EXHIBIT 3: LOAD FORECAST

2024 Cost of Service

InnPower Corporation
EB-2023-0033

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OEB Chapter 2 Filing Requirements: Heading/Sub-Heading		**InnPower Corporation Application: Heading/Sub-Heading**	
2.3	**Exhibit 3: Customer and Load Forecast**	**3.0**	**Exhibit 3: Customer and Load Forecast**
2.3.1	Load Forecasts	3.1.1	Load Forecast
2.3.1.1	Multivariate Regression Analysis	3.1.1	Load Forecast
2.3.1.2	Normalized Average Use per Customer Model	3.1.1	Load Forecast
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2.3.2	Accuracy of Load Forecast and Variance Analysis	3.1.2	Accuracy of Load Forecast and Variance Analysis

3-1-1 LOAD FORECAST

1. INTRODUCTION

This Exhibit presents details of InnPower Corporation's ("InnPower") historical operating revenue from its last Cost of Service ("COS") in 2017 (EB-2016-0085) up to the end of 2022, as well as presenting forecast operating revenues for the 2023 Bridge and 2024 Test Years. The Exhibit goes on to explain the approach to forecasting load and customer/connection growth for the 2023 and 2024 Test Years, consistent with the approach taken by InnPower in its 2017 COS. Finally, the Exhibit provides an Accuracy of Load Forecast and Variance Analysis, which assesses year-over-year variances in revenues, customers/connections, and load from 2017 through the 2024 Test Year.

InnPower is proposing a total Service Revenue Requirement of $16,216,303, which is inclusive of $1,683,551 in Other Revenue and a Base Revenue Requirement of $14,532,752. The following Table 3-1 summarizes InnPower's total operating revenue, drawing data from InnPower's audited financial statements. The 2024 Test Year is presented both at current approved rates for 2023, and at proposed rates for 2024.

Table 3-1: Summary of Operating Revenue

Distribution Throughput Revenue	2017 Board Approved	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Bridge	2024 Test at Current Rates	2024 Test at Proposed Rates
Residential	8,064,052	7,367,770	8,572,644	9,054,177	9,411,642	9,991,023	10,538,053	11,173,664	11,526,164	11,867,968
General Service < 50 kW	835,151	762,772	892,517	964,496	997,173	1,038,449	1,133,563	1,213,810	1,248,674	1,285,684
General Service 50 to 4,999 kW	958,338	737,458	938,165	941,780	903,473	914,305	943,319	934,471	934,294	1,070,134
Sentinel Lights	43,848	39,579	43,622	44,016	43,892	43,960	44,388	45,234	44,690	31,836
Street Lights	194,479	302,890	220,413	218,124	237,577	261,518	287,725	311,179	323,333	241,806
Unmetered Scattered Loads	21,269	19,187	21,335	22,016	18,859	21,026	22,065	23,052	22,876	20,780
Embedded Distributor	-	-	-	-	-	-	-	-	14,125	14,545
Total Distribution	**10,117,137**	**9,229,655**	**10,688,697**	**11,244,610**	**11,612,614**	**12,270,280**	**12,969,113**	**13,701,411**	**14,114,157**	**14,532,752**
Specific Service Charges	170,000	106,848	161,691	140,414	115,277	163,460	632,823	89,633	86,876	86,876
Late Payment Charges	111,252	106,918	105,419	89,306	117,181	97,512	113,621	139,200	139,200	139,200
Other Distribution/Operating Revenues	783,220	11,066	11,616	14,909	15,344	16,757	79,292	90,230	94,086	94,086
Other Income or Deductions	30,000	12,763	1,315,258	1,471,146	806,860	684,739	641,484	1,245,696	1,363,389	1,363,389
Total	**1,094,472**	**237,596**	**1,593,984**	**1,715,776**	**1,054,661**	**962,468**	**1,467,220**	**1,564,759**	**1,683,551**	**1,683,551**
Grand Total	**11,211,609**	**9,467,251**	**12,282,680**	**12,960,385**	**12,667,276**	**13,232,748**	**14,436,333**	**15,266,169**	**15,797,708**	**16,216,303**

2. SUMMARY OF LOAD AND CUSTOMER/CONNECTION FORECAST

2.1 Load and Revenue Forecasts

The purpose of this evidence is to present the process used by InnPower to prepare the weather normalized load and customer/connection forecast used to design the proposed 2024 Test Year distribution rates.

InnPower has filed the 2024 Load Forecast as Appendix 3-1-1 (A) and the 2024 Demand Data Model as Appendix 3-1-1 (D).

In summary, InnPower used the same regression analysis methodology approved by the Ontario Energy Board (the "OEB" or "Board") in InnPower's 2017 COS application. The regression analysis has been updated to include actual data to the end of 2022 and uses the same variables as those in InnPower's 2017 COS application.

With regards to the overall process of load forecasting InnPower is of the view that conducting a regression analysis on historical electricity purchases to produce an equation that will predict purchases is appropriate. InnPower has data regarding the amount of electricity (in kWh) purchased from the IESO for use by its customers. Utilizing a regression analysis, these purchases can be related to other monthly explanatory variables, producing an equation that predicts the purchases based on the explanatory variables. This prediction model is then used as the basis to forecast the total level of weather normalized purchases for the Bridge and Test Years, which is converted to billed kWh by rate class. A detailed explanation of this process is provided in this evidence.

Based on the OEB's approval of this methodology in InnPower's last COS application, in addition to the OEB's approval of this same method in recent COS applications of other applicants, InnPower submits the load forecasting methodology is reasonable for the purposes of this Application. The following materials support the weather normalized load forecast used by InnPower in this Application.

Table 3-2, Table 3-3 and Table 3-4 below provide a summary of the weather normalized load and customer/connection forecast used in this Application. This is also filed in Appendix 3-1-1 (B) OEB Appendix 2-IB.

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

Year	Billed Actual (GWh)	Growth (GWh)	Billed Weather Normal (GWh)	Growth (GWh)	Customer/ Connection Count	Growth
Billed Energy (GWh) and Customer Count / Connections						
2017 Board Approved	242.6				19,906	
2013	234.0		236.1		18,286	
2014	236.1	2.1	237.7	1.6	18,736	450
2015	239.4	3.3	241.2	3.5	19,073	337
2016	243.1	3.7	239.0	(2.2)	19,398	325
2017	242.3	(0.8)	247.1	8.1	19,957	559
2018	263.5	21.2	257.8	10.7	20,996	1039
2019	270.1	6.6	270.4	12.5	22,042	1045
2020	275.9	5.8	274.1	3.8	22,460	418
2021	278.4	2.5	280.3	6.2	23,343	883
2022	283.5	5.2	282.6	2.3	24,316	974
2023 Bridge	288.2	4.7	288.2	5.6	25,102	786
2024 Test	295.1	6.9	295.1	6.9	25,914	812

In the above Table 3-2, the billed GWh data from 2013 to 2022 reflects actual weather and weather normal conditions in each year. The weather normal values are the actual values adjusted by the weather normal conversion factor outlined in Table 3-6. The weather conversion factor is determined consistent with the approach outlined by the OEB in Appendix 2-IA. For 2023 and 2024, the forecasted billed GWh is presented on a weather normal basis.

Customer/Connection values are presented on an average basis throughout this evidence for the purpose of rate design, and sentinel lights, street lights and unmetered loads are measured as connections.

Table 3-3 provides the historical billed amounts on an actual and weather normalized basis by rate class using the weather normal conversion factor from Table 3-6. The forecasted billed amounts for 2023 and 2024 are also provided by rate class.

Table 3-3: Billed Energy by Rate Class

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
Billed Energy (GWh) - Actual								
2013	149.7	31.1	50.1	0.1	1.5	0.5	1.0	234.0
2014	150.8	32.3	49.9	0.1	1.5	0.5	1.0	236.1
2015	149.3	33.7	53.8	0.1	1.0	0.5	1.0	239.4
2016	150.1	33.6	57.3	0.1	0.5	0.5	0.9	243.1
2017	145.3	32.8	62.2	0.1	0.6	0.5	0.9	242.3
2018	160.9	36.0	64.4	0.1	0.6	0.5	1.0	263.5
2019	161.3	42.5	64.2	0.1	0.7	0.5	0.9	270.1
2020	175.0	39.9	58.9	0.1	0.7	0.4	0.9	275.9
2021	178.5	40.5	57.2	0.1	0.8	0.4	0.9	278.4
2022	181.8	44.0	55.4	0.1	0.8	0.4	0.9	283.5
Billed Energy (GWh) - Weather Normal								
2017 Board Approved	145.8	31.8	63.8	0.1	0.6	0.5	N/A	242.6
2013	151.0	31.4	50.5	0.1	1.5	0.5	1.0	236.1
2014	151.9	32.5	50.2	0.1	1.5	0.5	1.0	237.7
2015	150.4	34.0	54.2	0.1	1.0	0.5	1.0	241.2
2016	147.6	33.0	56.4	0.1	0.5	0.5	0.9	239.0
2017	148.1	33.4	63.4	0.1	0.6	0.5	0.9	247.1

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
2018	157.4	35.3	63.0	0.1	0.6	0.5	1.0	257.8
2019	161.5	42.5	64.2	0.1	0.7	0.5	0.9	270.4
2020	173.8	39.6	58.5	0.1	0.7	0.4	0.9	274.1
2021	179.7	40.8	57.6	0.1	0.8	0.4	0.9	280.3
2022	181.3	43.8	55.3	0.1	0.8	0.4	0.9	282.6
2023 Bridge	185.3	44.7	55.9	0.1	0.8	0.4	0.9	288.2
2024 Test	190.2	45.9	56.7	0.1	0.9	0.4	0.9	295.1

Table 3-4 shows the historical and forecasted number of customers/connections by rate class along with the historical usage per customer/connection on an actual and weather normalized basis. The 2023 and 2024 forecasted usage per customer/connection is also provided on a weather normalized basis.

1 **Table 3-4: Number of Customers/Connections and Annual Usage by Rate Class**

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
Number of Customers/Connections								
2017 Board Approved	15,555	1,034	88	161	2,995	74	N/A	19,906
2013	14,181	949	66	168	2,843	78	1	18,286
2014	14,509	991	66	169	2,923	76	1	18,736
2015	14,862	1,001	71	166	2,898	76	1	19,073
2016	15,202	1,016	75	166	2,863	75	1	19,398
2017	15,632	1,030	86	162	2,973	74	1	19,957
2018	16,491	1,082	90	162	3,097	74	1	20,996
2019	17,294	1,121	84	160	3,307	75	1	22,042
2020	17,583	1,154	79	155	3,414	73	1	22,460
2021	18,253	1,191	77	153	3,597	71	1	23,343
2022	18,755	1,246	77	151	4,014	72	1	24,316
2023 Bridge	19,346	1,284	79	149	4,171	72	1	25,102
2024 Test	19,957	1,324	80	147	4,334	71	1	25,914
Actual Annual Energy Usage per Customer/Connection (kWh per customer/connection)								
2013	10,555	32,809	759,003	673	526	6,110	992,177	
2014	10,396	32,588	753,682	653	518	6,165	981,163	
2015	10,047	33,711	762,954	654	351	6,093	971,543	
2016	9,876	33,022	768,786	622	190	6,128	948,376	
2017	9,292	31,811	725,922	642	193	6,261	920,352	
2018	9,754	33,306	715,922	653	199	6,526	971,890	
2019	9,326	37,893	763,138	649	198	6,518	922,954	
2020	9,950	34,555	744,648	651	201	6,013	945,311	

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
2021	9,779	33,988	745,091	649	209	6,187	910,171	
2022	9,696	35,271	717,773	648	201	6,185	935,589	
Normalized Annual Energy Usage per Customer/Connection (kWh per customer/connection)								
2017 Board Approved	9,376	30,769	728,730	640	187	6,272	N/A	
2013	10,650	33,103	765,796	679	531	6,165	1,001,056	
2014	10,466	32,809	758,780	658	522	6,207	987,801	
2015	10,121	33,959	768,579	659	353	6,138	978,705	
2016	9,710	32,466	755,843	611	187	6,025	932,409	
2017	9,477	32,445	740,396	654	197	6,386	938,703	
2018	9,544	32,590	700,525	639	194	6,386	950,989	
2019	9,335	37,932	763,926	650	198	6,525	923,907	
2020	9,887	34,335	739,913	647	200	5,975	939,301	
2021	9,847	34,224	750,270	654	210	6,230	916,498	
2022	9,665	35,160	715,503	646	200	6,165	932,631	
2023 Bridge	9,576	34,834	710,763	648	201	6,185	935,589	
2024 Test	9,531	34,672	708,167	648	201	6,185	935,589	

2.2 Forecast Methodology – Multivariance Regression Model

InnPower's weather normalized load forecast is developed through a three-step process. First, a total system weather normalized purchased energy forecast is developed based on a multivariate regression model that incorporates historical load, weather, and other variables that impact electricity usage. Second, the weather normalized purchased energy forecast is adjusted by a historical loss factor to produce a weather normalized billed energy forecast. Finally, the forecast of billed energy by rate class is developed based on a forecast of customer/connections numbers

and the 2022 usage patterns per customer/connection. For the rate classes that have weather sensitive load their forecasted billed energy is adjusted to ensure that the total billed energy forecast by rate class is equivalent to the total weather normalized billed energy forecast that has been determined from the regression analysis. The forecast of customers by rate class is determined using a geometric mean analysis. For those rate classes that use kW for the distribution volumetric billing determinant, an adjustment factor is applied to the class energy forecast based on the historical relationship between kW and kWh. The following will explain the forecasting process in more detail.

2.3 Purchased kWh Load Forecast

An equation to predict total system purchased energy is developed using a multivariate regression model with the independent variables outlined below. The regression model uses monthly kWh and monthly values of independent variables from January 2013 to December 2022 to determine the monthly regression coefficients.

With regards to weather normalization, InnPower submits that it is appropriate to review the impact of weather over the past ten years, January 2013 to December 2022, since it is consistent with a time period outlined in the filing requirements and it is reflective of recent weather conditions. The average weather conditions over this period are applied in the prediction formula to determine a weather normalized forecast for 2024.

Consistent with InnPower's 2017 COS, the multivariate regression model has determined the drivers of year-over-year changes in InnPower's load growth are: weather (heating and cooling degree days), days in month, spring/fall flag[1], and the number of customers in the Residential, GS <50kW, GS 50 to 4,999kW and Embedded Distributor rate classes. These factors are captured within the regression model. InnPower did not include a variable for Conservation and Demand Management (CDM), nor were any explicit CDM adjustments made to the forecast.

[1] A variable which identifies spring or fall months in a calendar year and helps to capture energy use impacted by these seasons

The following outlines the predication model used by InnPower to predict weather normal purchases for the 2024 Test Year.

InnPower Monthly Predicted kWh Purchases:

= Heating Degree Days * 12,782
+ Cooling Degree Days * 47,513
+ Number of Days in the Month * 631,822
+ Spring/Fall Flag * (639,386)
+ Number of Customers[2] * 858
+ Constant of (16,791,617)

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

The sources of historical data from 2013 through 2022 for the various data points are:

a) Environment Canada website for monthly heating degree day and cooling degree information. Weather data was obtained from the Toronto Pearson International Airport. 18°C is the base temperature from which heating degree days and cooling degree days are calculated.
b) Calendar-based number of days in the month and identification of the spring/fall flag.
c) The number of customers in the Residential, GS <50kW, GS 50 to 4,999kW, and Embedded Distributor rate classes is based on average annual historical actuals from 2013 to 2022.

The prediction formula has the following statistical results which generally indicate the formula has a very good fit to the actual data set.

[2] In Residential, GS <50kW, GS 50 to 4,999kW and Embedded Distributor rate classes

Table 3-5: Statistical Results

R Square	96.7%
Adjusted R Square	96.5%
F Test	658
MAPE (Monthly)	1.9%
T-stats by Coefficient	
Heating Degree Days	(8.2)
Cooling Degree Days	38.6
Days in Month	27.3
Spring Fall Flag	9.6
Number of Customers	27.7
Constant	(8.2)

The annual results of the above prediction formula compared to the actual annual purchases from 2013 to 2022 are shown below in Table 3-6, along with the predicted total system purchases for InnPower for 2023 and 2024 on a weather normal basis. Information is also provided to show the Weather Normal Conversion Factor which is used to weather normalize actual 2013 to 2022 volume data. In Table 3-6, the Predicted Weather Normal values are similar to the Predicted amounts, but the weather normalized heating degree days and cooling degree days used to determine the weather normal forecast for 2023 and 2024 are used in the prediction formula in place of actual heating degree days and cooling degree days. The ratio of Predicted Weather Normal to Predicted values results in a Weather Normal Conversion Factor. This factor is applied to the Actual amount which results in the Actual Weather Normal value.

Table 3-6: Total System Purchases Including Wholesale Market Participants

Year	Actual	Predicted	% Difference	Predicted Weather Normal	Weather Normal Conversion Factor	Actual Weather Normal
Purchased Energy (GWh)						
2013	251.8	246.9	(1.9%)	249.1	1.0089	254.0
2014	253.3	251.3	(0.8%)	253.0	1.0068	255.0
2015	255.8	254.9	(0.4%)	256.7	1.0074	257.7
2016	259.4	265.5	2.4%	261.1	0.9832	255.0
2017	256.8	259.9	1.2%	265.1	1.0199	261.9
2018	278.8	280.6	0.6%	274.5	0.9785	272.8
2019	280.6	282.9	0.8%	283.2	1.0010	280.9
2020	291.4	288.9	(0.9%)	287.1	0.9936	289.6
2021	295.2	291.7	(1.2%)	293.7	1.0070	297.3
2022	299.9	300.4	0.1%	299.4	0.9968	299.0
2023 Bridge		305.9		305.9	1.0000	
2024 Test		313.3		313.3	1.0000	

The weather normalized amount for 2024 is determined by using 2024 dependent variables in the prediction formula on a monthly basis along with the average monthly heating degree days and cooling degree days which have occurred from January 2013 to December 2022 (i.e., 10 years).

2.4 Billed kWh Load Forecast

To determine the total weather normalized energy billed forecast, the total system weather normalized purchases forecast is adjusted by a historical loss factor. The historical loss factor used is 6.16% which represents the average loss factor from 2013 to 2022. With this average loss factor the total weather normalized billed energy before adjustment discussed below will be 288.2 (GWh) for 2023 (i.e., 305.9/1.0616) and 295.1 (GWh) for 2024 (i.e., 313.3/1.0616).

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

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

The next step in the forecasting process is to determine a customer/connection forecast. The customer/connection forecast is based on reviewing historical customer/connection data that is available as shown in the following Table 3-7.

Table 3-7: Historical Customers/Connections (Average)

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
Number of Customers/Connections								
2013	14,181	949	66	168	2,843	78	1	18,286
2014	14,509	991	66	169	2,923	76	1	18,736
2015	14,862	1,001	71	166	2,898	76	1	19,073
2016	15,202	1,016	75	166	2,863	75	1	19,398
2017	15,632	1,030	86	162	2,973	74	1	19,957
2018	16,491	1,082	90	162	3,097	74	1	20,996
2019	17,294	1,121	84	160	3,307	75	1	22,042
2020	17,583	1,154	79	155	3,414	73	1	22,460
2021	18,253	1,191	77	153	3,597	71	1	23,343
2022	18,755	1,246	77	151	4,014	72	1	24,316

From the historical customer/connection data the growth rate in customers/connections can be evaluated, which is provided in Table 3-8.

Table 3-8: Growth Rate in Customer/Connections

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor
Growth Rate in Customers/Connections							
2013							
2014	2.3%	4.4%	0.3%	0.8%	2.8%	(2.6%)	0.0%
2015	2.4%	0.9%	6.5%	(2.2%)	(0.9%)	0.6%	0.0%
2016	2.3%	1.6%	5.8%	0.2%	(1.2%)	(0.9%)	0.0%
2017	2.8%	1.4%	14.9%	(2.6%)	3.8%	(2.4%)	0.0%
2018	5.5%	5.0%	5.1%	(0.2%)	4.2%	0.7%	0.0%
2019	4.9%	3.6%	(6.6%)	(1.0%)	6.8%	0.7%	0.0%
2020	1.7%	2.9%	(5.9%)	(3.0%)	3.3%	(1.8%)	0.0%
2021	3.8%	3.2%	(3.0%)	(1.5%)	5.3%	(3.0%)	0.0%
2022	2.7%	4.6%	0.7%	(1.4%)	11.6%	2.0%	0.0%
Geometric Mean	**3.2%**	**3.1%**	**1.8%**	**(1.2%)**	**3.9%**	**(0.8%)**	**0.0%**

The growth factor resulting from the geometric mean analysis from 2013 to 2022 is applied to the 2022 customer numbers to determine the forecast of customer/connections for 2023. The factor is then applied again to the 2023 forecast to determine the 2024 forecast. Table 3-9 outlines the forecast of customers/connections by rate class for the 2023 Bridge Year and 2024 Test Year.

Table 3-9: Customer/Connection Forecast

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
Forecast Number of Customers/Connections								
2023 Bridge	19,346	1,284	79	149	4,171	72	1	25,102
2024 Test	19,957	1,324	80	147	4,334	71	1	25,914

The next step in the process is to review the historical customer/connection usage and to reflect this usage per customer in the forecast. Table 3-10 below provides the average annual usage per customer by rate class for 2022.

Table 3-10: 2022 Actual Annual Usage per Customer

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor
Annual kWh Usage Per Customer/Connection							
2022	9,696	35,271	717,773	648	201	6,185	935,589

The 2023 and 2024 forecast of usage per customer/connection have been held constant at the 2022 level since the usage per customer/connection has generally been declining in most rate classes since 2013. The resulting usage forecast is as follows in Table 3-11.

Table 3-11: Forecast Annual kWh Usage per Customer/Connection

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor
Forecast Annual kWh Usage per Customers/Connection							
2023 Bridge	9,696	35,271	717,773	648	201	6,185	935,589
2024 Test	9,696	35,271	717,773	648	201	6,185	935,589

The preceding information is used to determine the non-normalized weather billed energy forecast by applying the forecast number of customer/connection from Table 3-9 by the forecast of annual usage per customer/connection from Table 3-11. The resulting non-normalized weather billed energy forecast is shown in the following Table 3-12.

Table 3-12: Non-Normalized Weather Billed Energy Forecast

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
NON-normalized Weather Billed Energy Forecast (GWh)								
2023 Bridge	187.6	45.3	56.4	0.1	0.8	0.4	0.9	291.6
2024 Test	193.5	46.7	57.4	0.1	0.9	0.4	0.9	300.0

The non-normalized weather billed energy forecast has been determined, but this needs to be adjusted in order to be aligned with the total weather normalized billed energy forecast mentioned above of 288.2 (GWh) for 2023 and 295.1 (GWh) for 2024.

The difference between the non-normalized and normalized forecast is assumed to be the adjustment to move the forecast to a weather normal basis, and this amount will be assigned to those rate classes that are weather sensitive. Based on the weather normalization work

completed by Hydro One for 2004 informing the original cost allocation informational study it was determined that the weather sensitivity by rate classes is as presented in Table 3-13. The values in the table are consistent with the rate class weather sensitivity percentages used in InnPower's 2017 COS application.

Table 3-13: Weather Sensitivity by Rate Class

Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor
Weather Sensitivity						
83%	83%	65%	0%	0%	0%	0%

The difference between the non-normalized and normalized forecast has been assigned on a pro rata basis to each rate class based on the above level of weather sensitivity. The following Table 3-14 outlines how the classes have been adjusted to align the non-normalized forecast with the normalized forecast.

Table 3-14: Alignment of Non-normal to Weather Normal Forecast

Year	Residential	General Service < 50 kW	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Unmetered Scattered Loads	Embedded Distributor	Total
Non-normalized Weather Billed Energy Forecast (GWh)								
2023 Bridge	187.6	45.3	56.4	0.1	0.8	0.4	0.9	291.6
2024 Test	193.5	46.7	57.4	0.1	0.9	0.4	0.9	300.0
Weather Adjustment (GWh)								
2023 Bridge	(2.3)	(0.6)	(0.6)	0.0	0.0	0.0	0.0	(3.4)
2024 Test	(3.3)	(0.8)	(0.8)	0.0	0.0	0.0	0.0	(4.8)
Weather Normalized Billed Energy Forecast (GWh)								
2023 Bridge	185.3	44.7	55.9	0.1	0.8	0.4	0.9	288.2
2024 Test	190.2	45.9	56.7	0.1	0.9	0.4	0.9	295.1

2.6 Billed kW Load Forecast

There are a number of InnPower customers/connections that are charged volumetric distribution on a per kW basis.

For the GS 50 to 4,999 kW, Sentinel Lights, Street Lights and Embedded Distributor rate classes, the energy forecast needs to be converted to a kW basis for rate setting purposes. To accomplish this conversion, the 10-year average ratio of kW to kWh from 2013 through 2022 is applied to the forecasted kWh to produce the required kW for 2023 and 2024.

The following Table 3-15 outlines the average ratio of kW to kWh for each rate class from 2013 through 2022.

Table 3-15: 10-Year Average kW/KWh Ratio per Applicable Rate Class

Year	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Embedded Distributor
Ratio of kW to kWh				
2013	0.2832%	0.2720%	0.3029%	0.2549%
2014	0.2719%	0.2720%	0.3031%	0.2423%
2015	0.2653%	0.2646%	0.2840%	0.2525%
2016	0.2637%	0.2857%	0.3024%	0.2529%
2017	0.2625%	0.2778%	0.3054%	0.2481%
2018	0.2617%	0.2778%	0.3036%	0.2577%
2019	0.2558%	0.2778%	0.3033%	0.2368%
2020	0.2608%	0.2778%	0.3023%	0.2498%
2021	0.2761%	0.2778%	0.3035%	0.2592%
2022	0.2838%	0.2778%	0.3045%	0.2629%
Average	**0.2685%**	**0.2761%**	**0.3015%**	**0.2517%**

The following Table 3-16 outlines the forecast of kW for the applicable rate classes which reflects the ratio in Table 3-15 being applied to the results in Table 3-14.

Table 3-16: kW Forecast by Applicable Rate Class

Year	General Service 50 to 4,999 kW	Sentinel Lights	Street Lights	Embedded Distributor	Total
Predicted Billed kW					
2023 Bridge	150,019	266	2,524	2,355	155,164
2024 Test	152,108	263	2,623	2,355	157,348

Table 3-17 below provides a summary of the load forecast on a billing determinant basis by rate class.

Table 3-17: Summary of Total Load Forecast

	2017 Board Aprroved	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 Actual	2022 Actual	2023 Bridge Weather Normal	2024 Test Weather Normal
Purchases									
Actual kWh Purchases		256,769,435	278,813,236	280,581,537	291,404,252	295,240,254	299,934,504		
Predicted kWh	260,606,828	259,940,797	280,582,121	282,875,317	288,894,081	291,664,577	300,376,333	305,924,901	313,272,247
% Difference between actual and predicted purchases		1.2%	0.6%	0.8%	(0.9%)	(1.2%)	0.1%		
Loss Factor								1.0616	1.0616
Total Billed	242,564,957	242,272,213	263,499,384	270,098,352	275,892,822	278,373,132	283,532,336	288,185,871	295,107,182
Billing Determinants									
Residential									
Customers	15,555	15,632	16,491	17,294	17,583	18,253	18,755	19,346	19,957
kWh	145,847,424	145,250,461	160,853,753	161,284,520	174,957,600	178,499,709	181,843,663	185,255,263	190,211,161
General Service < 50 kW									
Customers	1,034	1,030	1,082	1,121	1,154	1,191	1,246	1,284	1,324
kWh	31,828,340	32,775,442	36,037,382	42,480,663	39,873,537	40,487,961	43,953,859	44,741,760	45,901,003
General Service 50 to 4,999 kW									
Customers	88	86	90	84	79	77	77	79	80
kWh	63,763,903	62,187,312	64,432,939	64,167,170	58,889,236	57,185,700	55,447,968	55,875,121	56,653,142
kW	176,744	163,230	168,619	164,137	153,609	157,905	157,378	150,019	152,108
Sentinel Lights									
Connections	161	162	162	160	155	153	151	149	147
kWh	103,052	103,849	105,460	103,805	100,969	99,206	97,587	96,414	95,254
kW	286	288	293	288	280	276	271	266	263
Street Lights									
Connections	2,995	2,973	3,097	3,307	3,414	3,597	4,014	4,171	4,334
kWh	561,223	574,600	615,046	653,653	686,202	751,138	805,782	837,252	869,952
kW	1,599	1,755	1,867	1,983	2,074	2,280	2,454	2,524	2,623
Unmetered Scattered Loads									
Connections	74	74	74	75	73	71	72	72	71
kWh	461,015	460,196	482,914	485,587	439,968	439,248	447,888	444,471	441,081
Embedded Distributor									
Connections	N/A	1	1	1	1	1	1	1	1
kWh	N/A	920,352	971,890	922,954	945,311	910,171	935,589	935,589	935,589
kW	N/A	2,284	2,504	2,185	2,362	2,359	2,460	2,355	2,355
Total									
Customer/Connections	19,906	19,957	20,996	22,042	22,460	23,343	24,316	25,102	25,914
kWh	242,564,957	242,272,213	263,499,384	270,098,352	275,892,822	278,373,132	283,532,336	288,185,871	295,107,182
kW	178,629	167,557	173,283	168,593	158,325	162,820	162,562	155,164	157,348

3-1-2 ACCURACY OF LOAD FORECAST AND VARIANCE ANALYSIS

The following discussion provides a year over year variance analysis of InnPower's distribution revenue and billing determinants. The variance analysis compares 2017 Board Approved Proxy to 2017 Actual; 2017 Actual to 2018 Actual; 2018 Actual to 2019 Actual; 2019 Actual to 2020 Actual; 2020 Actual to 2021; 2021 Actual to 2022 Actual; 2022 Actual to 2023 Bridge Year and 2023 Bridge Year to 2024 Test Year. The overall variance analysis has been provided based on InnPower's materiality of $73,000; the materiality calculation being noted earlier in Exhibit 1 of this Application.

2017 Board Approved to 2017 Actual

Table 3-18 compares distribution revenues for the 2017 Board Approved Proxy to 2017 Actuals. Table 3-19 compares the billing determinants (customers/connections and volumes).

2017 Actual Distribution revenue was $887,482 lower than the 2017 Board Approved Proxy, principally due to InnPower's 2017 rates ultimately not taking effect until January 1, 2018. With the exception of the Street Lights rate class, all customer classes experienced significant distribution revenue shortfalls relative to Board Approved distribution revenue. In contrast to distribution revenue variances, variances in billing determinants between 2017 Board Approved and 2017 Actual are minimal, with the exceptions being customer and volume shortfalls in the General Service 50 to 4,999kW class, and higher than forecast volumes in the Street Lights rate class.

Table 3-18: Distribution Revenue – 2017 Board-Approved vs 2017 Actual

Distribution Throughput Revenue	2017 Board Approved	2017 Actual	Difference ($)	Difference (%)
Residential	8,064,052	7,367,770	(696,282)	-8.6%
General Service < 50 kW	835,151	762,772	(72,379)	-8.7%
General Service 50 to 4,999 kW	958,338	737,458	(220,880)	-23.0%
Sentinel Lights	43,848	39,579	(4,269)	-9.7%
Street Lights	194,479	302,890	108,411	55.7%
Unmetered Scattered Loads	21,269	19,187	(2,082)	-9.8%
Total	10,117,137	9,229,655	(887,482)	-8.8%

Table 3-19: Billing Determinants - 2017 Board Approved vs 2017 Actual

Weather Normal Conversion Factor												1.0199
Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2017 Board Approved	2017 Actual		2017 Board Approved	2017 Actual	2017 Board Approved	2017 Actual	2017 Board Approved	2017 Actual	2017 Board Approved	2017 Actual
Residential	15,555	15,632	kWh	145,847,424	145,250,461	148,755,398	148,146,532	9,376	9,292	9,563	9,477
General Service < 50 kW	1,034	1,030	kWh	31,828,340	32,775,442	32,462,949	33,428,934	30,769	31,811	31,383	32,445
General Service 50 to 4,999 kW	88	86	kW	176,744	163,230	180,268	166,485	2,020	1,905	2,060	1,943
Sentinel Lights	161	162	kW	286	288	292	294	2	2	2	2
Street Lights	2,995	2,973	kW	1,599	1,755	1,631	1,790	1	1	1	1
Unmetered Scattered Loads	74	74	kWh	461,015	460,196	470,207	469,372	6,272	6,261	6,397	6,386
Total	19,906	19,956									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	77	0.5%	kWh	(596,963)	-0.4%	(608,865)	-0.4%	(84)	-0.9%	(86)	-0.9%
General Service < 50 kW	(4)	-0.4%	kWh	947,102	3.0%	965,985	3.0%	1,041	3.4%	1,062	3.4%
General Service 50 to 4,999 kW	(2)	-2.1%	kW	(13,514)	-7.6%	(13,783)	-7.6%	(115)	-5.7%	(117)	-5.7%
Sentinel Lights	1	0.5%	kW	2	0.8%	2	0.8%	0	0.2%	0	0.2%
Street Lights	(22)	-0.7%	kW	156	9.8%	159	9.8%	0	10.6%	0	10.6%
Unmetered Scattered Loads	-	0.0%	kWh	(819)	-0.2%	(835)	-0.2%	(11)	-0.2%	(11)	-0.2%
Total	50	0.3%									

2017 Actual to 2018 Actual

Table 3-20 compares distribution revenues for 2017 Actuals against 2018 Actuals. Table 3-21 compares the billing determinants (customers/connections and volumes).

2018 Actual distribution revenue was $10,688,697, or $1,459,042 higher than 2017 Actuals, principally explained by implementation of OEB-approved rates resulting from EB-2016-0085 effective January 1, 2018 and healthy customer growth. From 2017 to 2018 InnPower saw an increase in total customers / connections of 1,039, or 5.2%. In addition, comparing the 2017 and 2018 variances between Actual and Weather Normalized in Table 3-21 suggests that weather was also a contributing factor to the variance in distribution revenues between 2017 and 2018.

Table 3-20: Distribution Revenue - 2017 Actual vs 2018 Actual

Distribution Throughput Revenue	2017 Actual	2018 Actual	Difference ($)	Difference (%)
Residential	7,367,770	8,572,644	1,204,874	16.4%
General Service < 50 kW	762,772	892,517	129,745	17.0%
General Service 50 to 4,999 kW	737,458	938,165	200,708	27.2%
Sentinel Lights	39,579	43,622	4,043	10.2%
Street Lights	302,890	220,413	(82,477)	-27.2%
Unmetered Scattered Loads	19,187	21,335	2,149	11.2%
Total	9,229,655	10,688,697	1,459,042	15.8%

Table 3-21: Billing Determinants - 2017 Actual vs 2018 Actual

								Weather Normal Conversion Factor 2017				1.0199
								Weather Normal Conversion Factor 2018				0.9785
Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)		
	2017 Actual	2018 Actual		2017 Actual	2018 Actual	2017 Actual	2018 Actual	2017 Actual	2018 Actual	2017 Actual	2018 Actual	
Residential	15,632	16,491	kWh	145,250,461	160,853,753	148,146,532	157,394,486	9,292	9,754	9,477	9,544	
General Service < 50 kW	1,030	1,082	kWh	32,775,442	36,037,382	33,428,934	35,262,374	31,811	33,306	32,445	32,590	
General Service 50 to 4,999 kW	86	90	kW	163,230	168,619	166,485	164,993	1,905	1,874	1,943	1,833	
Sentinel Lights	162	162	kW	288	293	294	287	2	2	2	2	
Street Lights	2,973	3,097	kW	1,755	1,867	1,790	1,827	1	1	1	1	
Unmetered Scattered Loads	74	74	kWh	460,196	482,914	469,372	472,529	6,261	6,526	6,386	6,386	
Embedded Distributor	1	1	kW	2,284	2,504	2,329	2,450	2,284	2,504	2,329	2,450	
Total	19,957	20,996										
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**	
Residential	859	5.5%	kWh	15,603,293	10.7%	9,247,953	6.2%	462	5.0%	67	0.7%	
General Service < 50 kW	52	5.0%	kWh	3,261,940	10.0%	1,833,440	5.5%	1,496	4.7%	145	0.4%	
General Service 50 to 4,999 kW	4	5.1%	kW	5,388	3.3%	(1,492)	-0.9%	(32)	-1.7%	(110)	-5.7%	
Sentinel Lights	(0)	-0.2%	kW	4	1.5%	(8)	-2.6%	0	1.8%	(0)	-2.4%	
Street Lights	124	4.2%	kW	112	6.4%	37	2.1%	0	2.1%	(0)	-2.0%	
Unmetered Scattered Loads	1	0.7%	kWh	22,718	4.9%	3,157	0.7%	265	4.2%	(0)	0.0%	
Embedded Distributor	-	0.0%	kW	221	9.7%	121	5.2%	221	9.7%	121	5.2%	
Total	1,039	5.2%										

2018 Actual to 2019 Actual

Table 3-22 compares distribution revenues for 2018 Actuals against 2019 Actuals. Table 3-23 compares the billing determinants (customers/connections and volumes).

2019 Actual distribution revenue was $11,244,610 or $555,913 higher than 2018 Actuals, principally explained by higher revenue in the residential and GS <50 kW customer classes. As seen in Tables 3-22 and 3-23, distribution revenue growth from 2018 to 2019 is closely aligned with growth in the number of residential customers and the growth in the total number of customers / connections; showing year over year increases of 4.9% and 5.0%, respectively.

Table 3-22: Distribution Revenue - 2018 Actual vs 2019 Actual

Distribution Throughput Revenue	2018 Actual	2019 Actual	Difference ($)	Difference (%)
Residential	8,572,644	9,054,177	481,533	5.6%
General Service < 50 kW	892,517	964,496	71,979	8.1%
General Service 50 to 4,999 kW	938,165	941,780	3,614	0.4%
Sentinel Lights	43,622	$ 44,016.30	394	0.9%
Street Lights	220,413	$218,123.97	(2,289)	-1.0%
Unmetered Scattered Loads	21,335	22,016	681	3.2%
Total	10,688,697	11,244,610	555,913	5.2%

Table 3-23: Billing Determinants - 2018 Actual vs 2019 Actual

Weather Normal Conversion Factor 2018	0.9785
Weather Normal Conversion Factor 2019	1.0010

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2018 Actual	2019 Actual		2018 Actual	2019 Actual	2018 Actual	2019 Actual	2018 Actual	2019 Actual	2018 Actual	2019 Actual
Residential	16,491	17,294	kWh	160,853,753	161,284,520	157,394,486	161,450,998	9,754	9,326	9,544	9,335
General Service < 50 kW	1,082	1,121	kWh	36,037,382	42,480,663	35,262,374	42,524,512	33,306	37,893	32,590	37,932
General Service 50 to 4,999 kW	90	84	kW	168,619	164,137	164,993	164,307	1,874	1,952	1,833	1,954
Sentinel Lights	162	160	kW	293	288	287	289	2	2	2	2
Street Lights	3,097	3,307	kW	1,867	1,983	1,827	1,985	1	1	1	1
Unmetered Scattered Loads	74	75	kWh	482,914	485,587	472,529	486,088	6,526	6,518	6,386	6,525
Embedded Distributor	1	1	kW	2,504	2,185	2,450	2,187	2,504	2,185	2,450	2,187
Total	20,996	22,042									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	804	4.9%	kWh	430,766	0.3%	4,056,512	2.6%	(428)	-4.4%	(209)	-2.2%
General Service < 50 kW	39	3.6%	kWh	6,443,281	17.9%	7,262,137	20.6%	4,586	13.8%	5,342	16.4%
General Service 50 to 4,999 kW	(6)	-6.6%	kW	(4,482)	-2.7%	(686)	-0.4%	79	4.2%	121	6.6%
Sentinel Lights	(2)	-1.0%	kW	(5)	-1.6%	2	0.7%	(0)	-0.6%	0	1.7%
Street Lights	210	6.8%	kW	115	6.2%	158	8.6%	(0)	-0.5%	0	1.7%
Unmetered Scattered Loads	1	0.7%	kWh	2,673	0.6%	13,560	2.9%	(8)	-0.1%	139	2.2%
Embedded Distributor	-	0.0%	kW	(319)	-12.7%	(263)	-10.7%	(319)	-12.7%	(263)	-10.7%
Total	1,045	5.0%									

2019 Actual to 2020 Actual

Table 3-24 compares distribution revenues for 2019 Actuals against 2020 Actuals. Table 3-25 compares the billing determinants (customers/connections and volumes).

2020 Actual distribution revenue was $11,612,614 or $368,005 higher than 2019 Actuals, with modest revenue growth in the Residential and GS <50kW classes balanced against reductions to the revenues of GS 50 to 4,999kW and Unmetered Scattered Load classes. The onset of the COVID-19 pandemic in 2020 is understood to have driven some of the trends seen in Table 3-25; notably positive variances in total and average volumes in the Residential class, and negative variances in total and average volumes in the GS <50kW and GS 50 to 4,999kW classes. Though the pace of growth in customers / connections in the Residential and GS <50kW classes was slowed in 2020 relative to past years, total customers still increased by 1.7% and 2.9%, respectively. Paired with a standard IRM adjustment, InnPower saw modest growth in distribution revenue in 2020 relative to 2019 Actuals.

Table 3-24: Distribution Revenue - 2019 Actual vs 2020 Actual

Distribution Throughput Revenue	2019 Actual	2020 Actual	Difference ($)	Difference (%)
Residential	9,054,177	9,411,642	357,464	3.9%
General Service < 50 kW	964,496	997,173	32,676	3.4%
General Service 50 to 4,999 kW	941,780	903,473	(38,307)	-4.1%
Sentinel Lights	44,016	43,892	(124)	-0.3%
Street Lights	218,124	237,577	19,453	8.9%
Unmetered Scattered Loads	22,016	18,859	(3,157)	-14.3%
Total	11,244,610	11,612,614	368,005	3.3%

Table 3-25: Billing Determinants - 2019 Actual vs 2020 Actual

Weather Normal Conversion Factor 2019	1.0010
Weather Normal Conversion Factor 2020	0.9936

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2019 Actual	2020 Actual		2019 Actual	2020 Actual	2019 Actual	2020 Actual	2019 Actual	2020 Actual	2019 Actual	2020 Actual
Residential	17,294	17,583	kWh	161,284,520	174,957,600	161,450,998	173,845,236	9,326	9,950	9,335	9,887
General Service < 50 kW	1,121	1,154	kWh	42,480,663	39,873,537	42,524,512	39,620,025	37,893	34,555	37,932	34,335
General Service 50 to 4,999 kW	84	79	kW	164,137	153,609	164,307	152,632	1,952	1,942	1,954	1,930
Sentinel Lights	160	155	kW	288	280	289	279	2	2	2	2
Street Lights	3,307	3,414	kW	1,983	2,074	1,985	2,061	1	1	1	1
Unmetered Scattered Loads	75	73	kWh	485,587	439,968	486,088	437,171	6,518	6,013	6,525	5,975
Embedded Distributor	1	1	kW	2,185	2,362	2,187	2,347	2,185	2,362	2,187	2,347
Total	22,042	22,460									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	289	1.7%	kWh	13,673,080	8.5%	12,394,238	7.7%	625	6.7%	552	5.9%
General Service < 50 kW	33	2.9%	kWh	(2,607,126)	-6.1%	(2,904,487)	-6.8%	(3,338)	-8.8%	(3,596)	-9.5%
General Service 50 to 4,999 kW	(5)	-5.9%	kW	(10,529)	-6.4%	(11,675)	-7.1%	(10)	-0.5%	(24)	-1.2%
Sentinel Lights	(5)	-3.0%	kW	(8)	-2.7%	(10)	-3.5%	0	0.3%	(0)	-0.4%
Street Lights	108	3.3%	kW	92	4.6%	76	3.9%	0	1.3%	0	0.6%
Unmetered Scattered Loads	(1)	-1.8%	kWh	(45,619)	-9.4%	(48,917)	-10.1%	(505)	-7.7%	(550)	-8.4%
Embedded Distributor	-	0.0%	kW	176	8.1%	159	7.3%	176	8.1%	159	7.3%
Total	418	1.9%									

2020 Actual to 2021 Actual

Table 3-26 compares distribution revenues for 2020 Actuals against 2021 Actuals. Table 3-27 compares the billing determinants (customers/connections and volumes).

2021 Actual distribution revenue was $12,270,280 or $657,666 higher than 2020 Actuals, marked by a return to Residential customer additions more akin to those of 2018 and 2019 than 2020, and modest increases in volumes across all rate classes save the Sentinel Lights, Unmetered Scattered Load, and Embedded Distributor classes.[1] As seen in Table 3-27 comparing the year-over-year variances between Actuals and Weather Normal, increased overall volumes were muted by weather in 2021.

[1] InnPower's proposed Embedded Distributor class did not exist as a separate rate class as of 2021, as it is a proposal included in this proceeding

Table 3-26: Distribution Revenue - 2020 Actual vs 2021 Actual

Distribution Throughput Revenue	2020 Actual	2021 Actual	Difference ($)	Difference (%)
Residential	9,411,642	9,991,023	579,382	6.2%
General Service < 50 kW	997,173	1,038,449	41,276	4.1%
General Service 50 to 4,999 kW	903,473	914,305	10,833	1.2%
Sentinel Lights	43,892	43,960	68	0.2%
Street Lights	237,577	261,518	23,941	10.1%
Unmetered Scattered Loads	18,859	21,026	2,166	11.5%
Total	11,612,614	12,270,280	657,666	5.7%

Table 3-27: Billing Determinants - 2020 Actual vs 2021 Actual

Weather Normal Conversion Factor 2020	0.9936
Weather Normal Conversion Factor 2021	1.0070

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2020 Actual	2021 Actual		2020 Actual	2021 Actual	2020 Actual	2021 Actual	2020 Actual	2021 Actual	2020 Actual	2021 Actual
Residential	17,583	18,253	kWh	174,957,600	178,499,709	173,845,236	179,740,541	9,950	9,779	9,887	9,847
General Service < 50 kW	1,154	1,191	kWh	39,873,537	40,487,961	39,620,025	40,769,411	34,555	33,988	34,335	34,224
General Service 50 to 4,999 kW	79	77	kW	153,609	157,905	152,632	159,003	1,942	2,057	1,930	2,072
Sentinel Lights	155	153	kW	280	276	279	277	2	2	2	2
Street Lights	3,414	3,597	kW	2,074	2,280	2,061	2,296	1	1	1	1
Unmetered Scattered Loads	73	71	kWh	439,968	439,248	437,171	442,301	6,013	6,187	5,975	6,230
Embedded Distributor	1	1	kW	2,362	2,359	2,347	2,376	2,362	2,359	2,347	2,376
Total	22,460	23,343									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	671	3.8%	kWh	3,542,110	2.0%	5,895,304	3.4%	(171)	-1.7%	(40)	-0.4%
General Service < 50 kW	37	3.2%	kWh	614,424	1.5%	1,149,386	2.9%	(567)	-1.6%	(111)	-0.3%
General Service 50 to 4,999 kW	(2)	-3.0%	kW	4,297	2.8%	6,371	4.2%	115	5.9%	142	7.3%
Sentinel Lights	(2)	-1.5%	kW	(5)	-1.7%	(1)	-0.4%	(0)	-0.2%	0	1.1%
Street Lights	182	5.3%	kW	206	9.9%	235	11.4%	0	4.3%	0	5.7%
Unmetered Scattered Loads	(2)	-3.0%	kWh	(720)	-0.2%	5,131	1.2%	173	2.9%	255	4.3%
Embedded Distributor	-	0.0%	kW	(2)	-0.1%	29	1.2%	(2)	-0.1%	29	1.2%
Total	883	3.9%									

2021 Actual to 2022 Actual

Table 3-28 compares distribution revenues for 2021 Actuals against 2022 Actuals. Table 3-29 compares the billing determinants (customers/connections and volumes).

2022 Actual distribution revenue was $12,969,113 or $698,833 higher than 2021 Actuals, marked by steady continued growth in the Residential customer class, and more notable customer growth in the GS <50kW customer class. The GS <50kW class in particular saw noticeable increases in volumes from 2021 to 2022, partially assisted by weather, and partially offset by a small decrease in volumes in the GS 50 to 4,999kW rate class.

Table 3-28: Distribution Revenue - 2021 Actual vs 2022 Actual

Distribution Throughput Revenue	2021 Actual	2022 Actual	Difference ($)	Difference (%)
Residential	9,991,023	10,538,053	547,030	5.5%
General Service < 50 kW	1,038,449	1,133,563	95,114	9.2%
General Service 50 to 4,999 kW	914,305	943,319	29,014	3.2%
Sentinel Lights	43,960	44,388	428	1.0%
Street Lights	261,518	287,725	26,208	10.0%
Unmetered Scattered Loads	21,026	22,065	1,039	4.9%
Total	12,270,280	12,969,113	698,833	5.7%

Table 3-29: Billing Determinants - 2021 Actual vs 2022 Actual

Weather Normal Conversion Factor 2021	1.0070
Weather Normal Conversion Factor 2022	0.9968

Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2021 Actual	2022 Actual		2021 Actual	2022 Actual	2021 Actual	2022 Actual	2021 Actual	2022 Actual	2021 Actual	2022 Actual
Residential	18,253	18,755	kWh	178,499,709	181,843,663	179,740,541	181,268,665	9,779	9,696	9,847	9,665
General Service < 50 kW	1,191	1,246	kWh	40,487,961	43,953,859	40,769,411	43,814,875	33,988	35,271	34,224	35,160
General Service 50 to 4,999 kW	77	77	kW	157,905	157,378	159,003	156,880	2,057	2,037	2,072	2,031
Sentinel Lights	153	151	kW	276	271	277	270	2	2	2	2
Street Lights	3,597	4,014	kW	2,280	2,454	2,296	2,446	1	1	1	1
Unmetered Scattered Loads	71	72	kWh	439,248	447,888	442,301	446,472	6,187	6,185	6,230	6,165
Embedded Distributor	1	1	kW	2,359	2,460	2,376	2,452	2,359	2,460	2,376	2,452
Total	23,343	24,316									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	501	2.7%	kWh	3,343,954	1.9%	1,528,124	0.9%	(83)	-0.8%	(182)	-1.8%
General Service < 50 kW	55	4.6%	kWh	3,465,899	8.6%	3,045,464	7.5%	1,283	3.8%	936	2.7%
General Service 50 to 4,999 kW	1	0.7%	kW	(528)	-0.3%	(2,123)	-1.3%	(20)	-1.0%	(41)	-2.0%
Sentinel Lights	(2)	-1.4%	kW	(4)	-1.6%	(7)	-2.6%	(0)	-0.3%	(0)	-1.3%
Street Lights	417	11.6%	kW	174	7.6%	150	6.5%	(0)	-3.6%	(0)	-4.5%
Unmetered Scattered Loads	1	2.0%	kWh	8,640	2.0%	4,170	0.9%	(2)	0.0%	(64)	-1.0%
Embedded Distributor	-	0.0%	kW	101	4.3%	77	3.2%	101	4.3%	77	3.2%
Total	974	4.2%									

2022 Actual to 2023 Bridge

Table 3-30 compares distribution revenues for 2022 Actuals against the 2023 Bridge Year. Table 3-31 compares the billing determinants (customers/connections and volumes).

2023 Bridge distribution revenue is forecast to be $13,701,411, or $732,297 higher than 2022 Actuals. The customer / connections and load forecast methodology described above informs a forecast which captures the continued healthy growth in the Residential and GS <50kW rate classes, both in terms of customers and volumes, balanced against volume decreases in the GS 50 to 4,999kW, Sentinel Lights, Unmetered Scattered Load and Embedded Distributor rate classes.

Table 3-30: Distribution Revenue - 2022 Actual vs 2023 Bridge

Distribution Throughput Revenue	2022 Actual	2023 Bridge	Difference ($)	Difference (%)
Residential	10,538,053	11,173,664	635,611	6.0%
General Service < 50 kW	1,133,563	1,213,810	80,247	7.1%
General Service 50 to 4,999 kW	943,319	934,471	(8,849)	-0.9%
Sentinel Lights	44,388	45,234	846	1.9%
Street Lights	287,725	311,179	23,454	8.2%
Unmetered Scattered Loads	22,065	23,052	987	4.5%
Total	12,969,113	13,701,411	732,297	5.6%

Table 3-31: Billing Determinants - 2022 Actual vs 2023 Bridge

								Weather Normal Conversion Factor 2022		0.9968	
Rate Class	Customers / Connections		Units	Volume		Volume (Wthr Nrml)		Annual Usage per Customer / Connection		Annual Usage per Customer / Connection (Wthr Nrml)	
	2022 Actual	2023 Bridge		2022 Actual	2023 Bridge	2022 Actual	2023 Bridge	2022 Actual	2023 Bridge	2022 Actual	2023 Bridge
Residential	18,755	19,346	kWh	181,843,663	185,255,262	181,268,665	185,255,262	9,696	9,576	9,665	9,576
General Service < 50 kW	1,246	1,284	kWh	43,953,859	44,741,760	43,814,875	44,741,760	35,271	34,834	35,160	34,834
General Service 50 to 4,999 kW	77	79	kW	157,378	150,019	156,880	150,019	2,037	1,908	2,031	1,908
Sentinel Lights	151	149	kW	271	266	270	266	2	2	2	2
Street Lights	4,014	4,171	kW	2,454	2,524	2,446	2,524	1	1	1	1
Unmetered Scattered Loads	72	72	kWh	447,888	444,471	446,472	444,471	6,185	6,185	6,165	6,185
Embedded Distributor	1	1	kW	2,460	2,355	2,452	2,355	2,460	2,355	2,452	2,355
Total	24,316	25,102									
Variance	**Count**	**%**		**Volume**	**%**	**Volume**	**%**	**Dollars**	**%**	**Dollars**	**%**
Residential	592	3.2%	kWh	3,411,599	1.9%	3,986,597	2.2%	(120)	-1.2%	(90)	-0.9%
General Service < 50 kW	38	3.1%	kWh	787,901	1.8%	926,885	2.1%	(437)	-1.2%	(326)	-0.9%
General Service 50 to 4,999 kW	1	1.8%	kW	(7,359)	-4.7%	(6,861)	-4.4%	(129)	-6.3%	(122)	-6.0%
Sentinel Lights	(2)	-1.2%	kW	(5)	-1.8%	(4)	-1.5%	(0)	-0.6%	(0)	-0.3%
Street Lights	157	3.9%	kW	71	2.9%	78	3.2%	(0)	-1.0%	(0)	-0.7%
Unmetered Scattered Loads	(1)	-0.8%	kWh	(3,417)	-0.8%	(2,000)	-0.4%	-	0.0%	20	0.3%
Embedded Distributor	-	0.0%	kW	(105)	-4.3%	(97)	-4.0%	(105)	-4.3%	(97)	-4.0%
Total	786	3.2%									

2023 Bridge to 2024 Test

Table 3-32 compares distribution revenues for the 2024 Test Year at existing 2023 rates against the 2023 Bridge Year. Table 3-33 compares distribution revenues for the 2024 Test Year at proposed rates against the 2023 Bridge Year. Table 3-34 compares the billing determinants (customers/connections and volumes).

Table 3-32 illustrates the impact of billing determinant changes between the 2023 Bridge Year and 2024 Test Year on distribution revenue, since distribution rates are held constant, while Table 3-33 illustrates both changes in billing determinants and implementation of proposed 2024 rates. The proposed Embedded Distributor rate class is included in the presentation of 2024 distribution revenues, while in the 2023 Bridge Year this rate class is included within the GS 50 to 4,999kW rate class.

Table 3-32: Distribution Revenue - 2023 Bridge vs 2024 Test at Current Rates

Distribution Throughput Revenue	2023 Bridge	2024 Test	Difference ($)	Difference (%)
Residential	11,173,664	11,526,164	352,499	3.2%
General Service < 50 kW	1,213,810	1,248,674	34,864	2.9%
General Service 50 to 4,999 kW	934,471	934,294	(177)	0.0%
Sentinel Lights	45,234	44,690	(544)	-1.2%
Street Lights	311,179	323,333	12,153	3.9%
Unmetered Scattered Loads	23,052	22,876	(176)	-0.8%
Embedded Distributor	-	14,125	14,125	N/A
Total	13,701,411	14,114,157	412,746	3.0%

Table 3-33: Distribution Revenue - 2023 Bridge vs 2024 Test at Proposed Rates

Distribution Throughput Revenue	2023 Bridge	2024 Test	Difference ($)	Difference (%)
Residential	11,173,664	11,867,968	694,304	6.2%
General Service < 50 kW	1,213,810	1,285,684	71,874	5.9%
General Service 50 to 4,999 kW	934,471	1,070,134	135,663	14.5%
Sentinel Lights	45,234	31,836	(13,398)	-29.6%
Street Lights	311,179	241,806	(69,374)	-22.3%
Unmetered Scattered Loads	23,052	20,780	(2,272)	-9.9%
Embedded Distributor	-	14,545	14,545	N/A
Total	13,701,411	14,518,207	816,797	6.0%

Table 3-34: Billing Determinants - 2023 Bridge vs 2024 Test

Rate Class	Customers / Connections		Units	Volume (Wthr Nrml)		Annual Usage per Customer / Connection (Wthr Nrml)	
	2023 Bridge	2024 Test		2023 Bridge	2024 Test	2023 Bridge	2024 Test
Residential	19,346	19,957	kWh	185,255,262	190,211,160	9,576	9,531
General Service < 50 kW	1,284	1,324	kWh	44,741,760	45,901,003	34,834	34,672
General Service 50 to 4,999 kW	79	80	kW	150,019	152,108	1,908	1,901
Sentinel Lights	149	147	kW	266	263	2	2
Street Lights	4,171	4,334	kW	2,524	2,623	1	1
Unmetered Scattered Loads	72	71	kWh	444,471	441,081	6,185	6,185
Embedded Distributor	1	1	kW	2,355	2,355	2,355	2,355
Total	25,102	25,914					
Variance	**Count**	**%**		**Volume**	**%**	**Dollars**	**%**
Residential	610	3.2%	kWh	4,955,898	2.7%	(45)	-0.5%
General Service < 50 kW	39	3.1%	kWh	1,159,243	2.6%	(162)	-0.5%
General Service 50 to 4,999 kW	1	1.8%	kW	2,089	1.4%	(7)	-0.4%
Sentinel Lights	(2)	-1.2%	kW	(3)	-1.2%	-	0.0%
Street Lights	163	3.9%	kW	99	3.9%	-	0.0%
Unmetered Scattered Loads	(1)	-0.8%	kWh	(3,390)	-0.8%	-	0.0%
Embedded Distributor	-	0.0%	kW	-	0.0%	-	0.0%
Total	812	3.2%					

List of Appendices

Appendix 3-1-1 (A)	2024 Load Forecast Model
Appendix 3-1-1 (B)	OEB Appendices 2-IB Load Forecast Analysis
Appendix 3-1-1 (C)	Monthly Data used in Regression Analysis
Appendix 3-1-1 (D)	2024 Demand Data Model

Appendix 3-1-1 (A) 2024 Load Forecast Model

InnPower Corporation has filed its 2024 Load Forecast Model separately in excel as Exhibit 3, Appendix 3-1-1 (A): 2024 Load Forecast Model.

Appendix 3-1-1 (B) OEB Appendices 2-IB Load Forecast Analysis

File Number: EB-2023-0033
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Tab:
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Appendix 2-IB
Customer, Connections, Load Forecast and Revenues Data and Analysis

Customer Numbers

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.

Costumers/Connections

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential	15,632	16,491	17,294	17,583	18,253	18,755	19,346	19,957
General Service < 50 kW	1,030	1,082	1,121	1,154	1,191	1,246	1,284	1,324
General Service >= 50 kW	86	90	84	79	76.75	77.25	78.61283137	79.99970558
Large User	-	-	-	-	-	-	-	-
Unmetered Scattered Load Connections	74	74	75	73	71	72.41666667	71.86426456	71.31607623
Sentinel Lighting Connections	162	162	160	155	152.75	150.6666667	148.854683	147.064491
Street Lighting Connections	2,973	3,097	3,307	3,414	3,597	4,014	4,171	4,334
Wholesale Market Participants	-	-	-	-	-	-	-	-
Embedded Distributor(s)	1	1	1	1	1	1	1	1
Sub Transmission Customers	-	-	-	-	-	-	-	-

Costumers/Connections Variance Analysis

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential		5%	5%	2%	4%	3%	3%	3%
General Service < 50 kW		5%	4%	3%	3%	5%	3%	3%
General Service >= 50 kW		5%	-7%	-6%	-3%	1%	2%	2%
Large User		0%	0%	0%	0%	0%	0%	0%
Unmetered Scattered Load Connections		1%	1%	-2%	-3%	2%	-1%	-1%
Sentinel Lighting Connections		0%	-1%	-3%	-2%	-1%	-1%	-1%
Street Lighting Connections		4%	7%	3%	5%	12%	4%	4%
Wholesale Market Participants		0%	0%	0%	0%	0%	0%	0%
Embedded Distributor(s)		0%	0%	0%	0%	0%	0%	0%
Sub Transmission Customers		0%	0%	0%	0%	0%	0%	0%

Consumption (Actual)

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential	145,250,461	160,853,753	161,284,520	174,957,600	178,499,709	181,843,663	185,255,262	190,211,161
General Service < 50 kW	32,775,442	36,037,382	42,480,663	39,873,537	40,487,961	43,953,859	44,741,760	45,901,003
General Service >= 50 kW	63,107,665	65,404,829	65,090,125	59,834,547	57,185,700	55,447,968	55,875,121	56,653,142
Large User	-	-	-	-	-	-	-	-
Unmetered Scattered Load Connections	460,196	482,914	485,587	439,968	439,248	450,604	444,471	441,081
Sentinel Lighting Connections	103,849	105,460	103,805	100,969	99,206	97,587	96,414	95,254
Street Lighting Connections	574,600	615,046	653,653	686,202	751,138	805,782	837,252	869,952
Wholesale Market Participants	-	-	-	-	-	-	-	-
Embedded Distributor(s)	920,352	971,890	922,954	945,311	910,171	935,589	935,589	935,589
Sub Transmission Customers	-	-	-	-	-	-	-	-

Consumption (Actual) Variance Analysis

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential		11%	0%	8%	2%	2%	2%	3%
General Service < 50 kW		10%	18%	-6%	2%	9%	2%	3%
General Service >= 50 kW		4%	0%	-8%	-4%	-3%	1%	1%
Large User		-	-	-	-	-	-	-
Unmetered Scattered Load Connections		5%	1%	-9%	0%	3%	-1%	-1%
Sentinel Lighting Connections		2%	-2%	-3%	-2%	-2%	-1%	-1%
Street Lighting Connections		7%	6%	5%	9%	7%	4%	4%
Wholesale Market Participants								
Embedded Distributor(s)		6%	-5%	2%	-4%	3%	0%	0%
Sub Transmission Customers								

Demand (Actual)

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential	-	-	-	-	0	0	0	0
General Service < 50 kW	-	-	-	-	0	0	0	0
General Service >= 50 kW	163,230	168,619	164,137	153,609	157,905	157,378	150,019	152,108
Large User	-	-	-	-	-	-	-	-
Unmetered Scattered Load Connections	-	-	-	-	0	0	0	0
Sentinel Lighting Connections	288	293	288	280	275.57	271.08	266.1940669	262.9926998
Street Lighting Connections	1,755	1,867	1,983	2,074	2,280	2,454	2,524	2,623
Wholesale Market Participants	-	-	-	-	-	-	-	-
Embedded Distributor(s)	2,284	2,504	2,185	2,362	2,359	2,460	2,355	2,355
Sub Transmission Customers	-	-	-	-	-	-	-	-

Demand (Actual) Variance Analysis

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential								
General Service < 50 kW								
General Service >= 50 kW		3%	-3%	-6%	3%	0%	-5%	1%
Large User								
Unmetered Scattered Load Connections								
Sentinel Lighting Connections		2%	-2%	-3%	-2%	-2%	-2%	-1%
Street Lighting Connections		6%	6%	5%	10%	8%	3%	4%
Wholesale Market Participants								
Embedded Distributor(s)		10%	-13%	8%	0%	4%	-4%	0%
Sub Transmission Customers								

Consumption (Weather Normalized) (GWh)

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential	148,146,532	157,394,486	161,450,998	173,845,236	179,740,541	181,268,665	185,255,262	190,211,160
General Service < 50 kW	33,428,934	35,262,374	42,524,512	39,620,025	40,769,411	43,814,875	44,741,760	45,901,003
General Service >= 50 kW	63,427,232	63,047,266	64,233,404	58,514,824	57,583,223	55,272,639	55,875,121	56,653,142
Large User								
Unmetered Scattered Load Connections	469,372	472,529	486,088	437,171	442,301	446,472	444,471	441,081
Sentinel Lighting Connections	105,920	103,192	103,912	100,327	99,895	97,279	96,414	95,254
Street Lighting Connections	586,057	601,819	654,328	681,839	756,359	803,234	837,252	869,952
Wholesale Market Participants								
Embedded Distributor(s)	938,703	950,989	923,907	939,301	916,498	932,631	935,589	935,589
Sub Transmission Customers								

Consumption (Weather Normalized) Variance Analysis

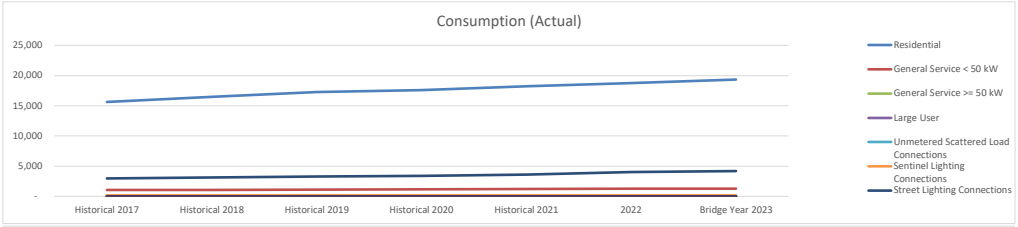
Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential		6%	3%	8%	3%	1%	2%	
General Service < 50 kW		5%	21%	-7%	3%	7%	2%	
General Service >= 50 kW		-1%	2%	-9%	-2%	-4%	1%	
Large User								
Unmetered Scattered Load Connections		1%	3%	-10%	1%	1%	0%	
Sentinel Lighting Connections		-3%	1%	-3%	0%	-3%	-1%	
Street Lighting Connections		3%	9%	4%	11%	6%	4%	
Wholesale Market Participants								
Embedded Distributor(s)		1%	-3%	2%	-2%	2%	0%	
Sub Transmission Customers								

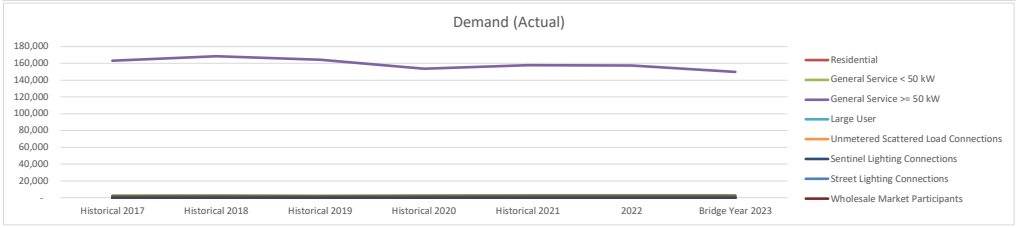
Demand (Weather Normalized)

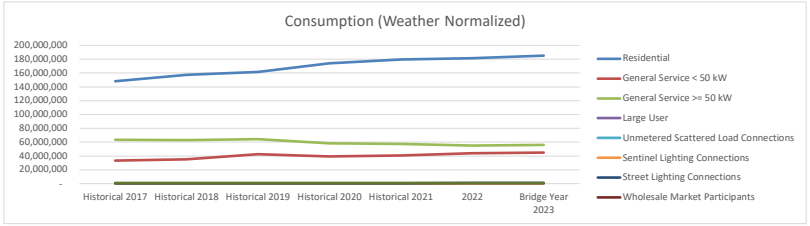
Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential								
General Service < 50 kW								
General Service >= 50 kW	163,230	168,619	164,137	153,609	157,905	157,378	150,019	152,108
Large User								
Unmetered Scattered Load Connections								
Sentinel Lighting Connections	288	293	288	280	276	271	266	263
Street Lighting Connections	1,755	1,867	1,983	2,074	2,280	2,454	2,524	2,623
Wholesale Market Participants								
Embedded Distributor(s)	2,284	2,504	2,185	2,362	2,359	2,460	2,355	2,355
Sub Transmission Customers								

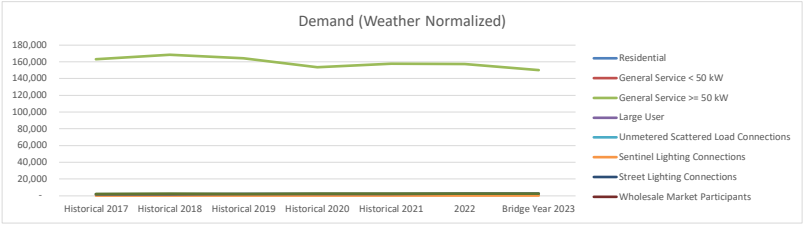
Demand (Weather Normalized) Variance Analysis

Rate Class	Historical 2017	Historical 2018	Historical 2019	Historical 2020	Historical 2021	2022	Bridge Year 2023	Test Year 2024
Residential								
General Service < 50 kW								
General Service >= 50 kW		3%	-3%	-6%	3%	0%	-5%	
Large User								
Unmetered Scattered Load Connections								
Sentinel Lighting Connections		2%	-2%	-3%	-1%	-2%	-2%	
Street Lighting Connections		6%	6%	5%	10%	8%	3%	
Wholesale Market Participants								
Embedded Distributor(s)		10%	-13%	8%	0%	4%	-4%	
Sub Transmission Customers								









Appendix 3-1-1 (C) Monthly Data used in Regression Analysis

	Power Purchased	Heating Degree Days	Cooling Degree Days	Days in Month	Spring Fall Flag	Number of Customers	Predicted Purchases	Variances (kWh)	% Var
Jan-13	24,666,681	708	0	31	0	15,076	24,779,293	112,612	0.5%
Feb-13	22,513,100	639	0	28	0	15,088	22,020,293	-492,807	-2.2%
Mar-13	22,356,782	550	0	31	1	15,100	22,149,022	-207,760	-0.9%
Apr-13	19,424,577	347	0	30	1	15,107	18,925,867	-498,710	-2.6%
May-13	17,840,113	140	25	31	1	15,139	18,108,495	268,383	1.5%
Jun-13	18,666,407	23	70	30	0	15,172	18,796,670	130,263	0.7%
Jul-13	22,033,173	1	141	31	0	15,207	22,567,756	534,582	2.4%
Aug-13	20,162,331	3	125	31	0	15,244	21,844,674	1,682,343	8.3%
Sep-13	17,834,215	50	49	30	1	15,260	17,596,022	-238,193	-1.3%
Oct-13	19,036,509	222	3	31	1	15,288	18,274,723	-761,787	-4.0%
Nov-13	21,552,245	421	0	30	0	15,334	20,708,054	-844,190	-3.9%
Dec-13	25,671,929	579	0	31	0	15,352	23,373,335	-2,298,594	-9.0%
Jan-14	27,344,318	708	0	31	0	15,406	25,062,540	-2,281,779	-8.3%
Feb-14	23,698,938	639	0	28	0	15,425	22,309,548	-1,389,391	-5.9%
Mar-14	24,427,815	550	0	31	1	15,444	22,444,286	-1,983,529	-8.1%
Apr-14	19,352,181	347	0	30	1	15,478	19,244,305	-107,876	-0.6%
May-14	17,549,445	140	25	31	1	15,497	18,415,775	866,330	4.9%
Jun-14	18,258,424	23	70	30	0	15,515	19,091,075	832,651	4.6%
Jul-14	19,452,973	1	141	31	0	15,587	22,893,919	3,440,946	17.7%
Aug-14	19,828,414	3	125	31	0	15,628	22,174,271	2,345,857	11.8%
Sep-14	17,976,814	50	49	30	1	15,648	17,929,052	-47,762	-0.3%
Oct-14	19,058,731	222	3	31	1	15,688	18,618,052	-440,679	-2.3%
Nov-14	22,053,999	421	0	30	0	15,720	21,039,367	-1,014,632	-4.6%
Dec-14	24,252,934	579	0	31	0	15,775	23,736,406	-516,528	-2.1%
Jan-15	26,957,598	708	0	31	0	15,793	25,394,711	-1,562,887	-5.8%
Feb-15	25,654,360	639	0	28	0	15,802	22,633,136	-3,021,224	-11.8%
Mar-15	23,473,380	550	0	31	1	15,826	22,772,165	-701,215	-3.0%
Apr-15	18,844,477	347	0	30	1	15,843	19,557,593	713,116	3.8%
May-15	18,113,892	140	25	31	1	15,856	18,723,914	610,021	3.4%
Jun-15	18,210,409	23	70	30	0	15,883	19,406,938	1,196,530	6.6%
Jul-15	21,783,994	1	141	31	0	15,881	23,146,266	1,362,272	6.3%
Aug-15	20,815,474	3	125	31	0	15,970	22,467,817	1,652,343	7.9%
Sep-15	19,854,447	50	49	30	1	16,005	18,235,474	-1,618,974	-8.2%
Oct-15	19,438,982	222	3	31	1	16,050	18,928,765	-510,216	-2.6%
Nov-15	20,136,180	421	0	30	0	16,127	21,388,705	1,252,525	6.2%
Dec-15	22,491,790	579	0	31	0	16,168	24,073,727	1,581,937	7.0%
Jan-16	25,159,552	708	0	31	0	16,197	25,741,474	581,922	2.3%
Feb-16	23,014,941	639	0	29	0	16,212	23,616,871	601,930	2.6%
Mar-16	21,970,551	550	0	31	1	16,243	23,130,086	1,159,535	5.3%
Apr-16	19,763,963	347	0	30	1	16,249	19,906,072	142,109	0.7%
May-16	18,836,973	140	25	31	1	16,261	19,071,535	234,562	1.2%
Jun-16	19,211,234	23	70	30	0	16,269	19,738,251	527,017	2.7%
Jul-16	23,404,500	1	141	31	0	16,281	23,489,595	85,095	0.4%
Aug-16	24,564,804	3	125	31	0	16,292	22,744,198	-1,820,606	-7.4%
Sep-16	19,239,594	50	49	30	1	16,323	18,508,421	-731,173	-3.8%
Oct-16	19,360,398	222	3	31	1	16,370	19,203,429	-156,969	-0.8%
Nov-16	20,317,470	421	0	30	0	16,399	21,622,169	1,304,699	6.4%
Dec-16	24,538,056	579	0	31	0	16,425	24,294,317	-243,739	-1.0%
Jan-17	24,383,251	708	0	31	0	16,478	25,982,663	1,599,412	6.6%
Feb-17	21,070,773	639	0	28	0	16,482	23,216,796	2,146,023	10.2%
Mar-17	23,393,184	550	0	31	1	16,496	23,347,242	-45,942	-0.2%
Apr-17	18,825,985	347	0	30	1	16,509	20,129,237	1,303,251	6.9%
May-17	18,786,333	140	25	31	1	16,549	19,318,732	532,399	2.8%
Jun-17	19,567,266	23	70	30	0	16,588	20,012,056	444,790	2.3%
Jul-17	22,381,676	1	141	31	0	16,718	23,864,683	1,483,006	6.6%
Aug-17	21,132,316	3	125	31	0	16,774	23,157,910	2,025,594	9.6%
Sep-17	19,954,544	50	49	30	1	16,850	18,960,757	-993,787	-5.0%
Oct-17	19,246,235	222	3	31	1	17,086	19,817,989	571,754	3.0%
Nov-17	21,849,762	421	0	30	0	17,226	22,332,003	482,241	2.2%
Dec-17	26,178,109	579	0	31	0	17,228	24,983,551	-1,194,559	-4.6%
Jan-18	27,156,878	708	0	31	0	17,401	26,774,896	-381,982	-1.4%
Feb-18	22,662,311	639	0	28	0	17,448	24,045,937	1,383,626	6.1%
Mar-18	23,534,615	550	0	31	1	17,479	24,190,975	656,359	2.8%
Apr-18	21,736,721	347	0	30	1	17,526	21,002,152	-734,569	-3.4%
May-18	19,774,023	140	25	31	1	17,555	20,182,206	408,183	2.1%
Jun-18	21,054,154	23	70	30	0	17,627	20,903,855	-150,299	-0.7%
Jul-18	26,045,489	1	141	31	0	17,634	24,650,907	-1,394,581	-5.4%
Aug-18	25,645,895	3	125	31	0	17,691	23,944,993	-1,700,902	-6.6%
Sep-18	21,607,296	50	49	30	1	17,721	19,708,357	-1,898,939	-8.8%
Oct-18	21,087,346	222	3	31	1	17,814	20,442,849	-644,498	-3.1%
Nov-18	23,149,553	421	0	30	0	17,905	22,914,805	-234,748	-1.0%
Dec-18	25,358,955	579	0	31	0	18,163	25,786,083	427,128	1.7%
Jan-19	27,894,969	708	0	31	0	18,297	27,543,954	-351,016	-1.3%
Feb-19	24,435,651	639	0	28	0	18,379	24,845,036	409,386	1.7%
Mar-19	25,143,357	550	0	31	1	18,470	25,041,574	-101,783	-0.4%
Apr-19	21,419,957	347	0	30	1	18,479	21,820,135	400,177	1.9%
May-19	20,126,480	140	25	31	1	18,491	20,985,597	859,117	4.3%
Jun-19	20,273,580	23	70	30	0	18,503	21,655,747	1,382,166	6.8%
Jul-19	26,858,420	1	141	31	0	18,533	25,422,541	-1,435,879	-5.3%
Aug-19	23,828,311	3	125	31	0	18,539	24,672,851	844,540	3.5%
Sep-19	19,656,049	50	49	30	1	18,550	20,419,908	763,859	3.9%
Oct-19	20,804,823	222	3	31	1	18,558	21,081,441	276,618	1.3%
Nov-19	23,741,040	421	0	30	0	18,575	23,489,882	-251,158	-1.1%
Dec-19	26,398,899	579	0	31	0	18,632	26,188,637	-210,261	-0.8%

	Power Purchased	Heating Degree Days	Cooling Degree Days	Days in Month	Spring Fall Flag	Number of Customers	Predicted Purchases	Variances (kWh)	% Var
Jan-20	26,523,402	708	0	31	0	18,667	27,861,534	1,338,132	5.0%
Feb-20	24,898,397	639	0	29	0	18,677	25,732,639	834,242	3.4%
Mar-20	24,574,269	550	0	31	1	18,694	25,233,838	659,569	2.7%
Apr-20	21,967,926	347	0	30	1	18,694	22,004,674	36,748	0.2%
May-20	21,748,680	140	25	31	1	18,713	21,176,145	-572,535	-2.6%
Jun-20	23,703,343	23	70	30	0	18,751	21,868,611	-1,834,732	-7.7%
Jul-20	29,815,954	1	141	31	0	18,765	25,621,672	-4,194,283	-14.1%
Aug-20	26,121,737	3	125	31	0	18,798	24,895,157	-1,226,580	-4.7%
Sep-20	20,682,425	50	49	30	1	18,823	20,654,230	-28,195	-0.1%
Oct-20	21,791,036	222	3	31	1	18,970	21,435,071	-355,965	-1.6%
Nov-20	22,640,627	421	0	30	0	18,969	23,828,061	1,187,435	5.2%
Dec-20	26,936,455	579	0	31	0	19,281	26,745,690	-190,766	-0.7%
Jan-21	27,383,195	708	0	31	0	19,312	28,415,152	1,031,958	3.8%
Feb-21	26,118,374	639	0	28	0	19,328	25,659,586	-458,789	-1.8%
Mar-21	25,209,899	550	0	31	1	19,349	25,796,040	586,141	2.3%
Apr-21	21,444,082	347	0	30	1	19,359	22,575,460	1,131,377	5.3%
May-21	21,915,008	140	25	31	1	19,529	21,876,537	-38,471	-0.2%
Jun-21	24,946,416	23	70	30	0	19,556	22,559,562	-2,386,855	-9.6%
Jul-21	25,413,114	1	141	31	0	19,599	26,337,514	924,400	3.6%
Aug-21	29,121,956	3	125	31	0	19,593	25,577,525	-3,544,432	-12.2%
Sep-21	21,448,441	50	49	30	1	19,629	21,346,039	-102,402	-0.5%
Oct-21	21,738,525	222	3	31	1	19,655	22,023,023	284,498	1.3%
Nov-21	23,740,520	421	0	30	0	19,656	24,417,730	677,210	2.9%
Dec-21	26,760,724	579	0	31	0	19,703	27,107,902	347,178	1.3%
Jan-22	30,693,913	708	0	31	0	19,787	28,822,856	-1,871,057	-6.1%
Feb-22	26,556,496	639	0	28	0	19,809	26,072,439	-484,056	-1.8%
Mar-22	26,436,228	550	0	31	1	19,853	26,228,635	-207,593	-0.8%
Apr-22	22,507,686	347	0	30	1	19,918	23,055,263	547,576	2.4%
May-22	22,133,009	140	25	31	1	19,960	22,246,475	113,465	0.5%
Jun-22	23,221,729	23	70	30	0	20,014	22,952,674	-269,055	-1.2%
Jul-22	26,415,919	1	141	31	0	20,060	26,733,201	317,282	1.2%
Aug-22	27,237,590	3	125	31	0	20,153	26,058,186	-1,179,404	-4.3%
Sep-22	22,039,777	50	49	30	1	20,166	21,806,959	-232,818	-1.1%
Oct-22	21,742,887	222	3	31	1	20,304	22,580,075	837,188	3.9%
Nov-22	23,454,129	421	0	30	0	20,412	25,066,623	1,612,494	6.9%
Dec-22	27,495,142	579	0	31	0	20,513	27,803,144	308,003	1.1%
Jan-23		708	0	31	0	20,542	29,471,146		
Feb-23		639	0	28	0	20,573	26,727,888		
Mar-23		550	0	31	1	20,603	26,872,400		
Apr-23		347	0	30	1	20,633	23,669,356		
May-23		140	25	31	1	20,664	22,850,676		
Jun-23		23	70	30	0	20,694	23,536,723		
Jul-23		1	141	31	0	20,725	27,304,004		
Aug-23		3	125	31	0	20,756	26,575,439		
Sep-23		50	49	30	1	20,786	22,339,367		
Oct-23		222	3	31	1	20,817	23,020,386		
Nov-23		421	0	30	0	20,848	25,440,626		
Dec-23		579	0	31	0	20,879	28,116,888		
Jan-24		708	0	31	0	20,952	29,822,765		
Feb-24		639	0	29	0	21,026	27,748,531		
Mar-24		550	0	31	1	21,100	27,298,605		
Apr-24		347	0	30	1	21,174	24,133,130		
May-24		140	25	31	1	21,248	23,352,206		
Jun-24		23	70	30	0	21,323	24,076,194		
Jul-24		1	141	31	0	21,398	27,881,602		
Aug-24		3	125	31	0	21,473	27,191,353		
Sep-24		50	49	30	1	21,549	22,993,785		
Oct-24		222	3	31	1	21,625	23,713,498		
Nov-24		421	0	30	0	21,701	26,172,621		
Dec-24		579	0	31	0	21,777	28,887,955		
		10-year average							
		Geomean Monthly Escalation					3,342,110,430		
								Weather Normalization Factor	
2013	251,758,061						249,144,204	246,934,214	1.009
2014	253,254,986						252,958,595	251,258,725	1.007
2015	255,774,983						256,729,212	254,850,332	1.007
2016	259,382,036						261,066,418	265,536,786	0.983
2017	256,769,435						265,123,619	259,940,797	1.020
2018	278,813,236						274,548,014	280,582,121	0.978
2019	280,581,537						283,167,302	282,875,317	1.001
2020	291,404,252						287,057,321	288,894,081	0.994
2021	295,240,254						293,692,069	291,664,577	1.007
2022	299,934,504						299,426,530	300,376,333	0.997
2023							305,924,899	305,924,899	1.000
2024							313,272,246	313,272,246	1.000
Total	2,722,913,284						2,722,913,284	0	k - must be
							3,342,110,430	0	

Appendix 3-1-1 (D) 2024 Demand Data Model

InnPower Corporation has filed the 2024 Demand Data Model separately in excel as Exhibit 3, Appendix 3-1-1 (D): 2024 Demand Data Model.