing units. There is a noteworthy influx of working age groups and younger age brackets in the County.

Influence of Employment Trends - Bruce Power initiatives are a major driver in regional employment growth, which influences housing demand in the County.

Lack of Housing Options - There is a lack of diversity in housing options in the County, with 83% of dwellings being single-detached houses.

Affordability of Housing Units - Housing in Bruce County, particularly along the lakeshore, has become increasingly unaffordable, not only for low-income individuals and families, but among middle income earners as well. 45% of renters spend more than 30% of their income on housing and 18% of renters spend over 50% of their income on housing.

The value of dwellings across the County increased by 76% between 2016 and 2021. In Bruce County, the affordable housing thresholds for 2020 are rents below $1,014 and ownership costs below $346,600. The average monthly dwelling costs in 2020 were $1,081 for rental and $1,251 for ownership.

Maintaining Existing Stocks - 30% of Bruce County's dwellings were constructed before 1960, which may highlight a need for capital commitment, including for the community housing portfolio owned by the Bruce County Housing Corporation.

Gap in Housing Supply - Bruce County's population has grown 8.5% since 2016 and is expected to reach 86,000 by 2046. Bruce County's dwelling supply (40,814 in 2021) has only grown 4% since 2016. This imbalance in growth could be addressed with a focus on increasing supply with higher density housing and appropriate land development in key areas to support complete communities.

Location and Lack of Services - Transportation is a barrier for lower income individuals and families seeking to find and maintain affordable housing while sustaining their employment. Affordable housing is available in outlying areas where access to employment, services, and support can be limited.

Cost of Utilities - Utility costs are not an identified top housing issue in Bruce County. The Low-Income Energy Assistance Program (LEAP), the Ontario Electricity Support Program (OESP), and the Housing Stability Fund (HSF) are available to lower income individuals and families to assist with the cost of their electricity bill and/or arrears.

Like the rest of the province, WPI's service area has seen weather abnormalities in its service area but nothing significant enough to warrant changes in its capital spending or load projections. WPI's distribution system is in good condition and robust enough to withstand sporadic weather abnormalities. WPI has not encouraged any CDM activities since the province mandated that programs be put on hold in April 2019. WPI still has several active microFit connections but does not anticipate any new connections in the future.

3.1.2 Proposed Methodology

WPI's load forecast methodology has not changed since its last Cost of Service in 2018. The forecast is prepared in two phases. The first phase, a billed energy forecast by customer class for 2024, is developed using a total purchase (Wholesale) basis regression analysis. The methodology proposed in WPI's application predicts wholesale consumption (Predicted) using a multiple regression analysis that relates historical monthly wholesale kWh usage to carefully selected variables. The one-way analysis of variance (ANOVA) is used to determine 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 means are statistically significantly different. The utility did not test the NAC method because NAC is generally seen as an alternative when sound historical data is not available.

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

For degree days, daily observations as reported in Ottawa are used. The regression model also uses other variables which are tested to see their relationship and contribution to the fluctuating wholesale purchases. Each variable is discussed in detail later in WPI's section.

3.1.3 Historical Forecast vs. Actual

WPI purchases electricity from the IESO and embedded generation (MicroFIT). In preparing for the Cost-of-Service application, WPI proposes to use a 10-year historical regression.

The following table summarizes the annual wholesale purchases for the seven years 2013 to 2022 as reported to OEB in RRR annual filing "2.1.5 Supply & Delivery Information".

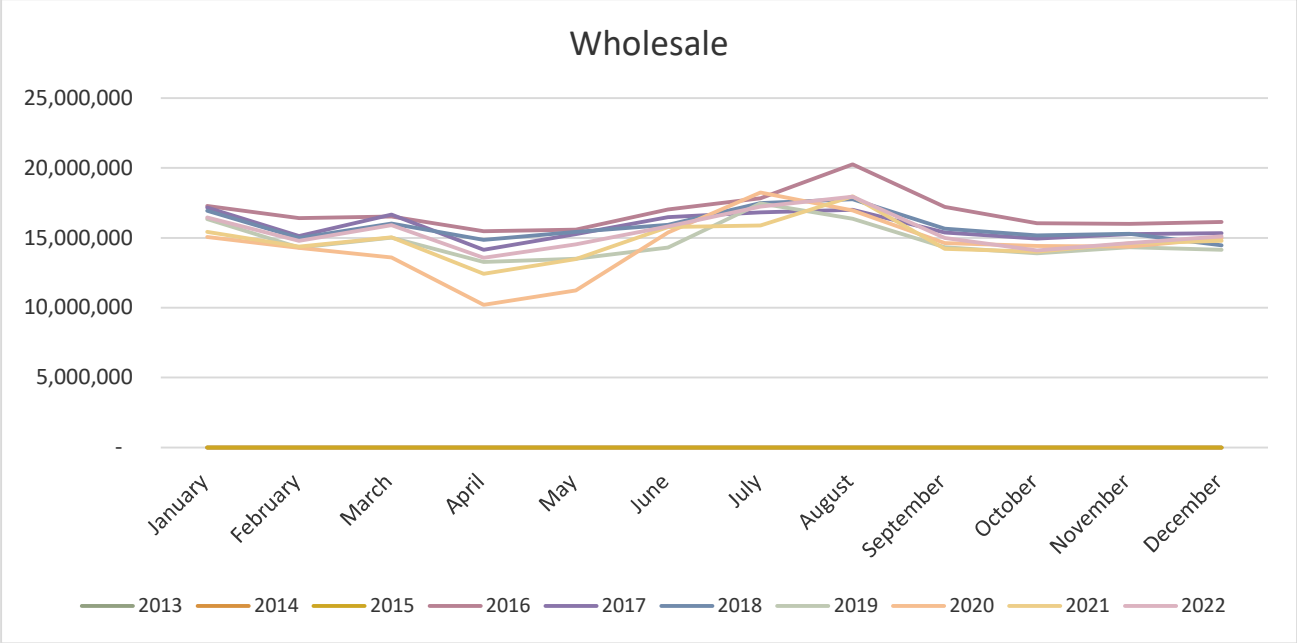
3.1.3.1 Overview of Wholesale Purchases

WPI purchases electricity from Hydro One and embedded generation (MicroFIT).

Table 3 – Historical Monthly Wholesale (2018-2022)

	2016	2017	2018	2019	2020	2021	2022
January	45,827,933	48,560,156	48,032,769	44,182,307	41,870,354	45,303,345	46,360,881
February	41,082,657	43,502,029	47,536,665	40,734,589	36,769,365	38,010,442	40,126,452
March	42,975,875	44,749,296	43,095,042	39,051,917	40,358,687	40,822,738	41,742,643
April	36,308,878	36,703,502	34,966,161	35,582,403	32,359,460	37,268,114	36,007,111
May	34,245,333	33,120,208	32,451,519	32,158,070	32,466,960	33,661,736	33,884,251
June	33,534,201	31,986,696	31,428,889	32,230,295	31,942,169	33,150,240	32,413,451
July	34,321,063	33,114,324	34,059,071	36,050,965	34,485,257	36,985,444	37,948,386
August	34,126,512	32,996,892	34,233,109	38,144,563	33,750,093	37,978,825	35,859,378
September	32,127,847	31,808,440	33,226,979	32,958,786	32,126,297	33,668,647	32,309,083
October	35,018,159	34,772,520	38,729,355	33,427,319	32,454,034	32,878,907	34,937,472
November	39,153,192	39,442,096	35,403,758	34,938,644	37,086,665	39,246,375	40,083,050
December	46,270,576	42,249,292	42,249,292	41,527,821	42,555,873	41,296,482	42,216,028
Total	454,992,226	453,005,451	455,412,607	440,987,679	428,225,214	450,271,296	453,888,186

Table 4 – Trend in Historical Monthly Wholesale (2016-2022)



WPI's load has been consistent over the past ten years, with a drop in 2020 due to Covid and weather patterns. WPI has an unusually high number of industrial customers in comparison to utilities of comparable size. The utility found that the first pandemic-related shutdowns in 2020 had a slight impact on the overall load but not enough to warrant any adjustments to the regression calculations.

Table 5 – Trend in Historical Yearly Wholesale Purchases

Year	Wholesale	year over year
2013	454,992,226	
2014	453,005,451	-0.44%
2015	455,412,607	0.53%
2016	440,987,679	-3.17%
2017	428,225,214	-2.89%
2018	450,271,296	5.15%
2019	453,888,186	0.80%
2020	450,797,958	-0.68%
2021	457,450,105	1.48%
2022	460,636,970	0.70%

WPI analyzed its wholesale purchases to see the effects of Covid on its monthly load. Although the utility evaluated various scenarios, it did not feel confident enough in the relationship between the variance to attribute it to Covid. The regression analysis results were statistically sufficient to exclude any Covid related adjustments.

Table 6 – Covid Analysis

	2019	2020	2021	2022	10Yr AVG	AVG vs COVID 2020	AVG vs COVID 2021	Avg vs COVID 2022
January	46,360,881	43,447,689	43,527,339	47,203,417	45,431,619	-1,983,930	-1,904,280	1,771,798
February	40,126,452	41,046,124	41,279,331	41,797,637	41,188,529	-142,405	90,802	609,108
March	41,742,643	39,146,163	40,171,239	42,551,682	41,466,528	-2,320,365	-1,295,289	1,085,154
April	36,007,111	33,162,782	34,273,202	36,094,613	35,272,623	-2,109,841	-999,421	821,990
May	33,884,251	33,144,752	33,543,166	34,287,485	33,296,348	-151,596	246,818	991,137
June	32,413,451	34,594,858	37,512,786	34,727,204	33,352,079	1,242,779	4,160,708	1,375,125
July	37,948,386	40,573,553	38,597,541	36,965,340	36,310,094	4,263,458	2,287,447	655,245
August	35,859,378	38,203,279	40,059,214	38,942,956	36,429,482	1,773,797	3,629,731	2,513,473
September	32,309,083	32,819,206	34,178,605	34,315,274	32,953,916	-134,711	1,224,689	1,361,358
October	34,937,472	35,693,648	34,477,683	34,341,915	34,673,101	1,020,547	-195,418	-331,186
November	40,083,050	36,622,836	38,088,839	37,142,391	37,720,785	-1,097,948	368,054	-578,394
December	42,216,028	42,343,068	41,741,160	42,267,056	42,471,665	-128,597	-730,505	-204,609
Total	**466,962,607**	**474,309,649**	**473,829,448**	**474,832,766**	**462,588,025**	**11,721,625**	**11,241,423**	**12,244,742**

- Cells in dark blue represent province-wide shut down.

3.1.3.2 Overview of Variable Used

Five main factors influence WPI's monthly electricity consumption – weather (e.g., heating (1) and cooling (2), which is by far the most dominant effect on most systems; the number of days per month (3), a spring and fall flag (4) and customer count (5). Specifics 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 with a mean temperature above 18°C. For WPI, the monthly HDD and CDD reported at Ottawa International Airport were used.

WPI has adopted the ten-year average from 2013 to 2022 as the definition of weather normal. The following table outlines the monthly weather data used in the regression analysis.

Days per month:

WPI evaluated and included a "Days per month" variable. Although the variables did not yield particularly significant results, they did slightly improve the R-Square, and therefore WPI opted to keep it as a variable.

Spring and Fall Flag:

WPI tested and included a spring and fall flag to identify the spring and fall months. In WPI's case, April, May, September, October, and November are set at "1". Summer and winter months are set at "0". The results without WPI's variable drop to 90.18%; therefore, the utility opted to include the variable in its regression analysis.

Customer Count:

WPI tested and included a "Customer Count" variable. The rationale for testing WPI's variable is that hypothetically, the load is expected to grow due to more customers being added to the distribution system. In WPI's case, this variable significantly improved the regression analysis results (66.16% to 90.18%); therefore, the utility opted to keep it.

Origin of variables

- HDD: Stats Canada
- CDD : Stats Canada
- Days per month Computed by the utility
- Customer Count Computed by the utility
- Spring Fall Flag Computed by the utility

The rationale for including and excluding variables.

During the process of testing the regression analysis, numerous variables and time intervals are examined to determine the optimal R-Squared value. The utility employs a "no-worse" rationale when selecting or omitting certain variables. In other words, if a variable is justifiable and does not negatively impact the results, it is typically retained as one of the regression variables. In the case of WPI, the Days per Month only marginally enhanced R-Square. Nonetheless, the utility elected to include them in the regression analysis.

Table 7 – Results without individual variables

Customer Class Name	Proposed Adjusted R-Square
HDD	**67.91**
CDD	**67.91**
Days per Month	**70.19**
Spring Fall	**71.89**
Customer Count	90.18

3.1.3.3 Regression Results

The table below displays the R-squared for the multiple regression equation. The table also shows the equation's standard error margin and tests the analysis for statistical significance at a 95% confidence interval. In simple terms, 90.18% of the change in wholesale can be explained by the difference in five independent variables. The adjusted R-square of 90.18% is considerably higher than the 88% adjusted R-Square from its 2018 load forecast.

Table 8 – Equation Parameters

R Squared	**0.9059**
Adjusted R Squared	**0.9018**
Standard Error	**1370758.2500**
F - Statistic	**219.5463**

The table below summarizes the individual equation coefficient components with corresponding error margins. The sum of these error margins will differ from the overall standard error of the equation due to the offsetting effect between the components. The t Stat represents a ratio of the estimated coefficient to its standard error. The t Stat can be interpreted as a measure of predictability of the variable, with the higher being better. The p-Value represents the probability that the t Stat can be outside of the extremities of the standard error. The p-Value can be interpreted as the probability that the error margin is due to chance rather than a real difference with lower being better.

Table 9 – Multiple Regression Equation

	Coefficients	Standard Error	t Stat	p-Value
Intercept	-4,288,518.630	7,325,843.560	-0.585	55.94%
HDD	19,196.270	1,086.575	17.667	0.00%
CDD	39,094.918	4,884.281	8.004	0.00%
NoD in Month	675,923.670	155,866.470	4.337	0.00%
Spring Fall	-1,112,714.230	405,497.184	-2.744	0.71%
Cust Count	625.752	233.423	2.681	0.84%

The table below displays a simple linear regression analysis of each independent variable against the dependent variable. The independent R-squared results help determine which independent variables should be included in the analysis.

Table 10 – Independent Analysis

	R Squared	Coefficient	Intercept
Intercept	68.23%	13880.46	33325674.00
HDD	7.52%	-22639.76	38321924.00
CDD	0.02%	65761.20	35546448.00
NoD in Month	47.51%	-6004844.33	40549652.00
Spring Fall	0.10%	257.08	31528142.00
Cust Count	68.23%	13880.46	33325674.00

The Durbin-Watson statistic determines if sequential (adjacent) residuals are correlated. One of the regression analysis assumptions is that the residuals (errors) are independent of each other. Sometimes, however, the data set may unknowingly contain an 'order effect,' meaning that a previous measurement could influence the outcome of the successive observations. If the residuals are not correlated, the Durbin-Watson statistic should be close to 2. Critical values displayed to the right of the statistic are based on the sample and the number of independent variables. Based on the position of the Durbin-Watson statistic relative to these values, the following assumptions can be made:

Table 11 – Confidence (95%)

1.262	**Durbin-Watson Statistic**
1.63 - 1.77	**Positive autocorrelation detected**
2.290	**Critical F-Statistic - 95% Confidence**
89.62%	**Confidence to which analysis holds**

Once WPI calculated its preferred Regression Results, the Load Forecast model then uses the coefficients from the regression results to adjust the wholesale purchases. Table 13, as seen below, demonstrates the results of WPIs adjustment. The table shows a comparison of the actual and predicted wholesale purchases.

Table 12 – Trend in Historical Yearly Wholesale Purchases

Year	Wholesale	year over year	Predicted	year over year
2013	454,992,226		444,205,116	
2014	453,005,451	-0.44%	449,537,052	1.20%
2015	455,412,607	0.53%	446,519,572	-0.67%
2016	440,987,679	-3.17%	450,254,487	0.84%
2017	428,225,214	-2.89%	444,373,758	-1.31%
2018	450,271,296	5.15%	457,201,767	2.89%
2019	453,888,186	0.80%	454,714,656	-0.54%
2020	450,797,958	-0.68%	454,586,103	-0.03%
2021	457,450,105	1.48%	448,864,671	-1.26%
2022	460,636,970	0.70%	455,410,502	1.46%

3.1.3.4 Determination of Weather Normalized Forecast

Much like the 2018 Board approved load forecast, allocation to specific weather-sensitive rate classes (Residential, GS<50, GS>50-4999) is based on the share (%) of each classes' actual retail kWh (exclusive of distribution losses) and a share of actual wholesale kWh. Weather normalized wholesale kWh, for historical years, are allocated to these classes based on these historical shares. Forecast values for 2023 and 2024 are allocated based on an average of 10 historical years. For those rate classes that use kW consumption as a billing determinant, sales for these customer classes are then converted to kW based on the historical volumetric relationship between kWh and kW. The utility then forecasts consumption per customer and adds the new customer's load to the total consumption for the class.

Allocation to specific non-weather sensitive rate classes (GS>50-4999, USL, and Streetlights) is based on an average demand/customer. The utility then uses an appropriate historical average to determine an average demand per customer. WPIs average is then applied to the customer count for the bridge and test year.

The following tables illustrate the methodology as described above for each of WPI's classes.

Table 13 – Residential Forecast

Residential						
Year	**Residential Actual kWh**	**Total Actual Wholesale**	**Ratio%**	**Predicted Wholesale**	**Residential Weather Normal**	**Per customer**
2013	194,595,056	454,992,226	42.77%	444,205,116	189,981,530	9,534
2014	193,810,675	453,005,451	42.78%	449,537,052	192,326,780	9,601
2015	185,320,984	455,412,607	40.69%	446,519,572	181,702,142	9,024
2016	179,123,216	440,987,679	40.62%	450,254,487	182,887,268	9,023
2017	175,230,053	428,225,214	40.92%	444,373,758	181,838,049	8,862
2018	189,038,322	450,271,296	41.98%	457,201,767	191,947,956	9,274
2019	188,724,159	453,888,186	41.58%	454,714,656	189,067,800	9,058
2020	195,030,079	450,797,958	43.26%	454,586,103	196,668,956	9,242
2021	195,812,266	457,450,105	42.81%	448,864,671	192,137,257	8,932
2022	198,504,570	460,636,970	43.09%	455,410,502	196,252,303	9,046
2023			42.05%	458,015,496	192,599,398	8,878
2024		*Avg*	42.05%	459,494,658	193,221,398	8,831

Table 14 – GS < 50kW Forecast.

General Service < 50 kW						
Year	**Actual kWh**	**Total Wholesale**	**Ratio%**	**Predicted Wholesale**	**Weather Normal**	**Per customer**
2013	65,659,946	454,992,226	14.43%	444,205,116	64,103,258	25,650
2014	67,910,428	453,005,451	14.99%	449,537,052	67,390,477	26,626
2015	65,575,775	455,412,607	14.40%	446,519,572	64,295,249	25,452
2016	65,361,600	440,987,679	14.82%	450,254,487	66,735,093	26,213
2017	67,751,219	428,225,214	15.82%	444,373,758	70,306,145	27,265
2018	71,822,560	450,271,296	15.95%	457,201,767	72,928,036	28,290
2019	72,750,960	453,888,186	16.03%	454,714,656	72,883,430	28,173
2020	68,092,748	450,797,958	15.10%	454,586,103	68,664,945	26,309
2021	69,561,352	457,450,105	15.21%	448,864,671	68,255,823	26,029
2022	73,619,513	460,636,970	15.98%	455,410,502	72,784,213	27,423
2023			15.27%	458,015,496	69,955,931	26,182
2024		*Avg*	15.27%	459,494,658	70,181,854	26,092

Table 15 – GS 50-4999kW Forecast (kWh)

General Service > 50 to 4999 kW						
Year	**Actual kWh**	**Total Wholesale**	**Ratio%**	**Predicted Wholesale**	**Weather Normal**	**Per customer**
2013	171,169,776	454,992,226	37.62%	444,205,116	167,111,625	617,028
2014	168,755,215	453,005,451	37.25%	449,537,052	167,463,155	710,593
2015	176,163,146	455,412,607	38.68%	446,519,572	172,723,134	732,913
2016	178,404,939	440,987,679	40.46%	450,254,487	182,153,897	778,990
2017	172,094,365	428,225,214	40.19%	444,373,758	178,584,112	893,733
2018	178,565,971	450,271,296	39.66%	457,201,767	181,314,417	951,782
2019	179,642,752	453,888,186	39.58%	454,714,656	179,969,857	928,877
2020	171,472,846	450,797,958	38.04%	454,586,103	172,913,766	942,737
2021	172,409,863	457,450,105	37.69%	448,864,671	169,174,070	931,661
2022	170,442,715	460,636,970	37.00%	455,410,502	168,508,841	985,912
2023			38.62%	458,015,496	176,868,613	1,089,129
2024		*Avg*	38.62%	459,494,658	177,439,811	1,149,987

Table 16 – GS 50-4999kW Forecast (kW)

General Service > 50 to 4999 kW			
Year	**kWh**	**kW**	**KW/kWh Ratio**
2013	171,169,776	476,639	0.00278
2014	168,755,215	459,991	0.00273
2015	176,163,146	460,418	0.00261
2016	178,404,939	497,479	0.00279
2017	172,094,365	439,035	0.00255
2018	178,565,971	455,528	0.00255
2019	179,642,752	444,478	0.00247
2020	171,472,846	426,593	0.00249
2021	172,409,863	429,336	0.00249
2022	170,442,715	422,433	0.00248
2023	176,868,613	443,140	0.00251
2024	177,439,811	444,572	0.00251
Avg			*0.00251*

Table 17 – USL Forecast

USL				
Year	kWh	kW	Customer	kWh per customer
2013	290,220		58	5,004
2014	287,775		57	5,049
2015	287,775		57	5,049
2016	277,132		57	4,898
2017	261,752		54	4,831
2018	241,032		53	4,562
2019	222,617		50	4,423
2020	223,044		50	4,461
2021	222,383		50	4,470
2022	222,219		49	4,535
2023	217,684		48	4,535
2024	213,149		47	4,535
Avg			*49*	*4,535*

Table 18 – Sentinel Forecast

Street Lighting						
Year	kWh	kW	Connection	kWh per connection	KW per connection	KW/kWh Ratio
2013	14,674	19	9	1,661	2.1509	0.00129
2014	14,674	16	8	1,834	2.0000	0.00109
2015	11,496	16	8	1,437	2.0000	0.00139
2016	6,019	16	8	760	2.0211	0.00266
2017	7,858	16	8	982	2.0000	0.00204
2018	7,695	16	9	824	1.7143	0.00208
2019	7,577	16	9	842	1.7778	0.00211
2020	7,597	16	9	852	1.7944	0.00211
2021	7,576	16	8	900	1.9010	0.00211
2022	7,576	16	8	900	1.9010	0.00211
2023	7,249	16	8	866	1.9112	0.00221
2024	7,210	16	8	866	1.9215	0.00222
3 Yr. Avg			*9*	*866*	*1.8728*	*0.0022*

Table 19 – Streetlighting Forecast

Street Lighting						
Year	**kWh**	**kW**	**Connection**	**kWh per connection**	**KW per connection**	**KW/kWh Ratio**
2013	4,934,582	13,681	6,013	821	2.2752	0.00277
2014	4,958,778	12,828	6,029	822	2.1277	0.00259
2015	3,138,532	8,337	6,127	512	1.3608	0.00266
2016	2,697,791	7,337	6,244	432	1.1750	0.00272
2017	2,766,985	7,368	6,181	448	1.1920	0.00266
2018	2,480,513	6,215	6,205	400	1.0017	0.00251
2019	2,298,862	6,235	6,280	366	0.9928	0.00271
2020	2,321,451	6,235	6,285	369	0.9920	0.00269
2021	2,315,541	6,232	6,283	369	0.9919	0.00269
2022	2,315,417	6,232	6,283	369	0.9919	0.00269
2023	2,482,154	6,618	6,314	393	1.0482	0.00267
2024	2,494,298	6,650	6,345	393	1.0481	0.00267
Avg			*6,252*	*393*	*1.0482*	*0.00267*

3.1.3.5 Final Load Forecast

The table below shows the final forecast.

Table 20 – Final Load and Customer Forecast

	Year	2018	2019	2020	2021	2022	2023	2024
Residential	Cust/Conn	20697	20,873	21,064	21,279	21,510	21,694	21,879
	kWh	189,038,322	188,724,159	195,030,079	195,812,266	198,504,570	192,599,398	193,221,398
	kW	0	0	0	0	0	0	0
GS < 50 kW	Cust/Conn	2,578	2,587	2,610	2,622	2,654	2,672	2,690
	kWh	71,822,560	72,750,960	68,092,748	69,561,352	73,619,513	69,955,931	70,181,854
	kW	0	0	0	0	0	0	0
GS 50 to 4999 kW	Cust/Conn	191	194	183	182	171	162	154
	kWh	178,565,971	179,642,752	171,472,846	172,409,863	170,442,715	176,868,613	177,439,811
	kW	455,528	444,478	426,593	429,336	422,433	443,140	444,572
USL	Cust/Conn	53	50	50	50	49	48	47
	kWh	241,032	222,617	223,044	222,383	222,219	217,684	213,149
	kW	0	0	0	0	0	0	0
Sentinel	Cust/Conn	9	9	9	8	8	8	8
	kWh	7,695	7,577	7,597	7,576	7,576	7,249	7,210
	kW	16	16	16	16	16	16	16
Streetlights	Cust/Conn	6,205	6,280	6,285	6,283	6,283	6,314	6,345
	kWh	2,480,513	2,298,862	2,321,451	2,315,541	2,315,417	2,482,154	2,494,298
	kW	6,215	6,235	6,235	6,232	6,232	6,618	6,650
Total	**Cust/Conn**	**29,732**	**29,993**	**30,201**	**30,424**	**30,676**	**30,898**	**31,123**
	kWh	**442,156,094**	**443,646,928**	**437,147,765**	**440,328,981**	**445,112,010**	**442,131,029**	**443,557,720**
	kW	**461,759**	**450,729**	**432,844**	**435,584**	**428,681**	**449,774**	**451,238**

3.1.4 Accuracy of Load Forecast

The customer count has increased steadily and consistently over the past three cost of service applications which is correlated with the increased consumption which are explained in WPI's section.3.1.5.

To produce the best Adjusted R-Square, WPI did an in-depth analysis of its wholesale to better understand the trend in its monthly load as it relates to the variables selected for the regression analysis.

Table 21 – 2018 Board Approved Forecast vs 2024 Proposed Forecast

	Year	2018 BA	2022	2023	2024	Var from 2018 BA
Residential	Cust/Conn	20,749	21,510	21,694	21,879	1,130
	kWh	190,395,061	198,504,570	192,599,398	193,221,398	2,826,337
GS < 50 kW	Cust/Conn	2,593	2,654	2,672	2,690	97
	kWh	65,796,846	73,619,513	69,955,931	70,181,854	4,385,008
GS > 50 to 4999 kW	Cust/Conn	193	171	162	154	-39
	kWh	169,372,756	170,442,715	176,868,613	177,439,811	8,067,055
	kW	458,172	422,433	443,140	444,572	-13,600
USL	Cust/Conn	53	49	48	47	-6
	kWh	259,493	222,219	217,684	213,149	-46,344
Sentinel	Cust/Conn	8	8	8	8	0
	kWh	13,622	7,576	7,249	7,210	-6,412
	kW	17	16	16	16	-1
Street Lighting	Cust/Conn	6,196	6,283	6,314	6,345	149
	kWh	2,196,082	2,315,417	2,482,154	2,494,298	298,216
	kW	6,846	6,232	6,618	6,650	-196
Total	**Cust/Conn**	**29,793**	**30,676**	**30,898**	**31,123**	**1,330**
	kWh	**428,033,860**	**445,112,010**	**442,131,029**	**443,557,720**	**15,523,860**
	kW	**465,035**	**428,681**	**449,774**	**451,238**	**-13,797**

3.1.5 Determination of Customer Forecast

WPI has used a simple geometric mean function to determine the forecasted customers for 2023 and 2024. The geometric mean is more appropriate when dealing with percentages and rates of change. Although the formula is somewhat simplistic, it reasonably represents WPI's natural customer growth. WPI notes that MicroFIT related consumption is included in the Wholesale Purchases. Historical customer counts and projected customer counts for 2013 and 2024 are presented in Table 16 below. A variance analysis of customer counts and projections is shown in the following table. WPI notes that a 12-month average was used to determine the yearly customer/connection count to determine the bridge and test year forecast.

Table 22 – Customer Count Forecast

	Residential		General Service < 50 kW		General Service > 50 to 4999 kW		USL		Sentinel		Streetlights	
Date	**Cust or /Conn**	**Growth Rate**	**Cust or /Conn**	**Growth Rate**	**Cust or /Conn**	**Growth Rate**	**Cust or /Conn**	**Growth Rate**	**Cust or /Conn**	**Growth Rate**	**Cust or /Conn**	**Growth Rate**
2013	19927		2499		271		58		9		6013	
2014	20032	1.0053	2531	1.0127	236	0.8702	57	0.9828	8	0.9057	6029	1.0027
2015	20135	1.0051	2526	0.9981	236	1.0000	57	1.0000	8	1.0000	6127	1.0162
2016	20269	1.0067	2546	1.0078	234	0.9922	57	0.9927	8	0.9896	6244	1.0192
2017	20518	1.0123	2579	1.0129	200	0.8545	54	0.9576	8	1.0105	6181	0.9900
2018	20697	1.0087	2578	0.9997	191	0.9534	53	0.9751	9	1.1667	6205	1.0037
2019	20873	1.0085	2587	1.0036	194	1.0171	50	0.9527	9	0.9643	6280	1.0122
2020	21064	1.0091	2610	1.0089	183	0.9467	50	0.9934	9	0.9907	6285	1.0009
2021	21279	1.0102	2622	1.0047	182	0.9900	50	0.9950	8	0.9439	6283	0.9996
2022	21510	1.0109	2654	1.0121	171	0.9413	49	0.9849	8	1.0000	6283	1.0000
Geomean		*1.0085*		*1.0067*		*0.9501*		*0.9814*		*0.9946*		*1.0049*
2023	21694		2672		162		48		8		6314	
2024	21879		2690		154		47		8		6345	

3.1.6 Accuracy and Variance Analysis of the Customer/Connection Forecast

Table 23 – Customer Count Variance Analysis

	Residential	GS < 50 kW	GS > 50 to 4999 kW	USL	Sentinel	Streetlights
	Customers	Customers	Customers	Customers	Customers	Connections
2018 BA	20749	2593	193	53	8	6196
2018	20697	2578	191	53	9	6205
2019	20873	2587	194	50	9	6280
2020	21064	2610	183	50	9	6285
2021	21279	2622	182	50	8	6283
2022	21510	2654	171	49	8	6283
2023	21694	2672	162	48	8	6314
2024	21879	2690	154	47	8	6345
Year over Year Variance						
2018	-52	-15	-3	0	1	9
2019	176	9	3	-3	0	75
2020	190	23	-10	0	0	6
2021	216	12	-2	0	-1	-2
2022	231	32	-11	-1	0	0
Total	**761**	**61**	**-22**	**-4**	**0**	**87**
2023	183	18	-9	-1	0	31
2024	185	18	-8	-1	0	31
Total	**369**	**36**	**-17**	**-2**	**0**	**62**

As shown in the table above, the growth in customer count has increased slowly and steadily for the Residential Class. The projected growth of 183 residential customers for the bridge year and 185 residential customers for the test year is in line with actual projections from the utility. The General Service <50kW has seen an overall modest increase and the GS50-4999kW has seen a steady decline in customers. The projections for both the GS classes are in line with the historical trend.

The other classes have not seen any significant changes since the last Cost of Service.

3.2 CDM ADJUSTMENT TO LOAD FORECAST

3.2.1 CDM Adjustments

WPI's persisting effects of CDM projects are embedded in the utility wholesale; therefore, no adjustment was made to the load forecast to account for CDM.

WPI confirms that it was not contractually obligated to complete programs delivered by the distributor after April 2019. WPI is not planning for or aware of any new CDM programs initiated in the Test Year (2024). Consequently, no manual CDM adjustment is required for the Load Forecast.