

MEMORANDUM

TO: Sarah Talbert, Assistant Director Utilities

FROM: Matt Lucas, Sr. Rate Analyst

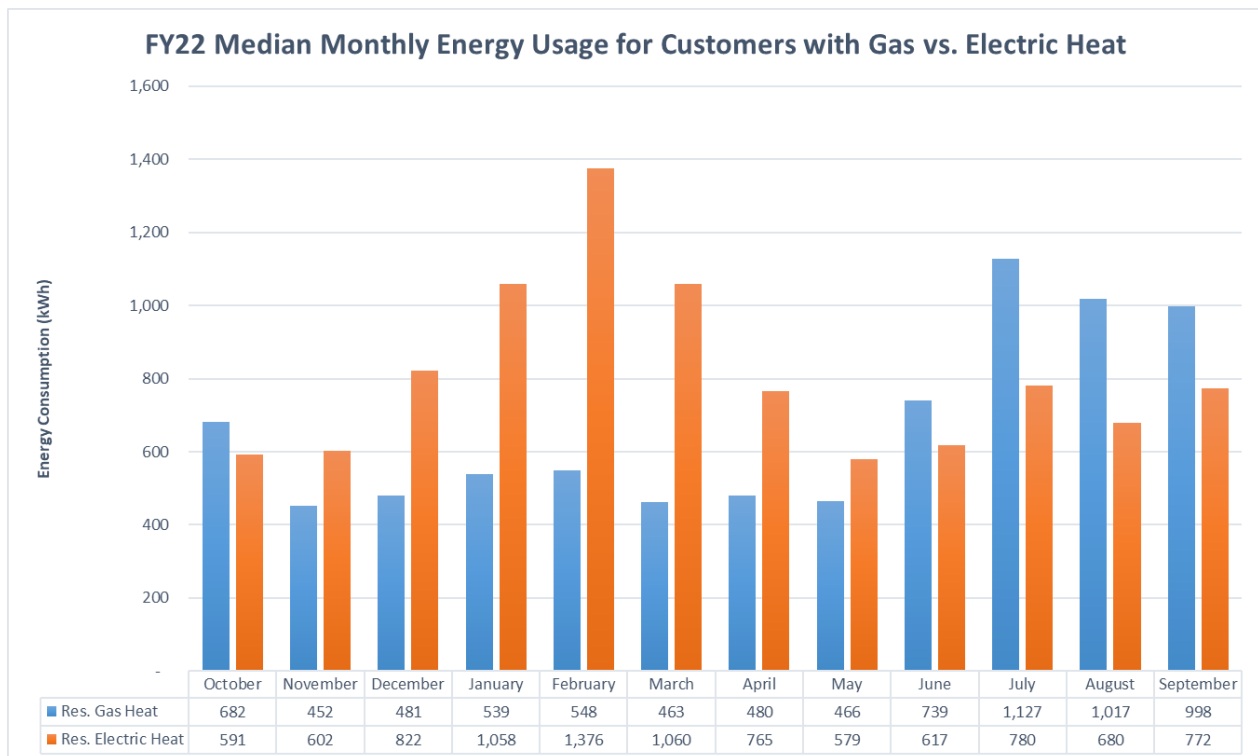
DATE: February 23, 2023

SUBJECT: Distribution of Energy Usage of Low-Income Customers– FY22

Introduction

At the Water & Light board meeting on February 14, 2023, the Board requested additional information regarding the monthly energy distribution of low-income electric customers. CWL does not have a definitive way to identify low-income customers, however there are some indirect methods to help identify many of these customers. To better understand the usage of CWL's low-income customers, three separate groups of customers were created: customers with a pledge on their account in FY22, customers with a disconnection in FY22, and customers with a payment arrangement in FY22.

The monthly median energy consumption for all residential gas heat and electric heat customers are summarized in the graph below. The annual usage patterns for these customers are very different, and so the suspected low-income customers in each class will be examined separately.

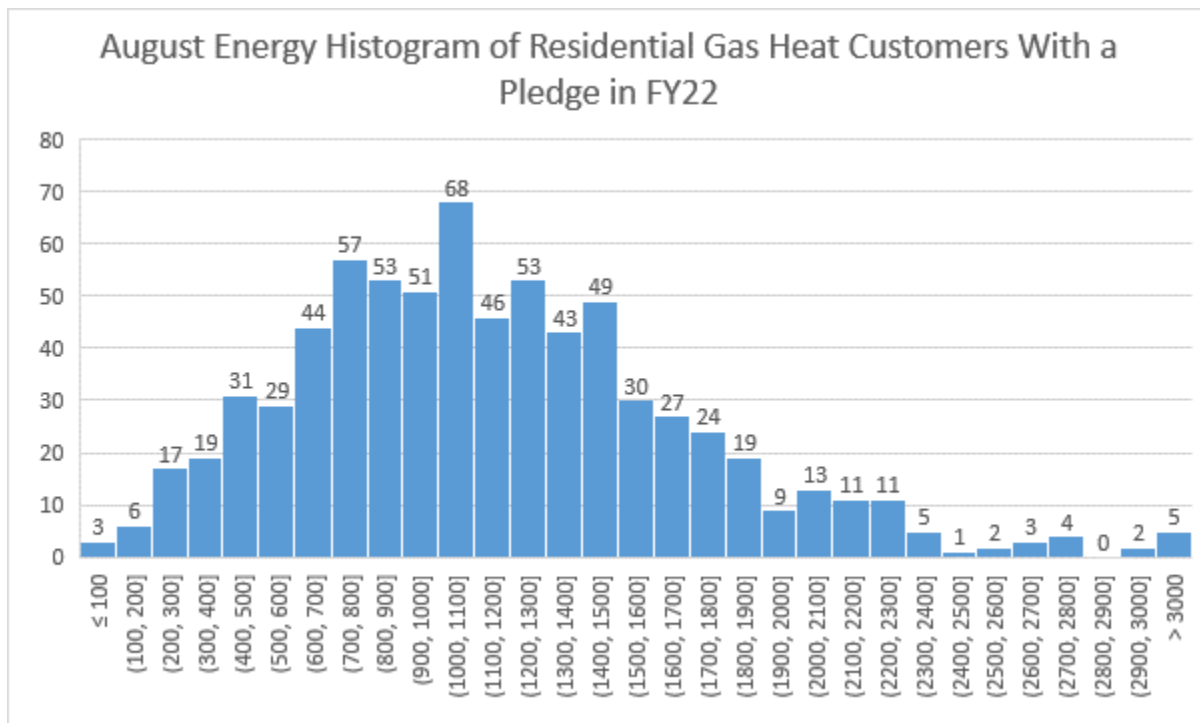


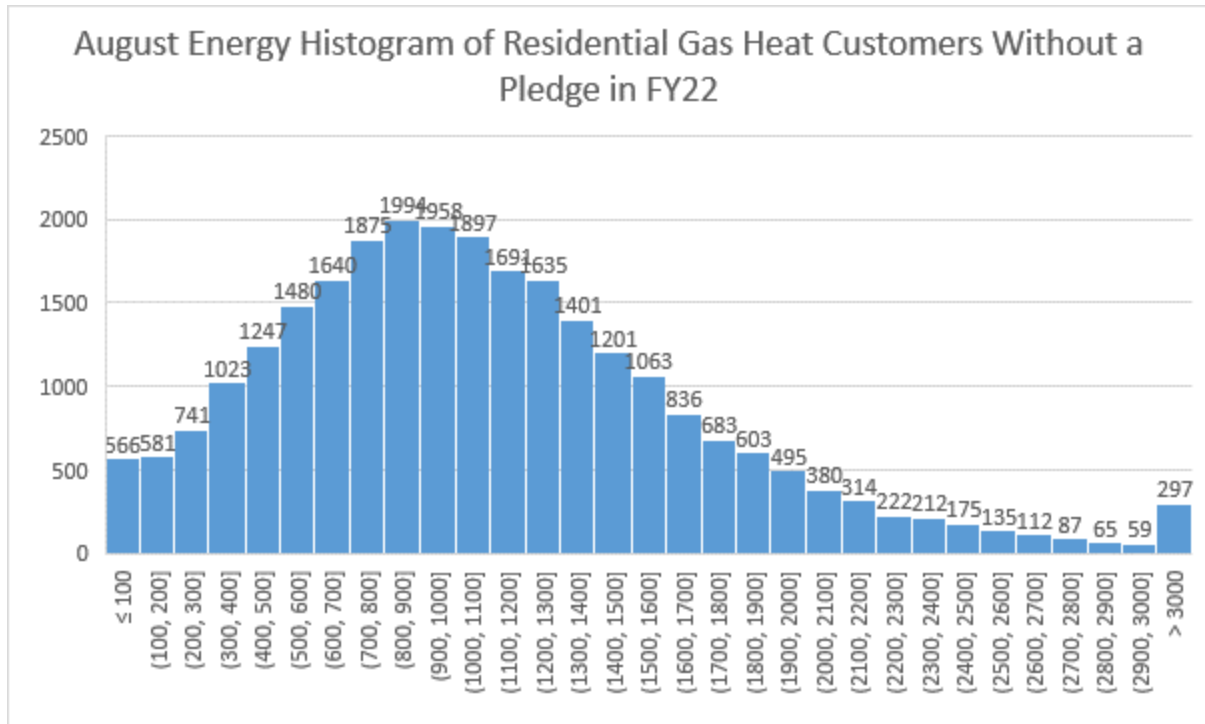
Residential Gas Heat

In the summer, customers with a low-income identifier have a largely similar usage distribution as those who were without a low-income identifier. Customers with either a pledge or payment arrangement in FY22 see a slight elevation in usage versus the groups without a pledge or payment arrangement, and customers with a disconnection actually used less than those without a disconnection.

Table 1: Residential Gas Heat Energy Summary for August 2022

	With Pledge	W/O Pledge	With Disconnect	W/O Disconnect	With Payment Arrangement	W/O Payment Arrangement
Maximum	3,994	14,960	7,991	14,960	4,280	14,960
75th Percentile	1,458	1,421	1,363	1,427	1,511	1,413
Median	1,085	1,014	936	1,022	1,102	1,007
25th Percentile	769	664	555	676	776	658
Minimum	81	1	1	1	4	1



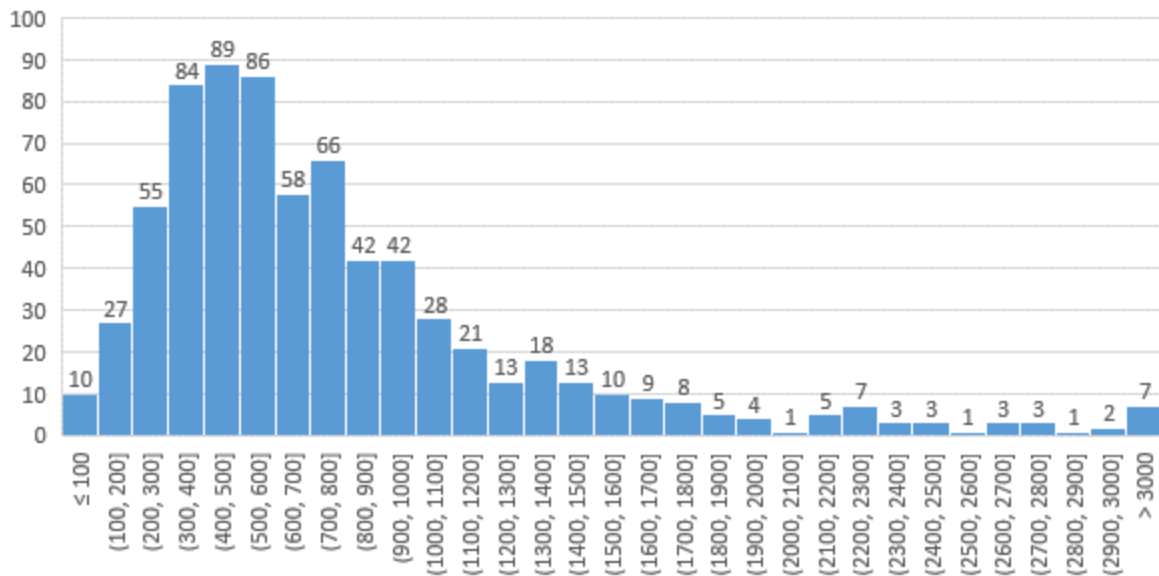


The same pattern occurs in the winter, with customers with pledges and payment arrangements having slightly elevated usage versus the groups without, and customers with disconnections being slightly less than those customers without a disconnection.

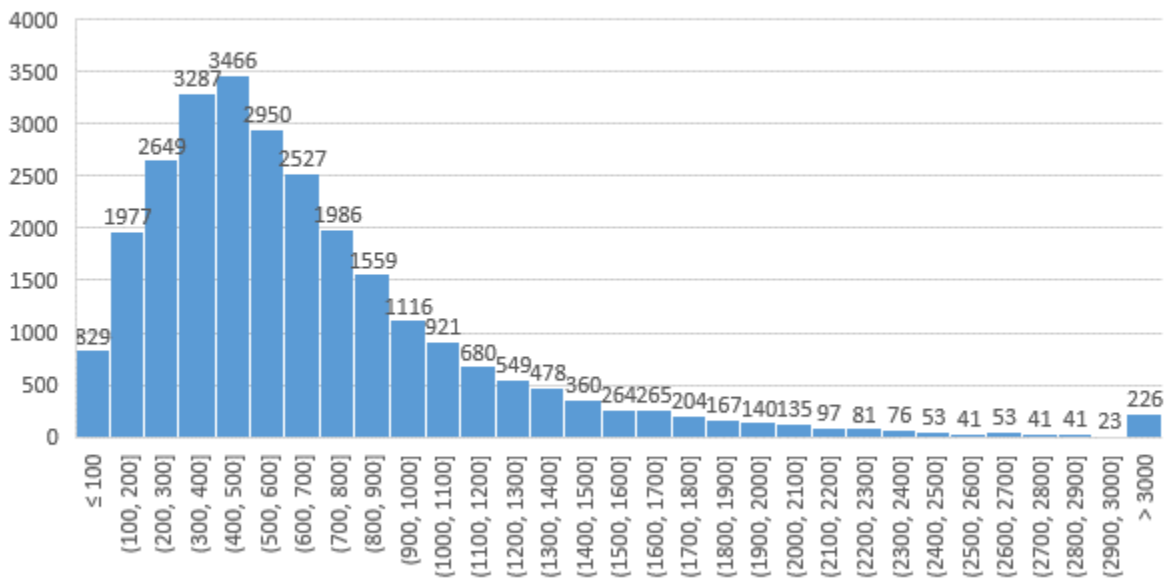
Table 2: Residential Gas Heat Energy Summary for February 2022

	With Pledge	W/O Pledge	With Disconnect	W/O Disconnect	With Payment Arrangement	W/O Payment Arrangement
Maximum	4,580	13,440	8,114	13,440	6,533	13,440
75th Percentile	965	846	854	849	943	842
Median	615	546	511	551	598	544
25th Percentile	408	343	295	348	380	342
Minimum	25	1	1	1	1	1

February Energy Histogram of Residential Gas Heat Customers With a Pledge in FY22



February Energy Histogram of Residential Gas Heat Customers Without a Pledge in FY22

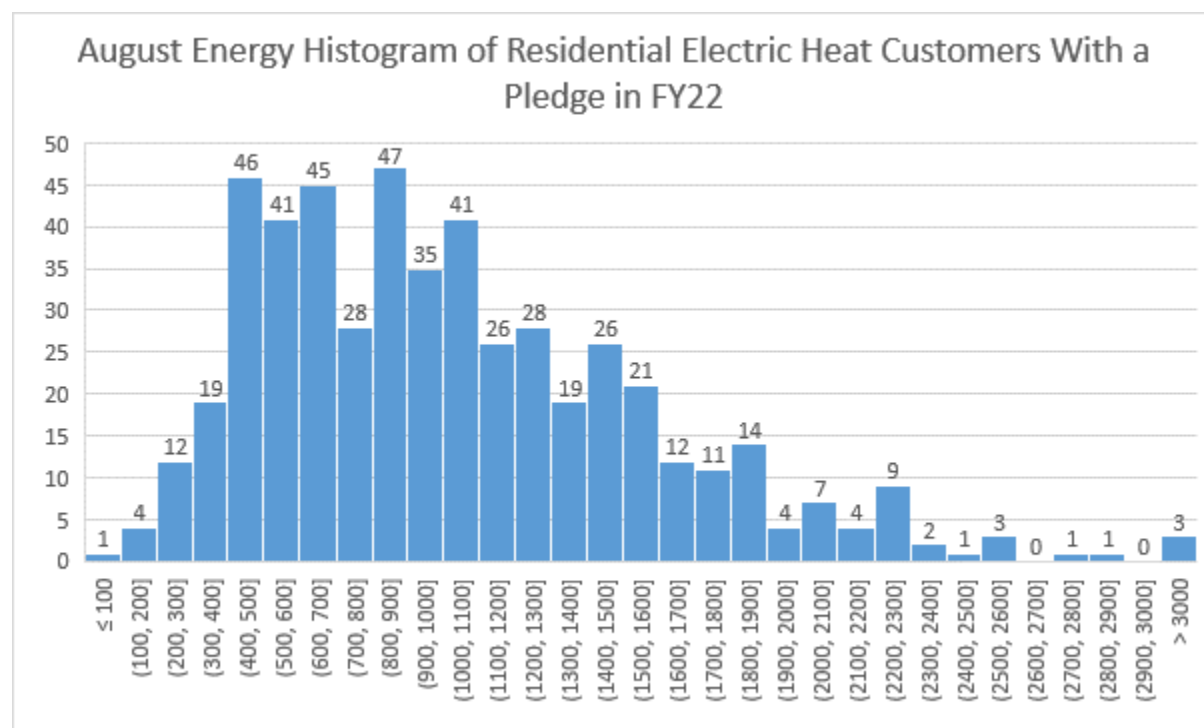


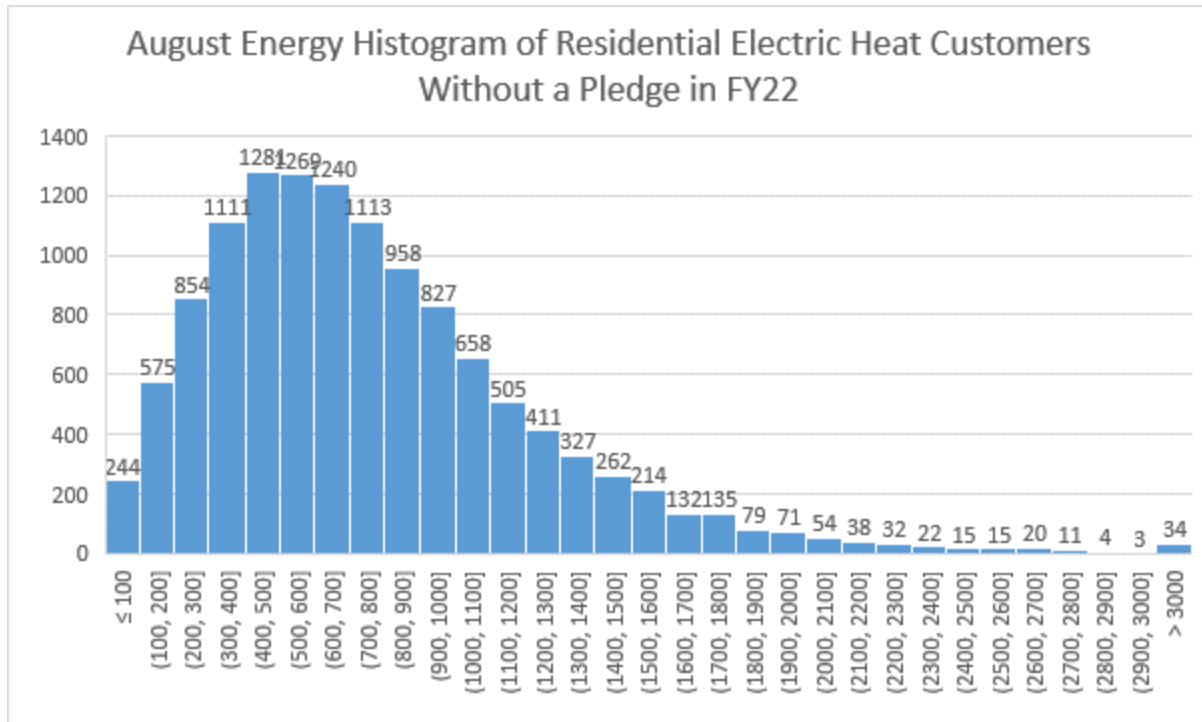
Residential Electric Heat

Electric usage for customers with electric heating who have a low-income identifier tends to be much higher than those with electric heating and no identifier. The median usage in August for customers with a pledge is 251 kWh greater than those without a pledge on their account; customers with a disconnection used 106 kWh more than those without a disconnection, and customers with a payment arrangement used 285 kWh more than those without a payment arrangement.

Table 3: Residential Electric Heat Energy Summary for August 2022

	With Pledge	W/O Pledge	With Disconnect	W/O Disconnect	With Payment Arrangement	W/O Payment Arrangement
Maximum	3,634	5,560	3,634	5,560	3,634	5,560
75th Percentile	1,346	990	1,124	996	1,363	971
Median	925	674	782	676	943	658
25th Percentile	612	428	481	432	663	419
Minimum	107	3	5	3	72	3



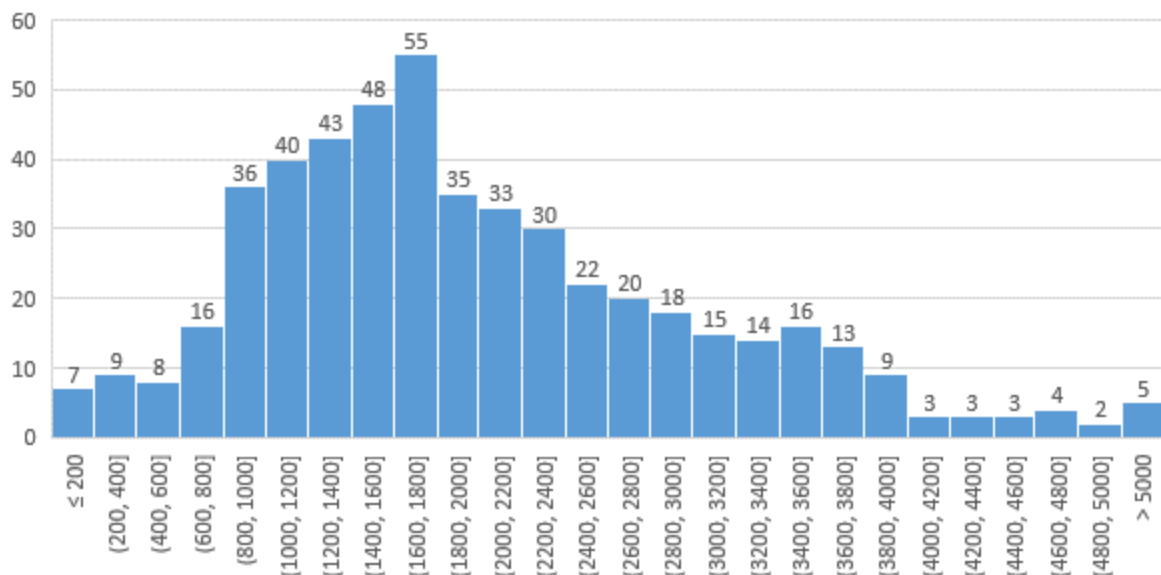


In the winter, these disparities became more pronounced and the distribution more right-skewed. The difference in medians between customers with pledges, disconnections, and payment arrangements versus those without were 406 kWh, 165 kWh, and 410 kWh, respectively.

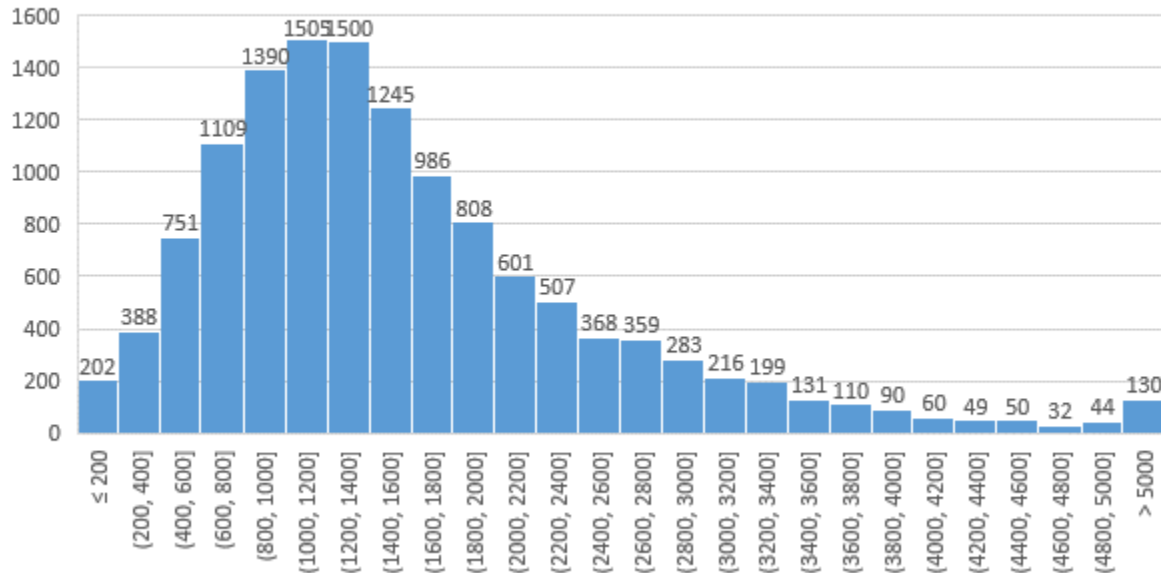
Table 4: Residential Electric Heat Energy Summary for February 2022

	With Pledge	W/O Pledge	With Disconnect	W/O Disconnect	With Payment Arrangement	W/O Payment Arrangement
Maximum	8,141	13,933	13,933	10,920	13,933	10,920
75th Percentile	2,591	1,990	2,210	1,994	2,515	1,971
Median	1,768	1,362	1,531	1,366	1,757	1,347
25th Percentile	1,274	919	1,005	924	1,233	909
Minimum	63	1	4	1	4	1

February Energy Histogram of Residential Electric Heat Customers With a Pledge in FY22



February Energy Histogram of Residential Electric Heat Customers Without a Pledge in FY22



Please note that the histograms for the Pledge group were chosen for readability and brevity. Similar histograms for the Disconnection and Payment Arrangement groups are available upon request.