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January 14, 2022

VIA ELECTRONIC FILING

Ms. A. Shonta Dunston
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**Re: Request for Time-Limited Waiver of Certain Code of Conduct Provisions
Docket Nos. E-7, Subs 1187, 1213, and 1214 and E-2, Subs 1193 and 1219**

Dear Ms. Dunston:

Enclosed for filing in the above-referenced dockets is the Request of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (the “Companies”) for a Time-Limited Waiver of Section III, A.2.(B) and (G) of the Companies’ Code of Conduct, as approved by the North Carolina Utilities Commission in its August 24, 2018 *Order Granting Motion to Amend Regulatory Conditions*, in Docket Nos. E-2, Sub 1095A, E-7, Sub 1100A, and G-9, Sub 682A.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Kendrick C. Fentress

Enclosure

cc: Parties of Record

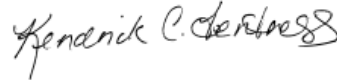
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Jan 14 2022

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Request for Time-Limited Waiver of Certain Code of Conduct Provisions, in Docket Nos. E-7, Subs 1187, 1213 and 1214 and E-2, Subs 1193 and 1219, has been served on all parties of record either by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid.

This the 14th day of January, 2022.



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STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1214
DOCKET NO. E-7, SUB 1213
DOCKET NO. E-7, SUB 1187
DOCKET NO. E-2, SUB 1219
DOCKET NO. E-2, SUB 1193

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1213)
)
In the Matter of)
Application for Approval of Proposed Prepaid)
Advantage Program)
)
DOCKET NO. E-7, SUB 1214)
)
Application by Duke Energy Carolinas, LLC,)
for Adjustment of Rates and Charges)
Applicable to Electric Utility Service in North)
Carolina)
)
DOCKET NO. E-7, SUB 1187)
)
Petition of Duke Energy Carolinas, LLC for)
an Accounting Order to Defer Incremental)
Storm Damage Expenses Incurred as a Result)
of Hurricanes Florence and Michael and)
Winter Storm Diego,)
)
DOCKET NO. E-2, SUB 1219)
)
In the Matter of)
Application of Duke Energy Progress, LLC,)
for Adjustment of Rates and Charges)
Applicable to Electric Utility Service in North)
Carolina)
)
DOCKET NO. E-2, SUB 1193)
)
Petition of Duke Energy Progress, LLC for an)
Accounting Order to Defer Incremental Storm)
Damage Expenses Incurred as a Result of)
Hurricanes Florence and Michael and Winter)
Storm Diego)

**DUKE ENERGY CAROLINAS, LLC AND
DUKE ENERGY PROGRESS, LLC'S
REQUEST FOR A TIME-LIMITED
WAIVER OF SECTION III, A.2.(B) AND
(G) OF THE COMPANIES' CODE OF
CONDUCT**

NOW COME Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”, collectively “Duke” or the “Companies”), after consultation with members of the North Carolina Utilities Commission’s Low-Income Affordability Collaborative (“LIAC”) and pursuant to Commission Rule R1-5 and Section II of the Companies’ Code of Conduct as approved by the Commission in its August 24, 2018 *Order Amending Regulatory Conditions*, in Docket Nos. E-2, Sub 1095A, E-7, Sub 1100A, and G-9, Sub 682A (“Code of Conduct”), and request a time-limited waiver of Section III, A.2.(b) and (g) of the Code of Conduct so that they may share anonymous, aggregated non-public Customer Information with participants of the LIAC established by this Commission in Docket Nos. E-2, Subs 1219 and 1193 and Docket Nos. E-7, Subs 1213, 1214, and 1187 (“Rate Case Orders”). Section II of the Code of Conduct provides that the Companies may seek a waiver of any aspect of the Code of Conduct by filing a request with the Commission showing that the circumstances of a particular case justify a waiver. For the reasons set forth in more detail herein, the circumstances of this case justify a time-limited waiver of certain provisions of the Code of Conduct for purposes of furthering the work of the LIAC consistent with the Commission’s objectives outlined in the Rate Case Orders. The Companies have discussed their request for a time-limited waiver with their co-chair of the LIAC, the Public Staff - North Carolina Utilities Commission (“Public Staff”), and the participants of the LIAC. The requested limited waiver would remain in effect until the LIAC submits its final report to the Commission as outlined in the Rate Case Orders. In support of this request, the Companies show the following:

Procedural History

1. The Rate Case Orders required the Companies and the Public Staff to convene, within 90 days, a collaborative for interested stakeholders to address the affordability of electric service for low-income customers. The Rate Case Orders also directed that the LIAC be facilitated by a third party with experience in affordability issues. On June 4, 2021, the Companies provided a list of participants interested in participating in the LIAC (“Participants List”) and notified the Commission that a third-party facilitator would be selected in June 2021 and that the first Collaborative meeting would be held in July 2021.

2. On June 28, 2021, the Commission approved the Participants List for the LIAC and encouraged the Companies to reach out to public administrators of existing government programs like Low Income Energy Assistance Program (“LIEAP”) for potential participation as well. On July 16, 2021, the Companies filed a second update, confirming the participation of representatives from LIEAP, the North Carolina Department of Environmental Quality – State Weatherization, and the North Carolina Office of Recovery and Resiliency – Housing Opportunities and Prevention of Eviction Program. On July 21, 2021, the Commission accepted the updated Participants List.

3. For purposes of transparency and to engage an experienced and independent third party, the Companies issued a request for proposals (“RFP”) to a list of potential facilitators. Prior to issuing the RFP, the Companies worked with the Public Staff, the North Carolina Attorney General’s Office, and North Carolina Justice Center in drafting the RFP and identifying potential bidders. The Companies and the Public Staff secured

Guidehouse, Inc. (“Guidehouse”) to serve as a third-party facilitator for the LIAC’s initiatives.

4. On September 27, 2021, Duke and the Public Staff jointly filed a progress report prepared by Guidehouse that briefly summarizes the progress made by the LIAC within 180 days of the date of the Rate Case Orders.

Information to be Shared

5. In its Rate Case Orders, the Commission directed the LIAC, among other things, to:

- Provide an analysis or demographics of residential customers, including number of members per household, types of households (single family or multi-family), the age and racial makeup of households, household income data, and other data that would describe the types of residential customers the Company now serves. To the extent the demographics vary significantly across the Companies’ service areas, provide additional analysis of these demographic clusters;
- Estimate the number of customers who live in households with incomes at or less than 150% of the federal poverty guidelines, and whose incomes are at or less than 200% of the Federal Poverty Guidelines; and
- Provide an analysis of patterns and trends concerning energy usage, disconnections for nonpayment, payment delinquency histories, and account write-offs due to uncollectibility.

The Companies are committed to achieving the LIAC’s goals as set forth in the Rate Case Orders. To accomplish these objectives, the Companies support the transparent exchange of information among the LIAC participants. The Companies have provided presentations to the LIAC that include relevant customer data that does not implicate the Code of Conduct, is publicly available, and/or information that the Companies have obtained from sources other than their customers. See Attachment No. 1, which has been shared with members of the LIAC. As the LIAC focuses on achieving the Commission’s objectives,

participants have expressed a need to review certain information specific to groups of customers, which would necessitate the Companies' disclosure of non-public Customer Information. Based on these discussions, the Companies believe that to timely meet the Commission's goals outlined in the Rate Case Orders, sharing aggregated and anonymous non-public data at the zip code level, where a zip code has no fewer than 15 residential customer accounts, is necessary and appropriate. Therefore, the Companies respectfully request this limited waiver of the provisions of the Code of Conduct that govern their disclosure of non-public customer data to third parties without customer authorization.

Relevant Code of Conduct Provisions

6. The Code of Conduct defines Customer Information as “*Non-public information or data specific to a Customer or a group of Customers*, including, but not limited to, electricity consumption, natural gas consumption, load profile, billing history, or credit history that is or has been obtained or compiled by DEC, DEP, or Piedmont in connection with the supplying of Electric Services or Natural Gas Services to that Customer or *group of Customers*.”¹ “Electric Services” means “Commission-regulated electric power generation, transmission, distribution, delivery, and sales, and other related services, including but not limited to, administration of Customer accounts and rate schedules, metering, billing, standby service, backups, and changeovers of service to other suppliers.” In contrast, the Code of Conduct does not apply to information pertaining to race, gender, age, income levels, type of dwelling (e.g., multi-family, single family, manufactured), location of dwelling (e.g., city or suburb), house value, etc. Because the Companies do not collect or maintain these types of demographic data about their

¹ Code of Conduct, Sec. I, Definitions. (Emphasis added.)

customers, the Companies have worked with third parties, such as Acxiom, to provide these types of demographic data for purposes of the LIAC's work.

7. The Code of Conduct contains numerous provisions regulating the Companies' treatment of Customer Information.² Specific to this request, Section III, A. 2(b) provides that the Companies shall not disclose Customer Information without the Customer's consent, and then only to the extent specified by the Customer. Section III, A. 2(g) requires DEC and DEP to take appropriate steps to store Customer Information in a manner that limits access to those persons permitted to receive it and shall require all persons with access to such information to protect its confidentiality.

8. In addition to customer privacy concerns, which the Companies take very seriously, the Code of Conduct recognizes that the Companies collect non-public information about their customers that could have competitive value to the Companies' affiliates and to third-parties.³ Because the Companies' customers' non-public data is necessarily collected and maintained to allow for the Companies' provision of electric utility service to retail customers, the Code of Conduct generally prohibits the Companies from disclosing non-public Customer Information specific to a customer or a group of customers to the Companies' nonpublic utility operations, affiliates, or to non-affiliated third parties, absent written, electronic, or recorded verbal authorization from the affected customer or group of customers.⁴

² See e.g. Code of Conduct, Disclosure of Customer Information, Sec. III, A. 2.(a) – (k).

³ See generally, Code of Conduct, Sec. III, A.(2) (c), (i) and (j) and B.(9) (ensuring that the Companies' affiliates do not obtain an anti-competitive or discriminatory advantage over non-affiliated, third-party market participants through the sharing of non-public Customer Information).

⁴ *Id.* at 2.(b).

9. The Code of Conduct applies to individual residential customers without question, but the meaning of non-public “data specific to a group of customers” is less defined. In Docket No. E-7, Sub 997, the Commission concluded that the Companies’ proposal to disclose aggregated, anonymous customer energy usage data to the City of Charlotte at the zip code plus four level, without any customer authorization, necessitated a time-limited waiver of the Code of Conduct.⁵ The City of Charlotte had requested the non-public customer information to complete its Quality of Life Study. In allowing the Companies’ limited waiver, the Commission relied on the following: the research the City of Charlotte was conducting would ultimately benefit its citizens (and DEC’s customers); the disclosure of the non-public data in the aggregate was unlikely to lead to any affiliate of DEC gaining a competitive advantage; and the aggregated information at that level did not raise any customer privacy concerns because no customer identifying or individual customer-specific information would be included.

Circumstances Justifying a Waiver

10. The circumstances justifying the requested limited waiver in this case are even more compelling than those justifying the limited waiver in Docket No. E-7, Sub 997. The LIAC’s work is expressly intended to benefit the Companies’ low-income customers, and the requested limited waiver is necessary for this work. Moreover, the LIAC is being conducted pursuant to the Rate Case Orders and with Commission oversight. The LIAC includes the Public Staff as a co-chair with the Companies. Therefore, the objectives and parameters of the LIAC have been made clear. To further ensure protection of the

⁵ *Order Approving Limited Waiver of Code of Conduct*, Docket No. E-7, Sub 997, issued February 29, 2012.

Customer Information, however, the Companies request that the Commission allow the *time-limited* waiver for purposes of complying with the Commission's Rate Case Orders and with respect to the objectives of the LIAC only and for no other purpose.

11. As in Docket No. E-7, Sub 997, the Customer Information in this proceeding to be disclosed would be aggregated with no specific individual customer identifiers, such as account numbers or specific mailing or residence addresses. Therefore, the individual customer's privacy will be protected. Additionally, this request involves only residential customers, instead of all classes of customers, so the potentially sensitive, competitive information of the Companies' commercial and industrial customers will not be disclosed, even in the aggregate. Moreover the anonymous, non-public Customer Information aggregated to the proposed level will not lead to any competitive advantage for DEC's or DEP's affiliates.

12. The Companies have relied upon the Public Staff's filed proposed amendments to Commission Rule R8-51 that are currently pending before the Commission in Docket No. E-100, Sub 161, for guidance in proposing this waiver. Specifically, with respect to requests for aggregated data from a utility, the proposed subsection of that Rule provides that:

A utility may disclose readily available aggregated customer data that consists of *at least fifteen customers*, where the data of a single customer or premise associated with a single customer's data does not comprise 15 percent or more of the aggregated data within the same customer class. In aggregating customer data to create an aggregated data report, a utility must ensure the data does not include any unique identifiers. A utility shall not be obligated to provide aggregated customer data in response to multiple overlapping requests from or on behalf of the same requestor that have the potential to identify customer data.⁶

⁶ Initial Comments and Proposed Draft Rules of the Public Staff, at Appendix II, p.5, filed Feb. 10, 2020 in Docket No. E-100, Sub 161. (Emphasis added.)

The Public Staff's proposed Rule was not expressly intended to apply to stakeholder proceedings, such as the LIAC, where numerous parties will be obtaining the Customer Information at the same time. Nevertheless, for purposes of this proceeding, if the Commission allows the requested, time-limited waiver of the Code of Conduct, the Companies will use this provision of the Public Staff's proposed Rule to guide how it aggregates requested Customer Information.

13. If the Commission approves this limited waiver, the Companies will prepare, compile, and deliver the aggregated Customer Information to the participants of the LIAC for the sole purpose of achieving the Commission's express objectives for the LIAC. The Companies will act expeditiously because the time for the LIAC's work is limited, and there is much still to do.

14. The Companies have already provided the information below on an aggregated, North Carolina basis to the LIAC. Discussions in the LIAC, however, have led the Companies to determine that these information categories would be helpful to the LIAC if aggregated at the zip code level (if the zip code includes no fewer than 15 residential customer accounts). If aggregated at that level, the Companies could provide nonpublic energy usage and billing information to the LIAC, and, in some cases, overlay this information with other data that is *not* Customer Information (information available from sources other than the customer, such as age, federal poverty level, home value, whether the account is in a city or suburb, or race), as summarized below:

Number of Accounts

Average Bill Amount

(PCT) in Arrears Definition

Percent of customers < %150 Federal Poverty Level (FPL)

Percent of customers 150% to 200% FPL

Percent of customers >200% FPL

Percent of customers Disconnected for Nonpayment (DNP)

Average Monthly kWh Usage

Percent of customers in Single Family Dwellings

Percent of customers in Multi-Family Dwellings

Percent of customers in all electric homes

Percent of customers in a City

Percent of customers in a Suburb

Percent of customers in a rural community

Average House Value

Percent of households who identify as African American

Percent of households who identify as Asian

Percent of households who identify as Hispanic

Percent of households who identify as White

Average Age of account holder

Average number of People in Household

Average square foot of home

Historic monthly disconnect for non-pay (depending on data availability)

Historic monthly usage (depending on data availability)

Percent of customers in mobile and/or manufactured homes (depending on data availability)

Average electric burden (depending on data availability)

15. Based on the foregoing, the Companies' request of a limited waiver of the provisions of the Code of Conduct governing their disclosure of non-public Customer Information strikes the appropriate balance among protecting non-public Customer Information, expeditiously meeting the Commission's goals with respect to the LIAC's work, and complying with the Code of Conduct.

16. If the Commission allows this limited waiver, the Companies respectfully and additionally request, in an abundance of caution, that the Commission further include language similar to that included in the Public Staff's Proposed Rule R8-51⁷, providing that:

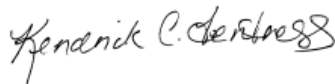
Nothing in this Order Allowing Limited Waiver of the Code of Conduct shall be construed to impose any liability on DEC and DEP or any of DEC's or DEP's directors, officers and employees, relating to disclosures of Customer Information. Specifically, after DEC or DEP transfers customer data pursuant to this Limited Waiver, DEC and DEP shall not be responsible for the security of the information or its use or misuse by any third party. Nothing herein relieves DEC or DEP of its responsibility to comply with Section III.A.2(k) of the Code of Conduct.

17. The Companies are authorized to state that the Public Staff supports the granting of this request for the time-limited waiver of the Code of Conduct for the purpose of furthering the work of the LIAC.

⁷ *Id.* at R8-51(o) at 6.

WHEREFORE, the Companies respectfully request that the Commission issue an Order (i) waiving Section III, A.2.(b) and (g) of the Code of Conduct that govern the Companies' disclosure of Customer Information for the sole purpose of the LIAC's work toward meeting the Commission's objectives in the Rate Case Orders, (ii) providing that the limited waiver expires upon the filing of the final report of the LIAC with the Commission, and (iii) including the proposed language providing that nothing in the limited waiver shall be construed to impose any liability on DEC and DEP or their directors, officers and employees related to the limited waiver and that DEC and DEP shall not be responsible for the security of the information or its use or misuse by any third party.

Respectfully submitted, this the 14th day of January, 2022



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NC Low Income Collaborative Analytics

Version 3 - December 2021



TODAY'S GOAL

- Present updates and the output of the demographic data analysis performed on Duke Energy Carolinas and Duke Energy Progress (the “Companies”) low-income customer accounts - analysis as defined in the NCUC order
- Answer questions about this analysis
- Share next steps for Sub-Team A to complete assessment of current affordability challenges

OVERALL GOAL

- Equip LIAC to **prepare an assessment of current affordability challenges**
(using the data presented today as key input into assessment)

LANGUAGE FROM THE COMMISSION ORDER

Prepare an **assessment of current affordability challenges** facing residential customers. The assessment should:

- Provide an **analysis of demographics of residential customers**, including number of members per household, types of households (single family or multi-family), the age and racial makeup of households, household income data, and other data that would describe the types of residential customers the Company now serves. To the extent demographics vary significantly across the Company’s service area, provide additional analysis of these demographic clusters.
- **Estimate the number of customers** who live in households with incomes at or less than 150% of the federal poverty guidelines (FPG), and those whose incomes are at or less than 200% of the FPG.
- For the different demographic groups identified as part of a. and b., provide an **analysis of patterns and trends** concerning energy usage, disconnections for nonpayment, payment delinquency histories, and account write-offs due to uncollectability.

- kWh per Square Foot by Arrearage Status to better show energy intensity
 - Slides 25, 35, 45 & 55
- Numbers and Percent of Customers in each Segment (income level, arrears status, DNPs)
 - Slides 28-30, 38-40, 48-50, 58-60
- Notes
 - Totals may not add up perfectly due to unknown data (~2%) which is not included
 - Due to data privacy, segments under 100 customers have been removed; totals reflect data shown

Included in Analytics

Per North Carolina Utilities Commission Order:

- Insights into customers under 150% and 200% federal poverty level (FPL)
- Demographics/housing including dwelling type, heating source, renter/owner, racial makeup, age of account holder and number of people in the household
- Trends in delinquency, write-offs, disconnect non-pay (DNP) and energy usage

Per LIAC Members Request:

- AMI Load Shapes
- Additional Insights into Acxiom Data
- Tables including relative information
- More insight into energy intensity

Other:

- Low Income Energy Assistance Program and Crisis Intervention Program (LIEAP/CIP) recipients as their own segment

Not included in Analytics:

Per LIAC Request:

- Zip code/customer level data – Conversations on a Code of Conduct waiver are in progress
- EE Participation – Will be included in analysis of current programs
- Food deserts, health care deserts, etc. The Companies do not have the data nor expertise on these topics.
- Mobile/Manufactured Homes analysis – Lack of quality data
- Energy Burden analysis was not completed – Will be included in a future iteration

- Acxiom (3rd party provider for demographic information) has been verified as useful and reasonably accurate over large data sets, like the ones included in this presentation
 - Correlates with Census data and billing system
 - Correlates when compared with Duke employee checks on personal information (on subset of variables)
 - Primary use case is for marketing
- A great number of external data sources could theoretically be used for this analysis
 - To acquire individual customer-level data requires careful adherence to customer privacy laws and practices
 - Transferring, cleaning, verifying, and analyzing any new data sources on every North Carolina customer would take months
 - Duke Energy will continue to investigate additional data sources as necessary
- To supplement and validate research into low income, low resources customers, the Department of Health and Human Services and Duke Energy entered in a data share agreement permitting the Company to perform analysis on Duke Energy customers identified as Low Income Energy Assistance Program and Crisis Intervention Program recipients (“LIEAP/CIP”).
- LIEAP & CIP programs are intended to help low-income families who need assistance during an energy crisis to ensure they have access to both heating and cooling services.
- The Companies were provided ~52k customers (active as of 2021)
 - LIEAP Qualifications: Less than 130% FPL and reserves at or below \$2,250
 - CIP Qualifications: Less than 150% FPL and in an energy crisis

Collect information at a household level

Public data, buying activity, online registrations, magazine subscriptions, survey data, warranty information, etc.



Model missing data

Uses other known variables of customers and information at the zip+4 and zip level using their proprietary model

Race: surname, language preference, geography, country of origin, etc.

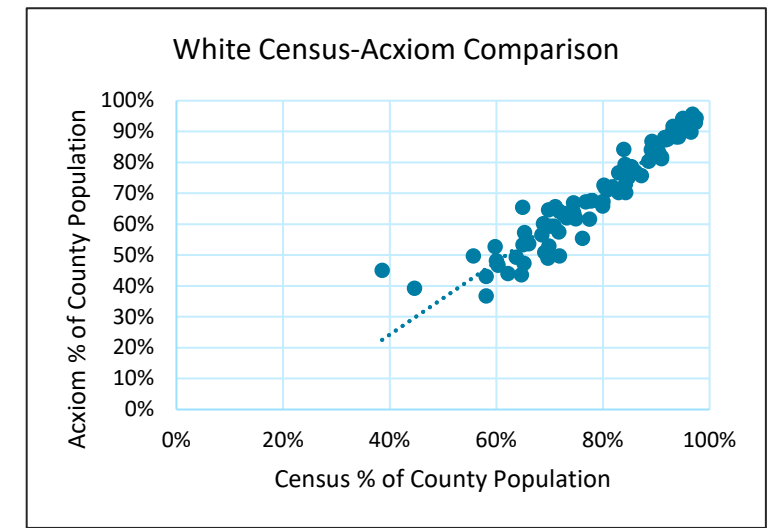
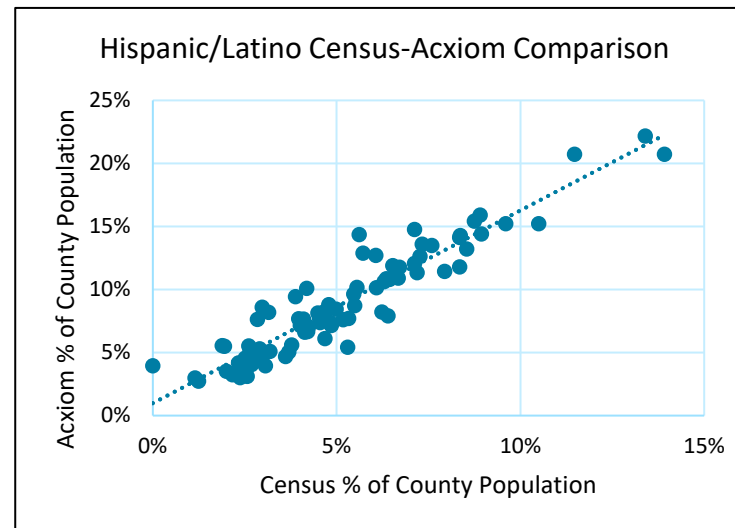
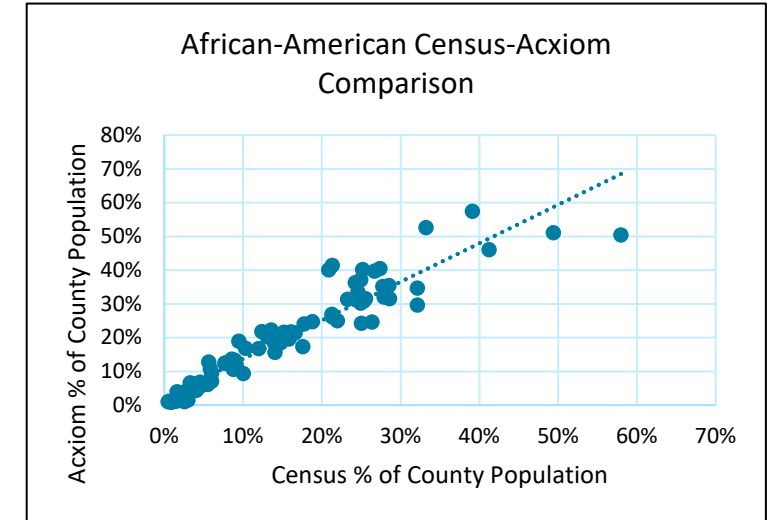
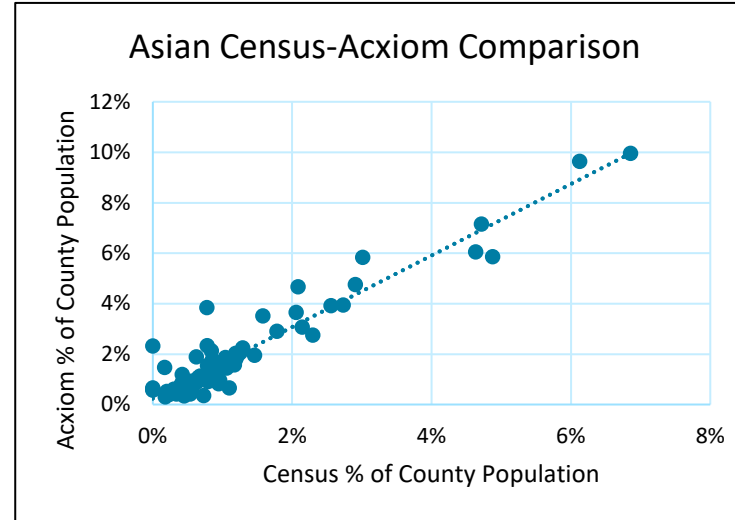
Income: age, occupation, home ownership, and median income for the local area



Optimize to resemble US Census norms at the highest accuracy rate possible

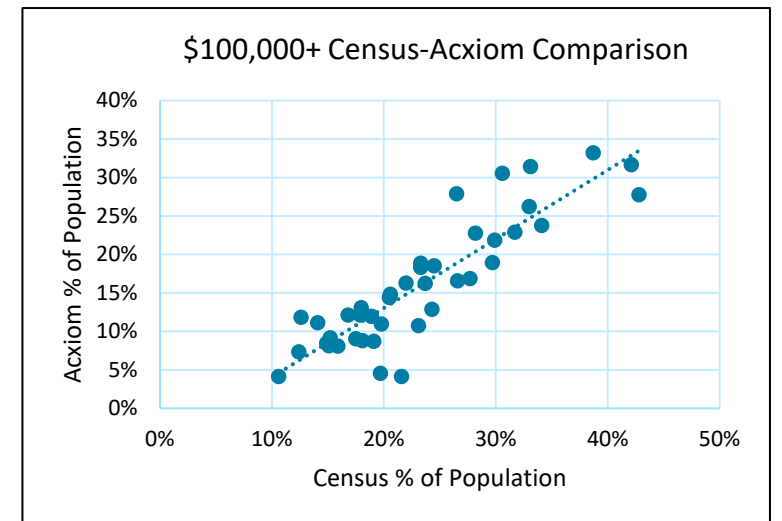
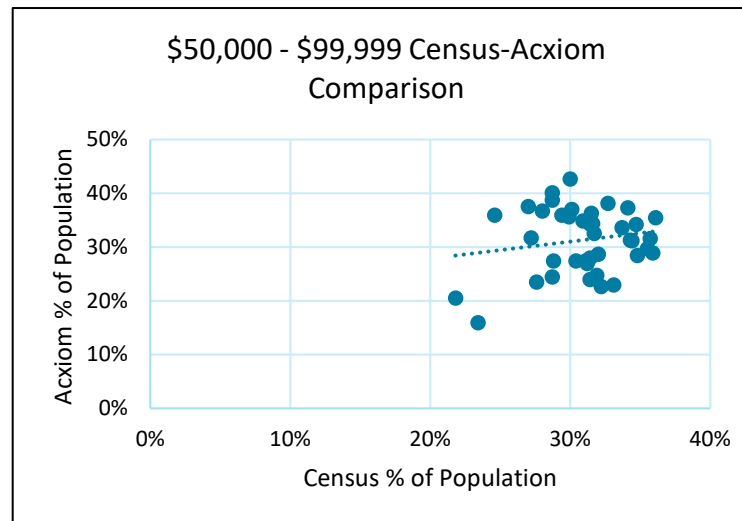
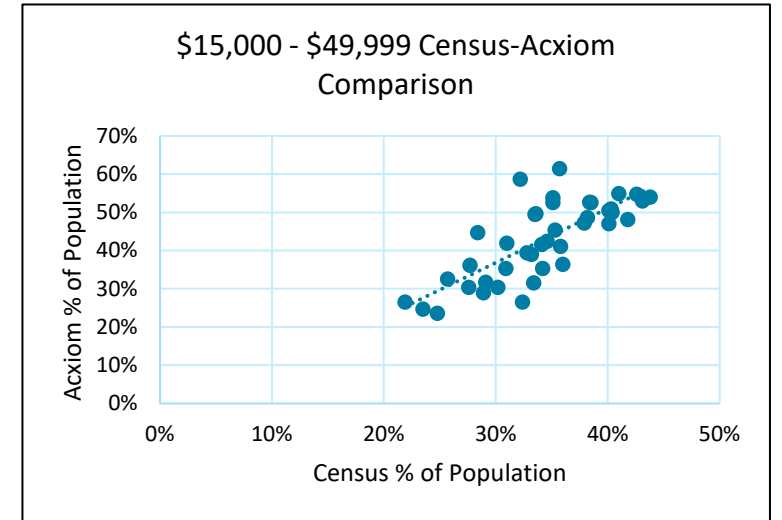
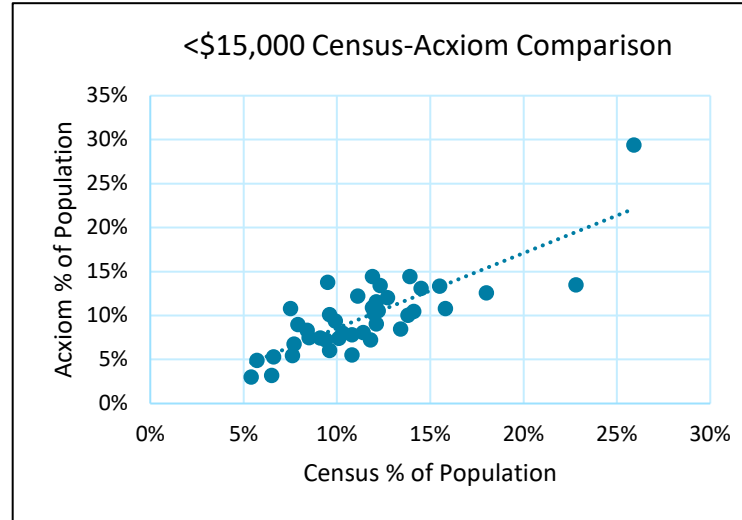
Balancing happens at a state level for most variables

- Acxiom and Census results are similar when comparing counties by the racial makeups
- Acxiom slightly overestimates Hispanic/Latino, African-American, and Asian populations compared to the Census, while underestimating White population
- Acxiom data is at the Duke account level, which could explain the slight disparities
 - This count only includes one adult per household
 - This would not include households not served by Duke Energy



Hispanic/Latino were consolidated in the Census and Acxiom

- Acxiom and Census results are similar when comparing counties by the income levels
- Acxiom slightly overestimates lower incomes compared to the Census, while underestimating higher incomes



Acxiom Modeling Results

Data Source	<150%	150% to 200%	>200%
Household/ Household Inferred	88.0%	88.0%	94.5%
Zipcode+4	10.4%	8.0%	3.8%
Zip code	1.6%	4.0%	1.7%

Includes Income & number of people in household

Overview of Data Analysis Conducted

- The Federal Poverty Level (“FPL”) is a measure of income **per household member**
- *Relationship of Household Income to FPL* is a common way to classify by income
- Shortfalls of using this metric:
 - Indicator lags up to a year
 - Does not capture recent changes to status (e.g., job loss, family catastrophe, etc.)
 - Does not account for those with high access to economic resources (i.e., wealthy with low or no reportable income)

150% of Federal Poverty Level

Household Size	Maximum Countable Annual Income
1	\$19,320
2	\$26,130
3	\$32,940
4	\$39,750
5	\$46,560
6	\$53,370
7	\$60,180
8	\$66,990

Arrears: Money that is past due

Intended to supplement, not replace, other measures of struggling customers

Intended for analytical purposes

1

Direct measure of how much customers are struggling to pay their bills

2

Should identify low economic resource customers that could be **struggling for many reasons**, not only low-income



3



High quality data source, updated monthly

Assessing Customer Demographics: Income Level + Account Status



-  Requires 3rd party survey data (impacting data accuracy)
-  Requires 3rd party verification for program eligibility use
-  Not a good indicator of access to economic resources

**Income
(FPL)**



-  Industry Standard Metric
-  Despite drawbacks is believed to be a good metric

-  Does not reflect level of high energy burden
-  Does not alone capture low-income population

**Payment
Status
(Arrears)**

-  Analyzes customers struggling to keep the lights on
-  Readily accessible, high-quality data

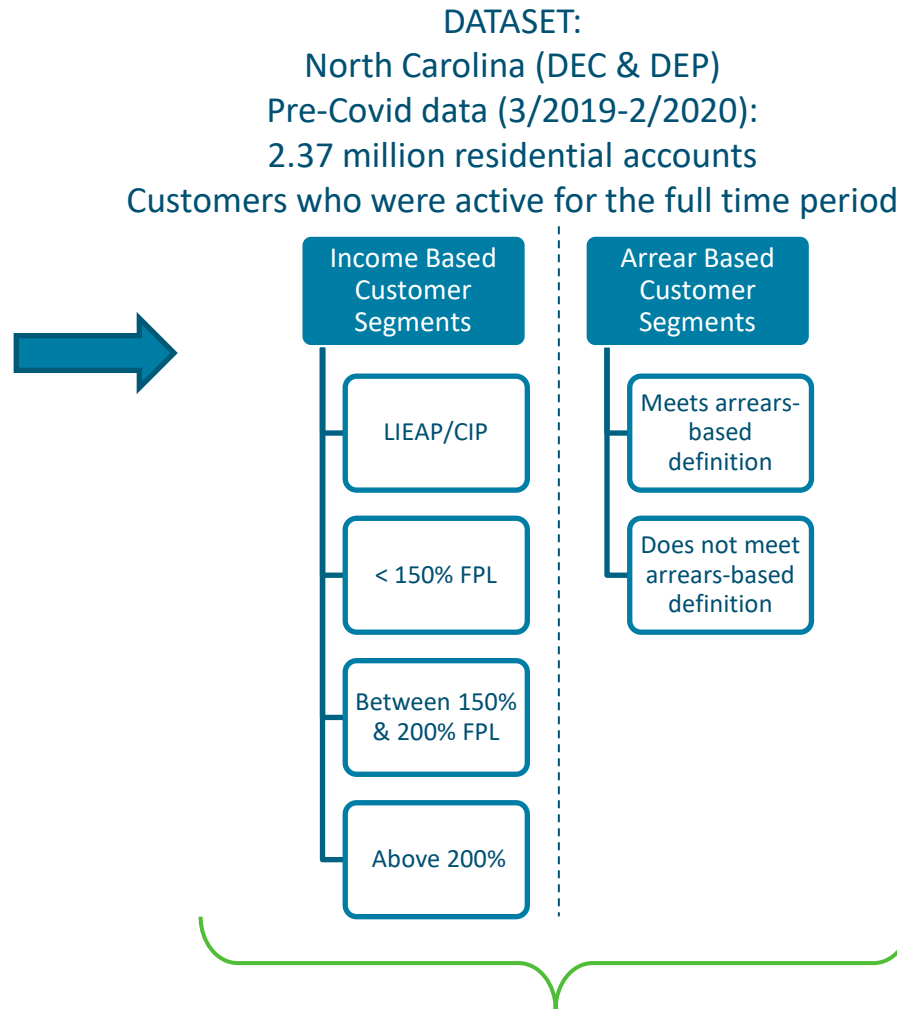
OUR APPROACH:
Combining Income + Payment Status

-  • **Good data:** accessible, higher-quality
-  • **Good for targeting:** identifies those struggling with energy affordability; identifies those with high energy burdens

Third Party Data

- Demographics (income range, number of people in household, etc.)
- Housing Data (housing type, square footage, owner/renter, etc.)
- Duke Energy choice of demographic data, updated quarterly
- Uses aggregated public data on individuals or zip code averages
- Directionally valid, not to be used for eligibility
- LIEAP/CIP data quality believe to be excellent*

*LIEAP/CIP data is from 2021, after the study time period

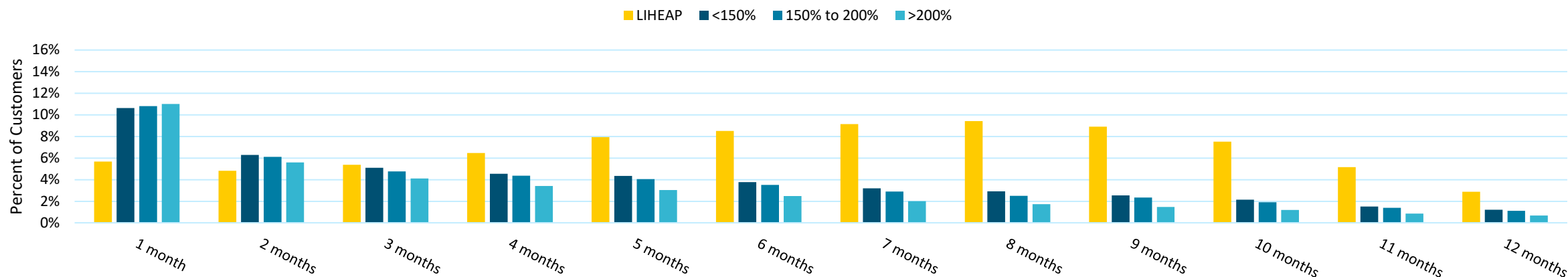


Company Billing Data

- Billing and charges data (charges, past due amounts, disconnects)
- Customer Data (location, heating type, age, etc.)
- High quality, updated monthly, unique to the Companies data source

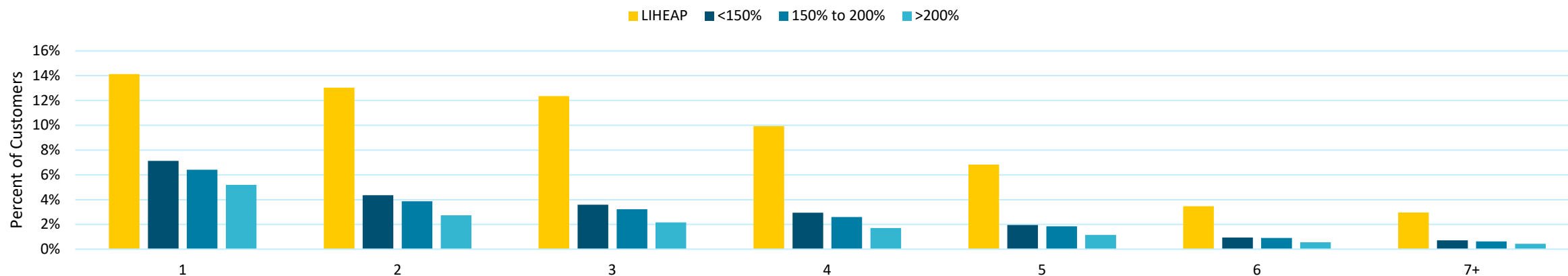
By considering income and arrearage status the Companies can better identify customers who may truly be struggling to afford their energy bills

Months Spent with Past Due Amount 1x Average Bill



*Numbers are mutually exclusive

Months Spent with Past Due Amount 2x Average Bill



*Numbers are mutually exclusive

EXPECTATIONS (HYPOTHESIS):

- LIEAP/CIP recipients are much more likely to struggle to stay current on their bill – must have low financial reserves or be in an energy crisis in addition to being low-income
- Not all struggling/vulnerable/low-income customers will struggle with arrears (as some simply prioritize electricity bill over other expenses and others receive assistance)
- Some customers above 200% FPL struggle to pay their bill
- Some customers will miss payments for non-financial reasons

Evaluated metrics to arrive a definition of customers struggling with arrears:

- High % of customers below 200% FPL
- High % of LIEAP/CIP recipients
- Low % of Customers above 200% FPL
- Reasonable total % of the population

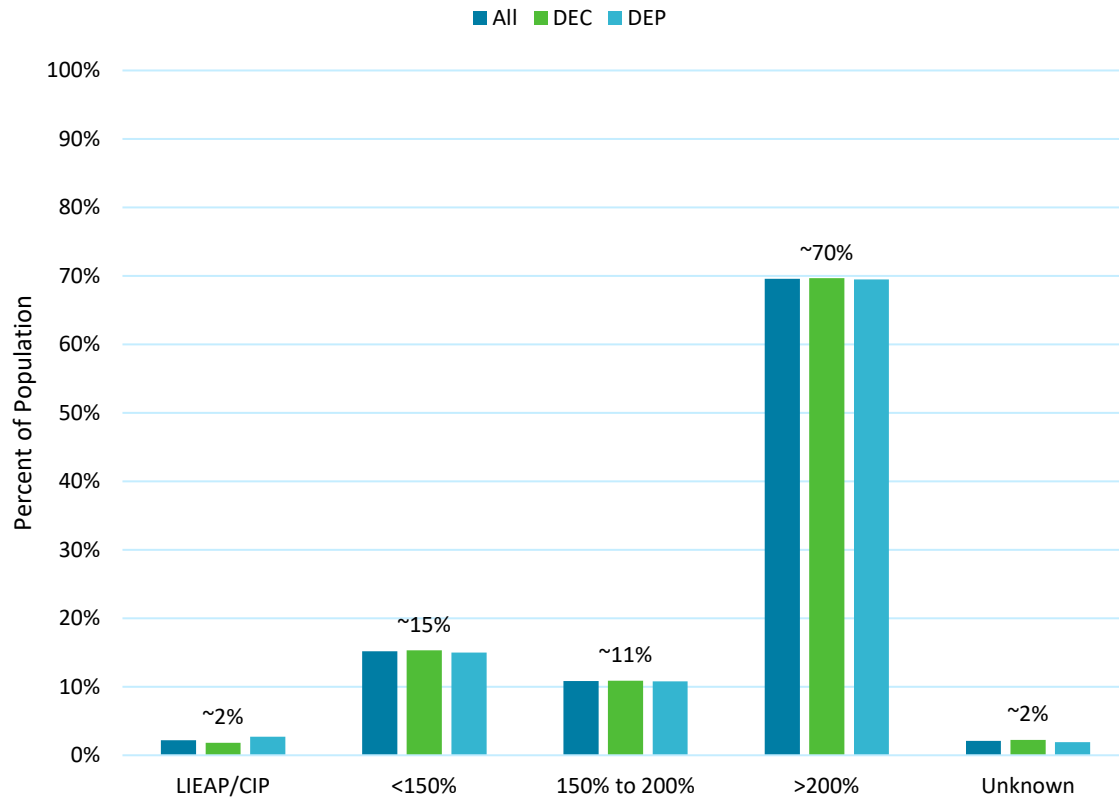
Arrears Segmentation for Analytics	% of Customer that meet Arrears Definition				
	Customers LIEAP/CIP	Customers < 150% FPL	Customers 150-200% FPL	Customers >200% FPL	Total Customer Population
2 Months spent at 2x average bill overdue OR 6 Months spent at 1x average bill overdue	57%	21%	18%	13%	15%

Definition not used to define affordability or eligibility for different programs

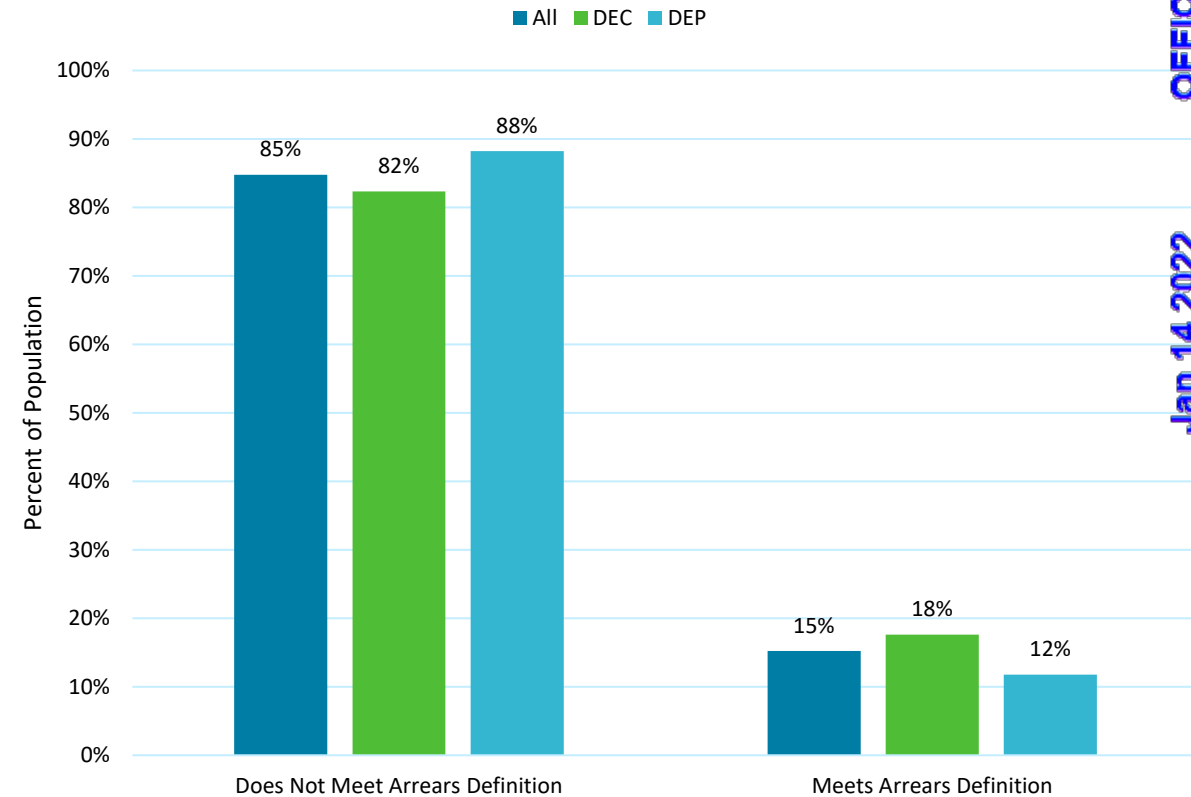
Analysis of NC Customers

**As we look at sub-categories of customers, we had to remove some data due to privacy and accuracy concerns. This will be represented by grey bars in the graphs.*

Segmentation by Income

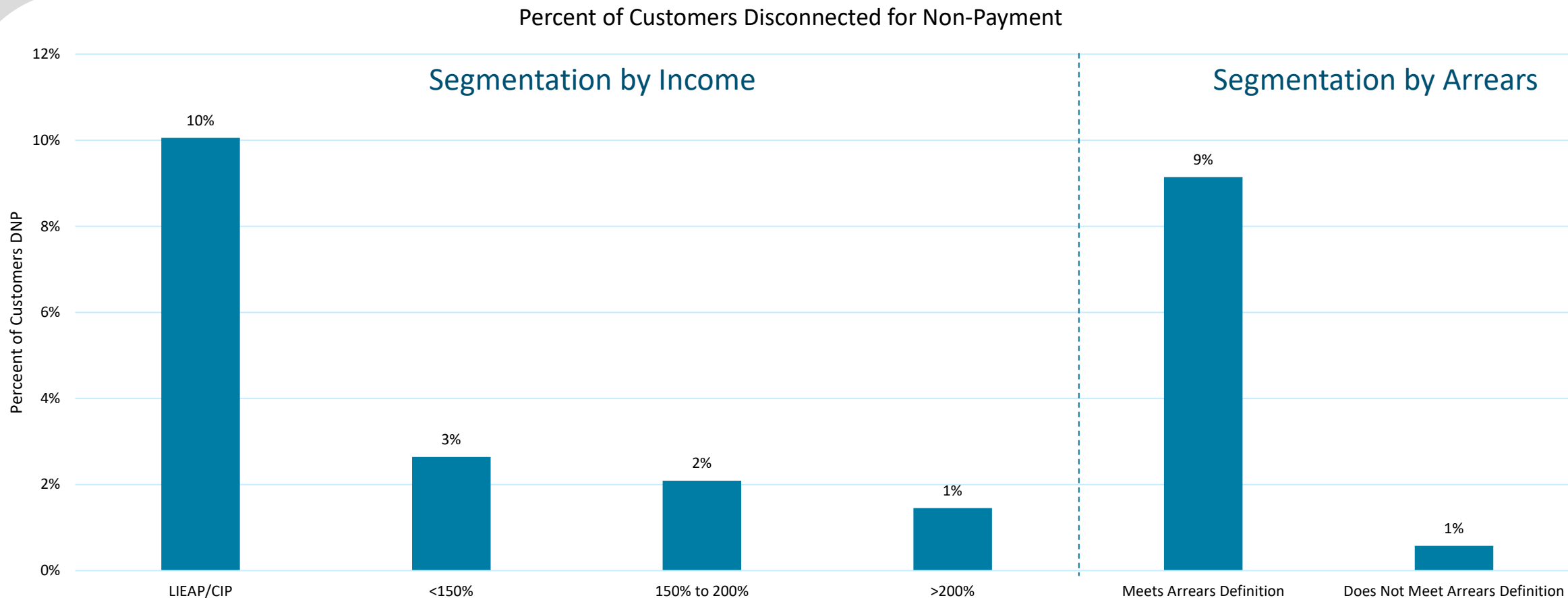


Segmentation by Arrears



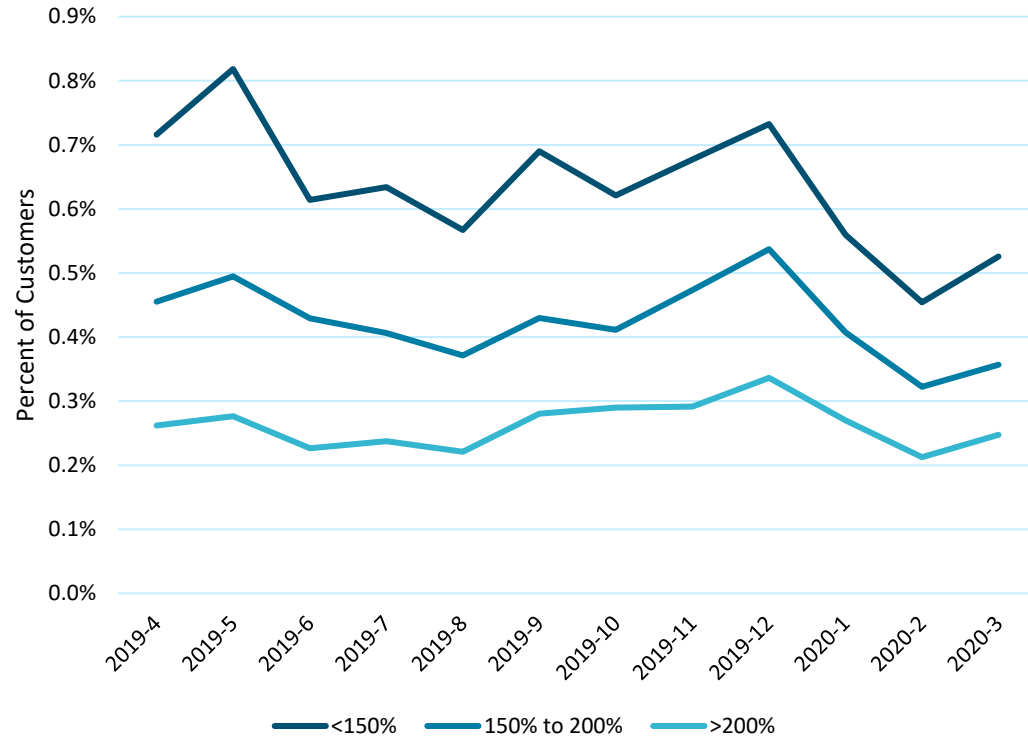
Recovered additional historic Acxiom data from this time period to decrease the amount of Unknown from version 1

- Some customers did not have income information in the third-party data
- No major differences between DEC and DEP customers

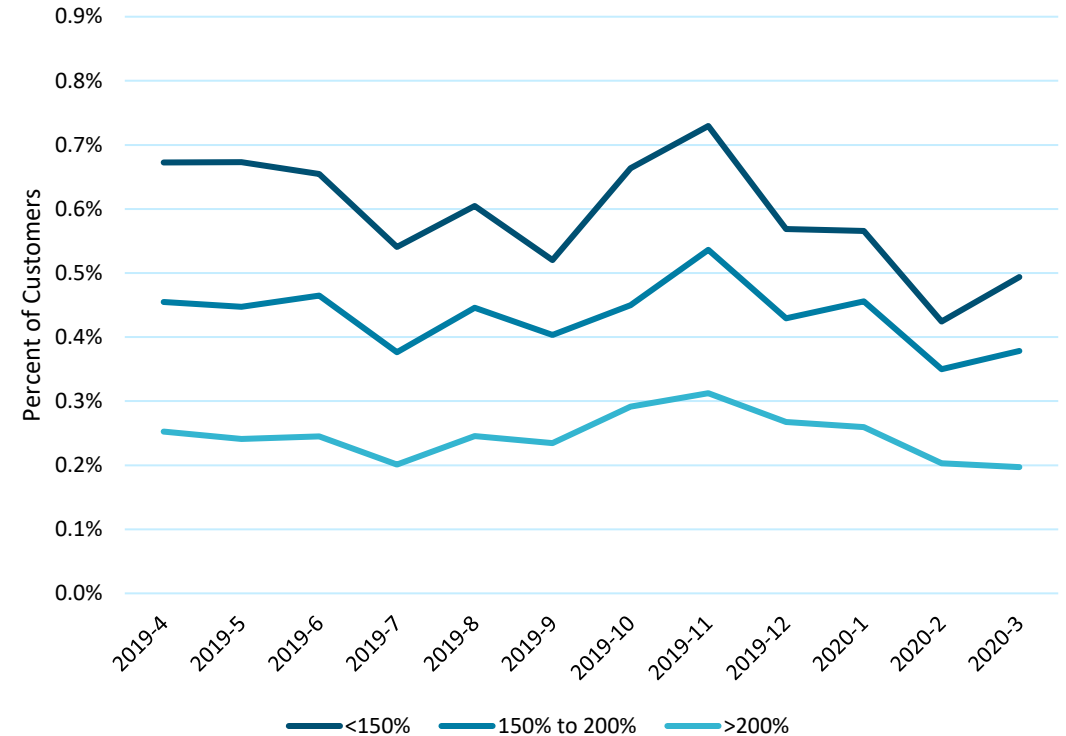


- We see a higher percentage of LIEAP/CIP customers and customers who meet the Companies' arrears definition disconnected for non-pay (DNP)
- Similar percent of population for LIEAP/CIP (2% of population) and customers that meet arrears definition (15% of population)
- Helps validate that the included FPL data is directionally correct and arrears definition is capturing struggling customers

DEC Charge-Off PCT



DEP Charge-Off PCT



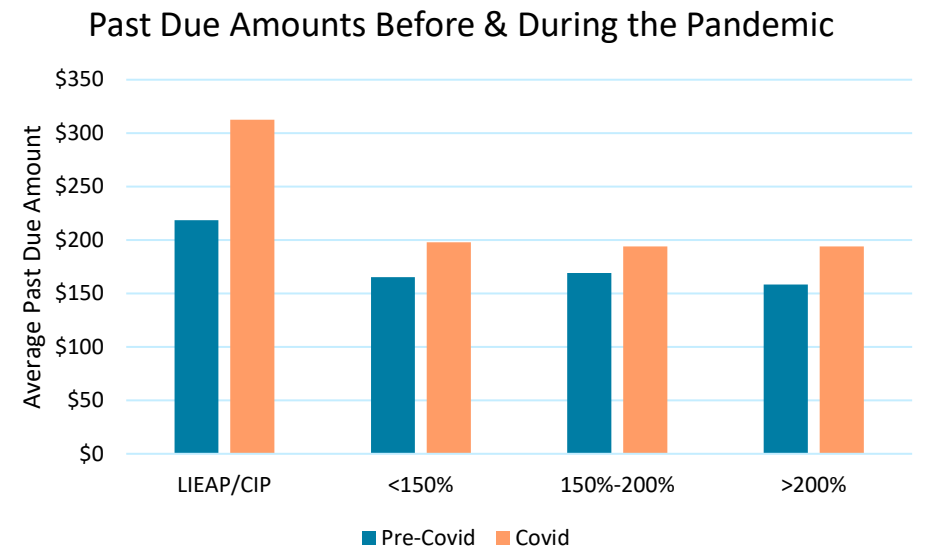
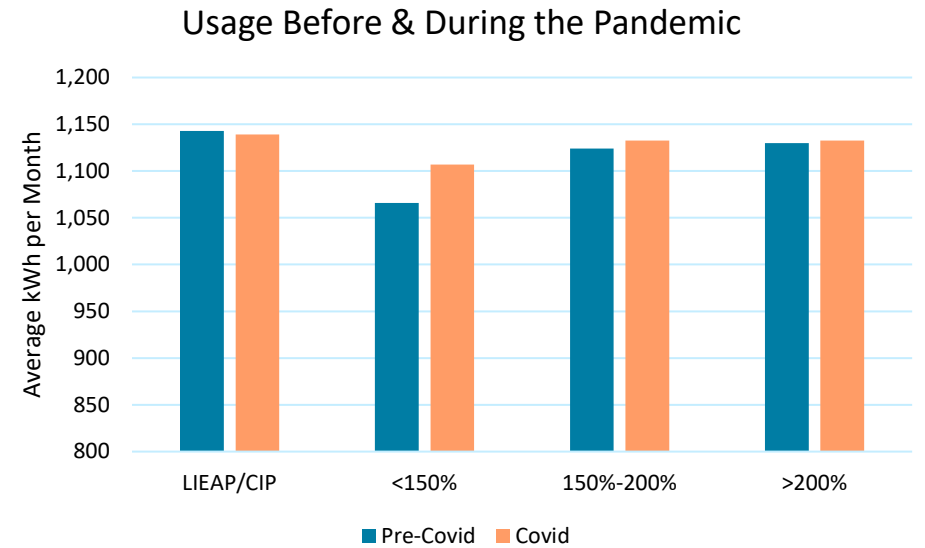
of customers charged off in that month / (# of active customers in that month + customers charged off)

- Charge-off is for customers who closed their account but still owed money and ended up in collection
- This population is on customers who closed their account during this time period, while the rest of the analysis is based on a population that was active the entire time period
- Charge-off customers were all closed by March 1, 2020, and the LIEAP/CIP list is from 2021

Data Shows Limited Impact of the Pandemic on Key Metrics

- Usage did not meaningfully change for residential customers
 - Affected by weather in addition to changes in customers' consumption habits
 - Consistent with Load Research data and similar to other Southeast utilities

- Past due amounts (i.e., arrears) grew significantly for LIEAP/CIP customers and slightly for customers with incomes less than 200% FPL
 - The disconnection moratorium likely affected payment behaviors for some customers



Analysis by Housing Type, Housing Status, and Heating Source

Housing Type: Single Family or Multi-Family

Housing Status: Owner or Renter

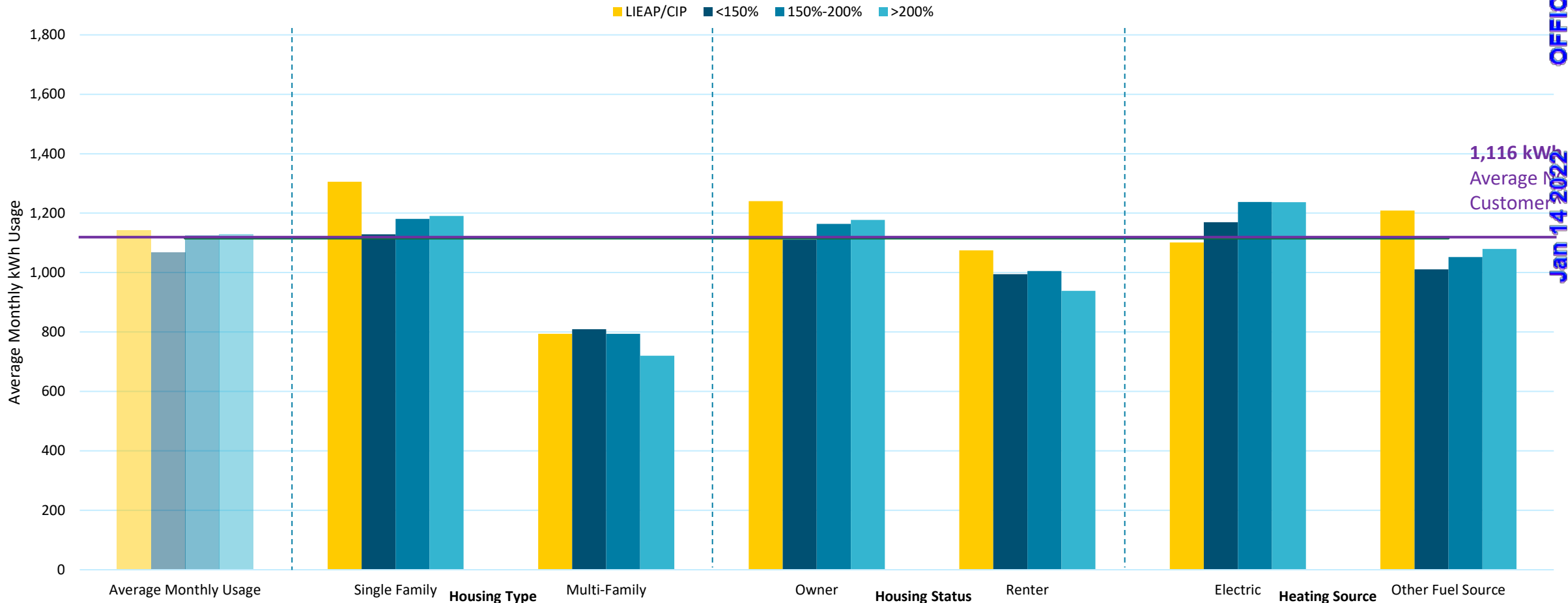
Heating Source: Electric or Other Fuel Source



Average Monthly Usage by Income for Housing Type, Housing Status, and Heating Source

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Monthly Usage by Housing Type, Housing Status, and Heating Source



1,116 kWh
Average Monthly
Usage per
Customer

Jan 14 2022

% Total Customers in Category*	98%	82%	12%	74%	24%	37%	46%
	Average Monthly Usage	Single Family	Multi-Family	Owner	Renter	Electric	Other Fuel Source

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

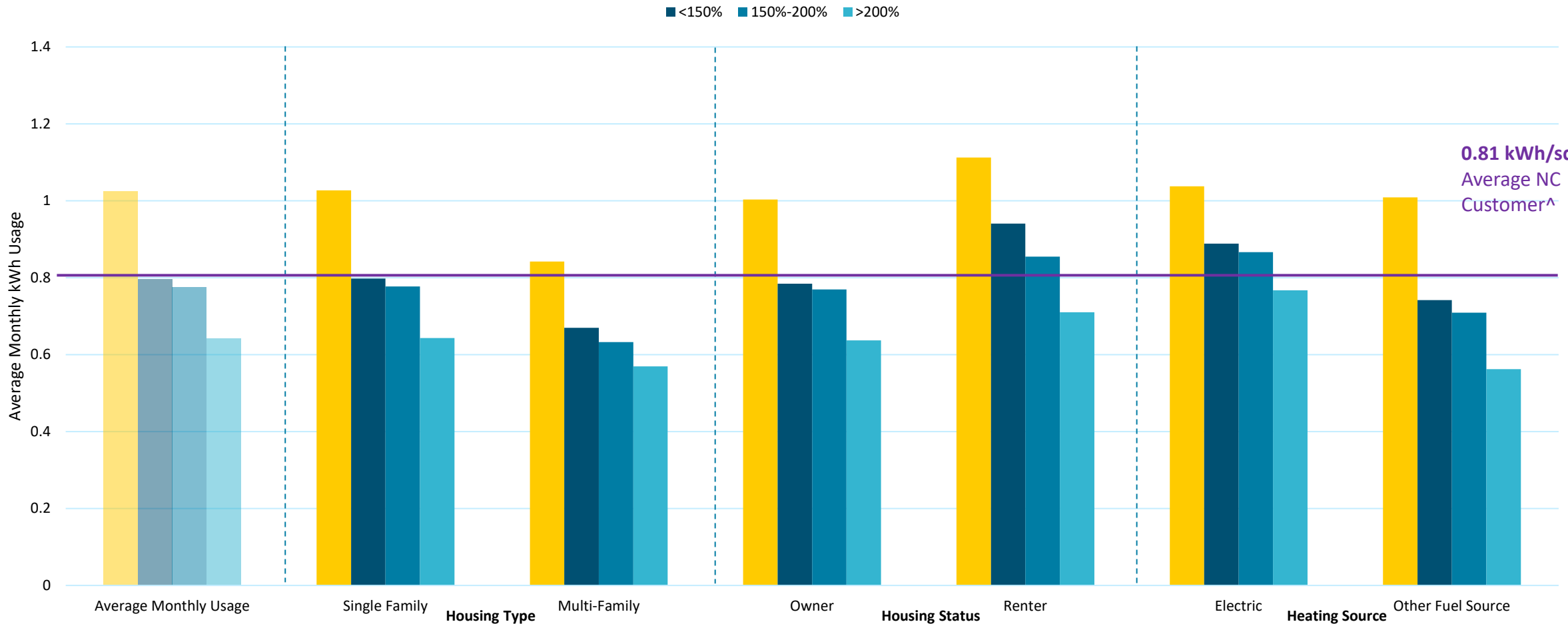
^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage per Square foot by Income for Housing Type, Housing Status and Heating Source

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Average Monthly kWh/Sqft by Housing Type, Housing Status, and Heating Source



% Total Customers in Category*	98%	82%	12%	74%	24%	37%	46%

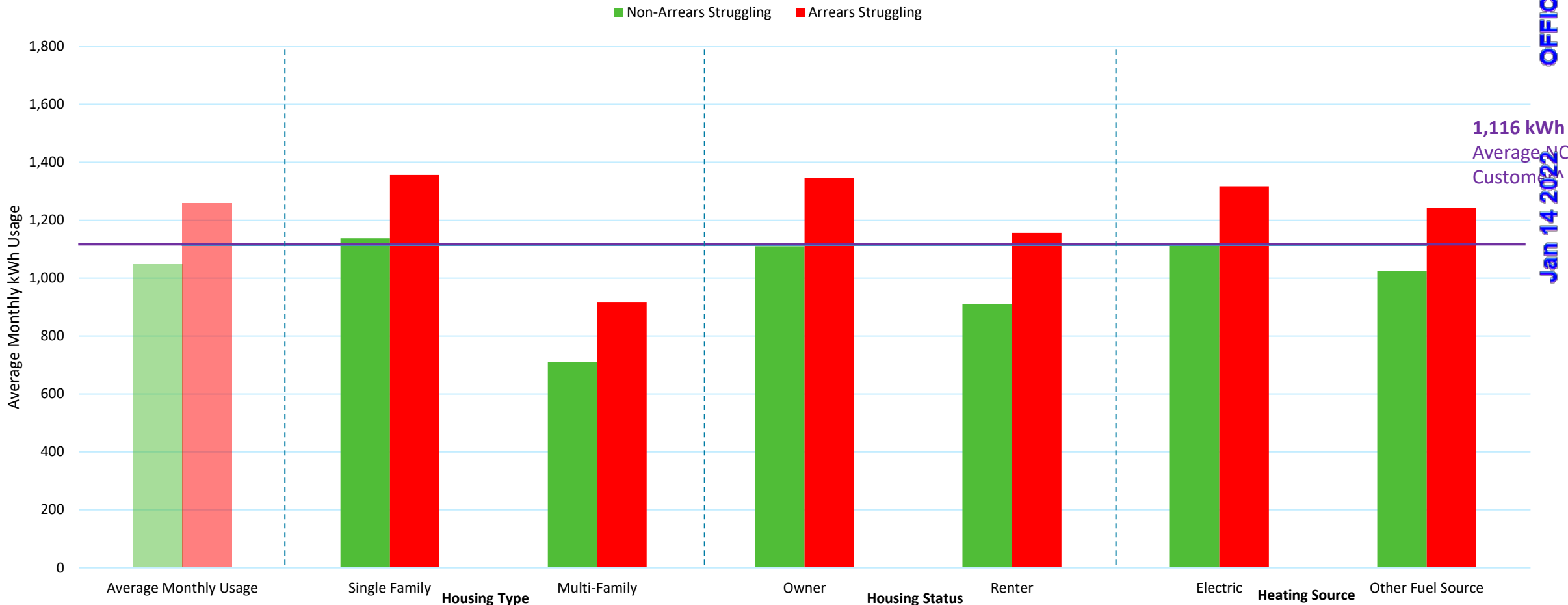
*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage by Arrearage Status for Housing Type, Housing Status, and Heating Source

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Monthly Usage by Housing Type, Housing Status, and Heating Source



Jan 14 2022

% Total Customers in Category*	100%	82%	12%	74%	24%	37%	46%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

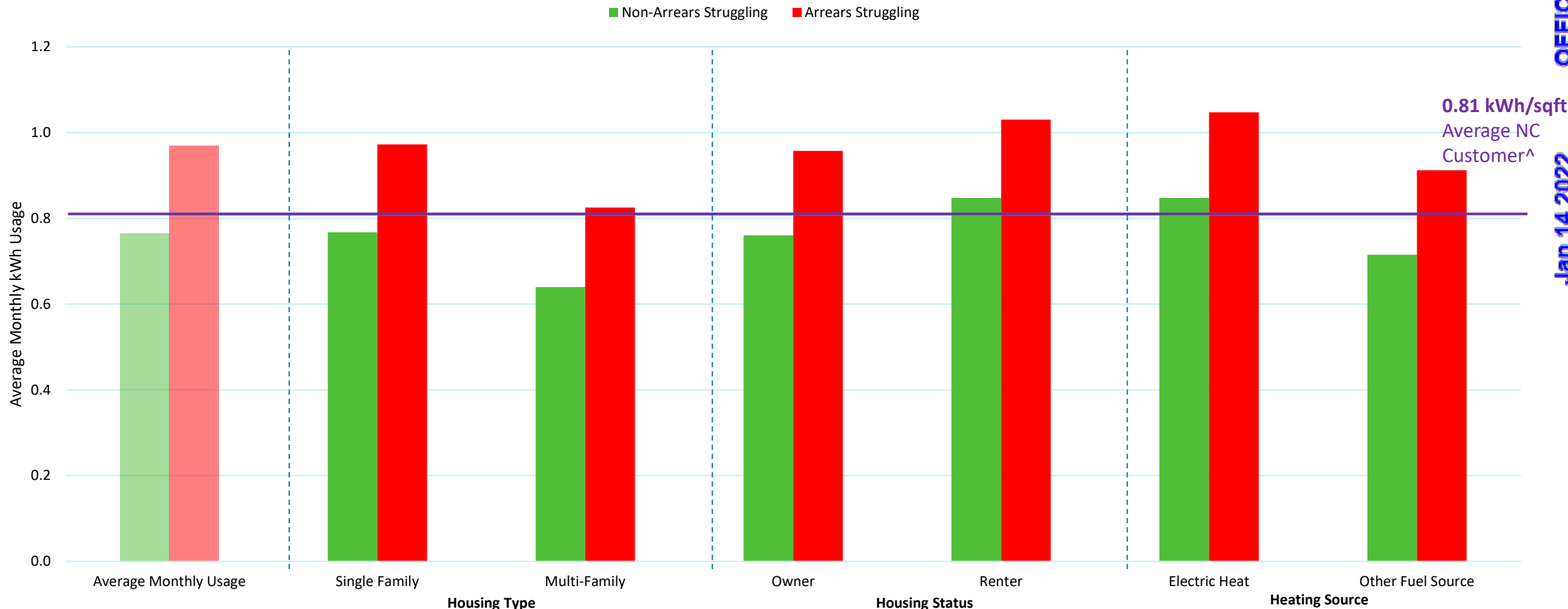


Average Monthly Usage per Square Foot by Arrearage Status for Housing Type, Housing Statue, and Heating Source

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Jan 14 2022

Monthly Usage by Housing Type, Housing Status, and Heating Source



% Total Customers in Category*	Housing Type			Housing Status		Heating Source	
100%	82%	12%	74%	24%	37%	46%	

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

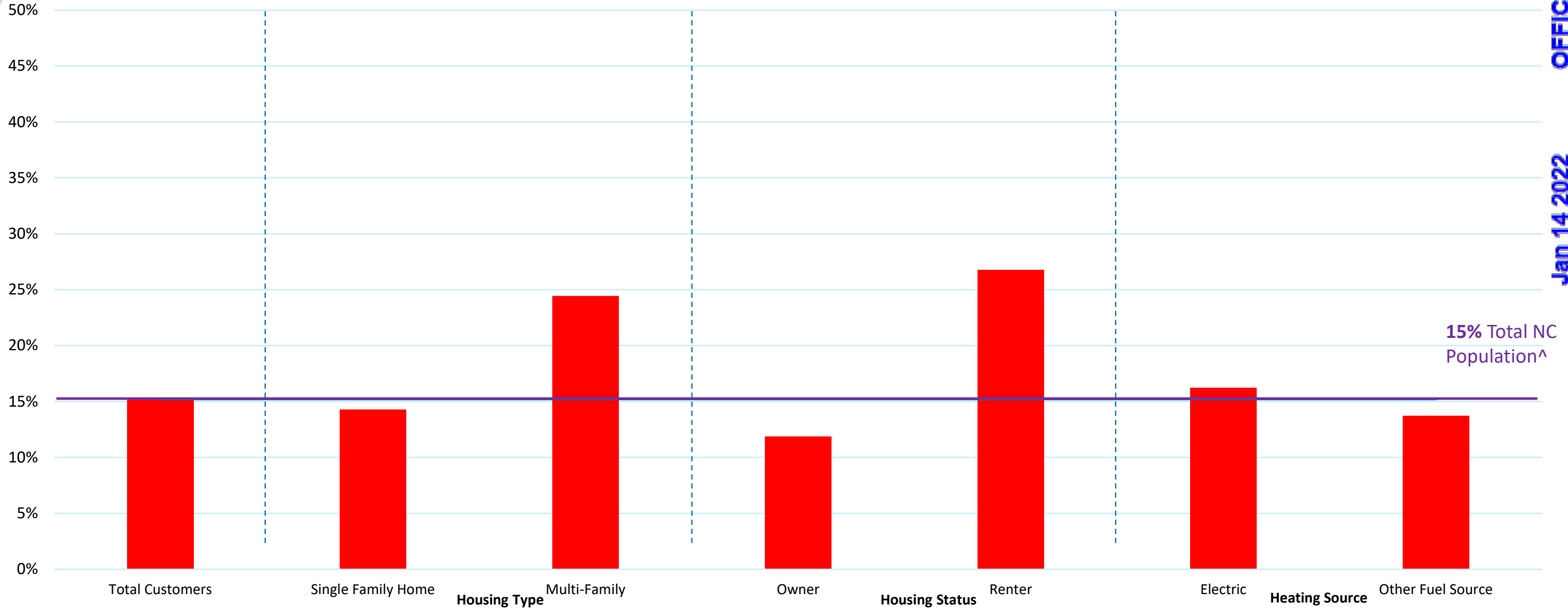
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Percent of Customers in Arrears for Housing Type, Housing Status, and Heating Source

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Jan 14 2022

Percent of Customers in Arrears by Housing Type, Housing Status, and Heating Source



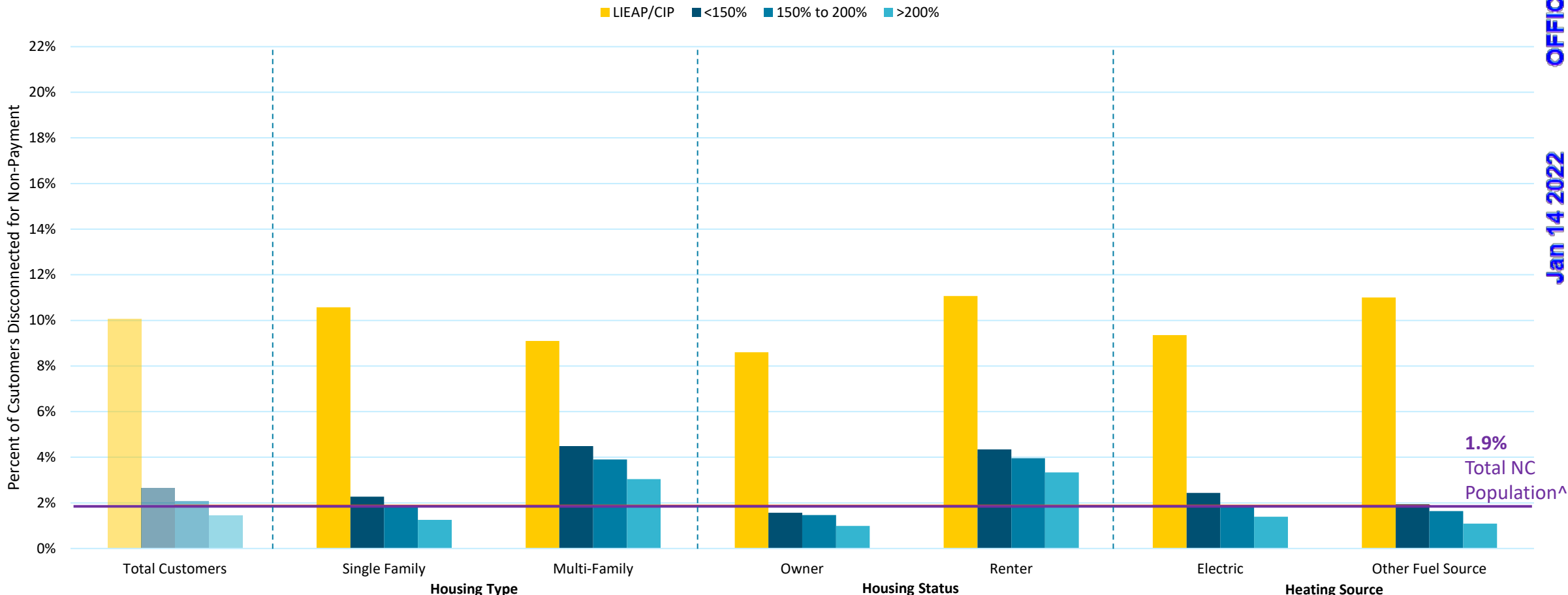
15% Total NC Population[^]

% Total Customers in Category*	100%	82%	12%	74%	24%	37%	46%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Percent of DNP by Housing Type, Housing Status, and Heating Source



1.9%
Total NC
Population[^]

% Total Customers in Category*	Housing Type			Housing Status		Heating Source	
	98%	82%	12%	74%	24%	37%	46%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
LIEAP/CIP	52,028	34,084	16,149	21,179	30,802	31,290	18,982
<150% FPL	360,934	276,514	62,450	220,982	139,952	137,682	161,184
150%-200% FPL	258,004	216,235	27,495	193,380	64,624	104,286	115,486
>200%	165,2317	1,422,799	180,336	1,326,020	326,297	608,292	787,181
Total	2,323,283	1,949,632	286,430	1,761,561	561,675	881,550	1,082,833

Percent of Customers in each Segment							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
LIEAP/CIP	2%	1.5%	0.7%	0.9%	1.3%	1.3%	0.8%
<150% FPL	16%	11.9%	2.7%	9.5%	6.0%	5.9%	6.9%
150%-200% FPL	11%	9.3%	1.2%	8.3%	2.8%	4.5%	5.0%
>200%	71%	61.2%	7.8%	57.1%	14.0%	26.2%	33.9%

Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
Meets Arrears	361,453	278,887	70,022	209,102	150,435	143,288	148,651
Does not Meet Arrears	2,012,425	1,670,922	216,413	1,552,622	411,265	738,340	934,286

Percent of Customers in each Segment							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
Meets Arrears	15.2%	11.7%	2.9%	8.8%	6.3%	6.0%	6.3%
Does not Meet Arrears	84.8%	70.4%	9.1%	65.4%	17.3%	31.1%	39.4%

Total Numbers							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
LIEAP/CIP	5,231	3,605	1,469	1,822	3,408	2,928	2,088
<150% FPL	9,540	6,292	2,803	3,462	6,078	3,358	3,131
150%-200% FPL	5,390	4,046	1,074	2,835	2,555	1,980	1,890
>200%	23,981	17,804	5,485	13,089	10,891	8,472	8,610
Total	44,142	31,747	10,831	21,208	22,932	16,738	15,719

Percent of Customers in that Segment DNP (i.e., percent of Single Family customers DNP)							
	Total Customers	Single Family	Multi-Family	Owner	Renter	Electric Heat	Other Fuel Source
LIEAP/CIP	10.1%	10.6%	9.1%	8.6%	11.1%	9.4%	11.0%
<150% FPL	2.6%	2.3%	4.5%	1.6%	4.3%	2.4%	1.9%
150%-200% FPL	2.1%	1.9%	3.9%	1.5%	4.0%	1.9%	1.6%
>200%	1.5%	1.3%	3.0%	1.0%	3.3%	1.4%	1.1%

Analysis by Housing Location and Housing Value

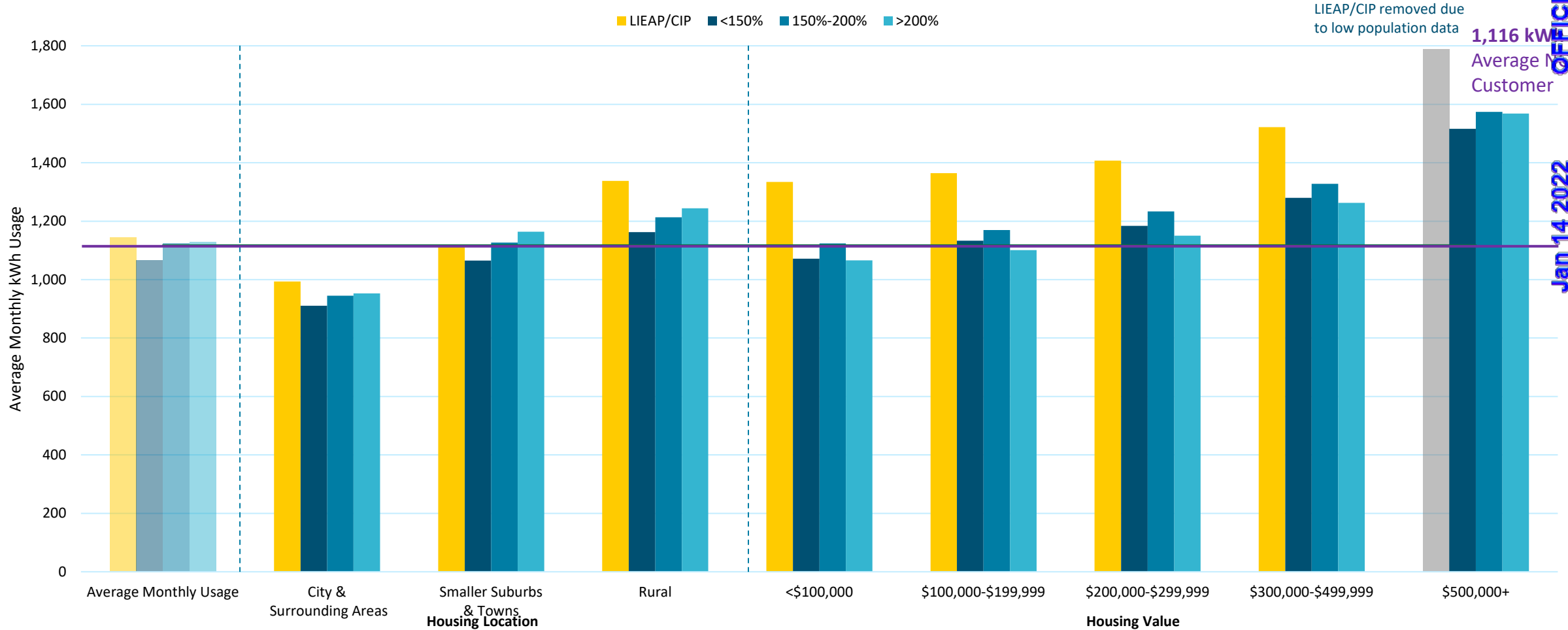
Housing Location: City & Surrounding Area, Smaller Suburbs & Towns, Rural

Housing Value: <\$100,000, \$100,000-\$199,999, \$200,000-\$299,999, \$300,000-\$499,999, \$500,000+

Average Monthly Usage by Income for Location and Housing Value

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Monthly Usage by Location and Housing Value



LIEAP/CIP removed due to low population data
1,116 kWh
 Average Monthly Usage
 All Customers

Jan 14 2022

% Total Customers in Category*	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
98%	23%	49%	26%	7%	22%	16%	13%	5%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

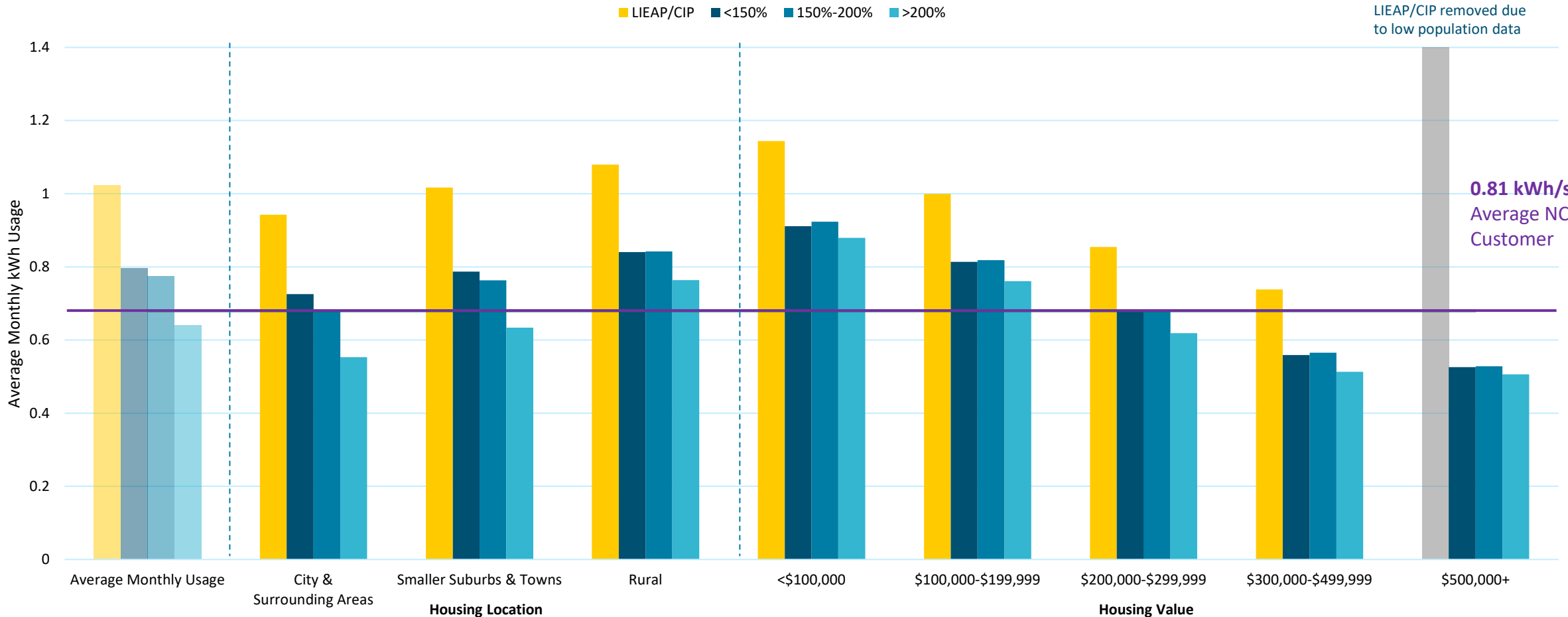
^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage per Square foot by Income for Location and Housing Value

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Jan 14 2022

Average Monthly kWh/Sqft by Location and Housing Value



LIEAP/CIP removed due to low population data

0.81 kWh/sqft
Average NC Customer

% Total Customers in Category*	98%	23%	49%	26%	7%	22%	16%	13%	5%
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*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

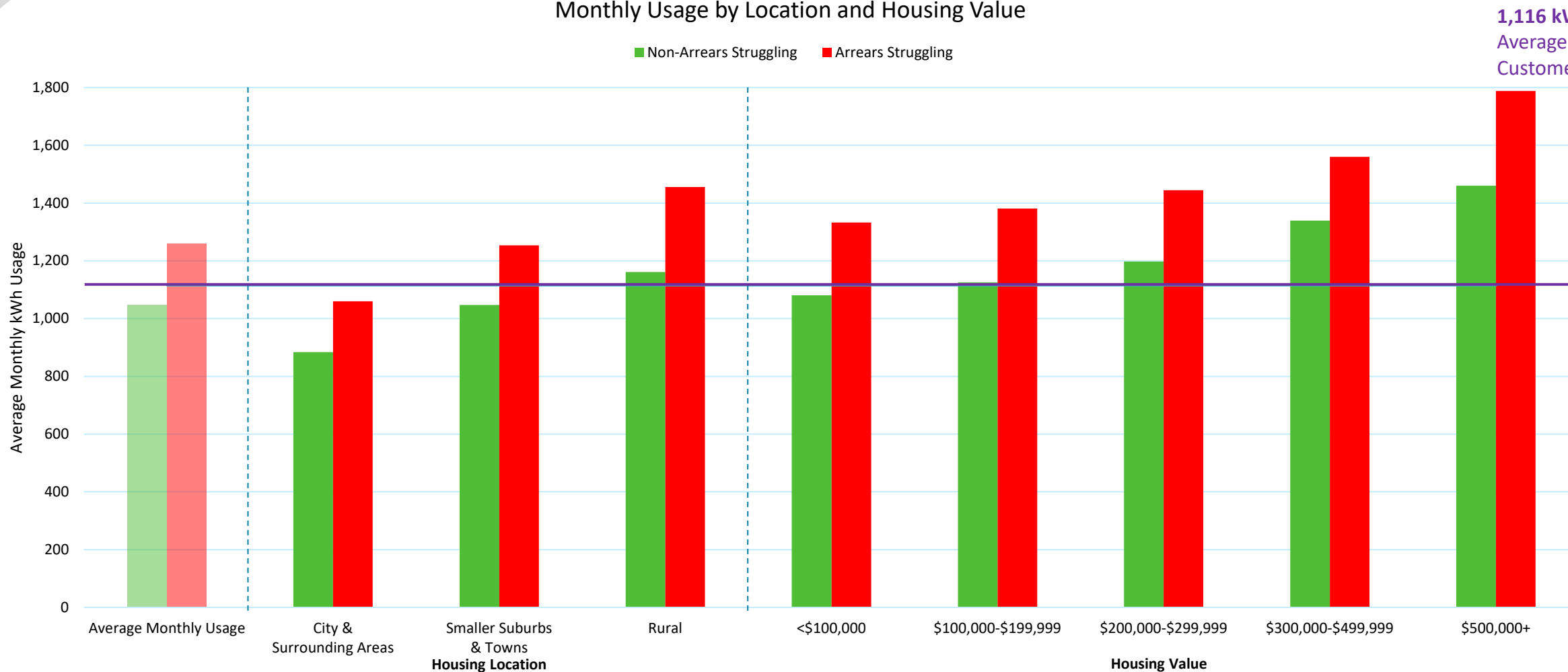
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Average Monthly Usage by Arrearage Status for Location and Housing Value

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Jan 14 2022

Monthly Usage by Location and Housing Value



	Housing Location				Housing Value				
% Total Customers in Category*	100%	23%	49%	26%	7%	22%	16%	13%	5%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

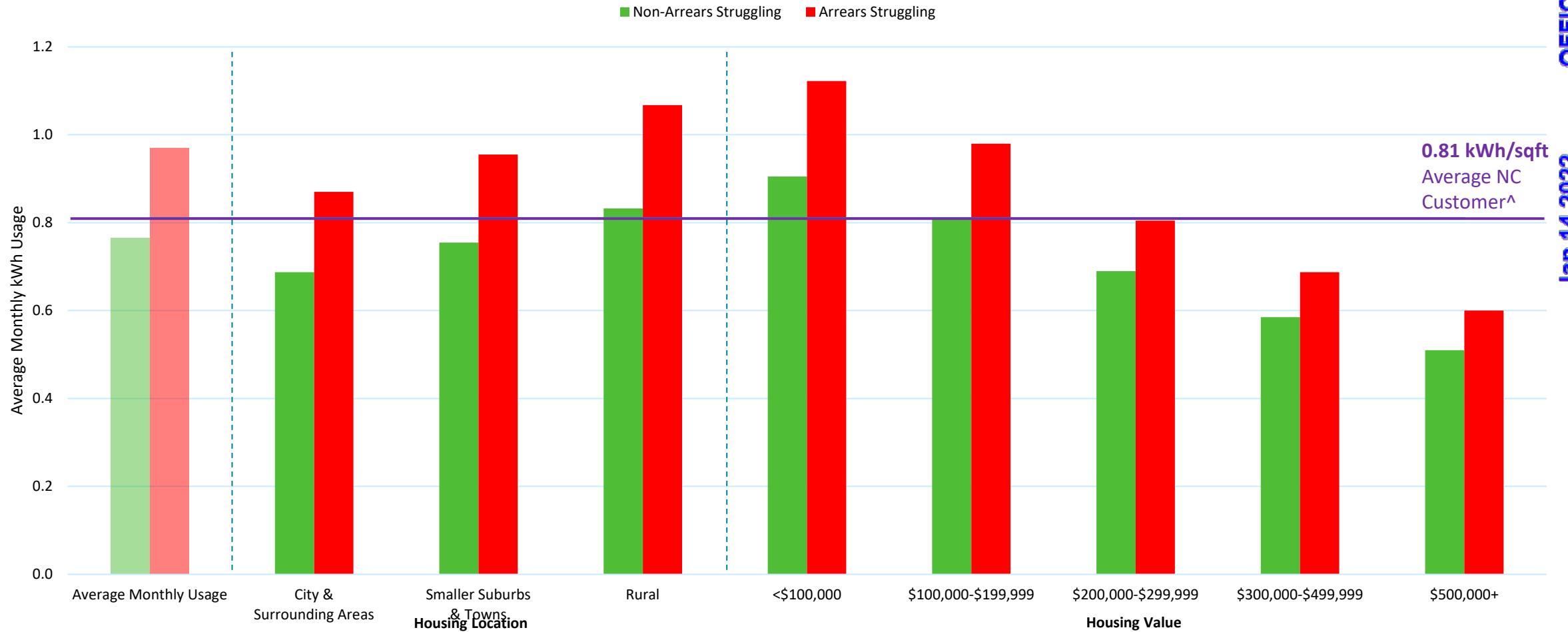
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Average Monthly Usage per Square Foot by Arrearage Status for Location and Housing Value

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Monthly Usage by Location and Housing Value



% Total Customers in Category*	100%	23%	49%	26%	7%	22%	16%	13%	5%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

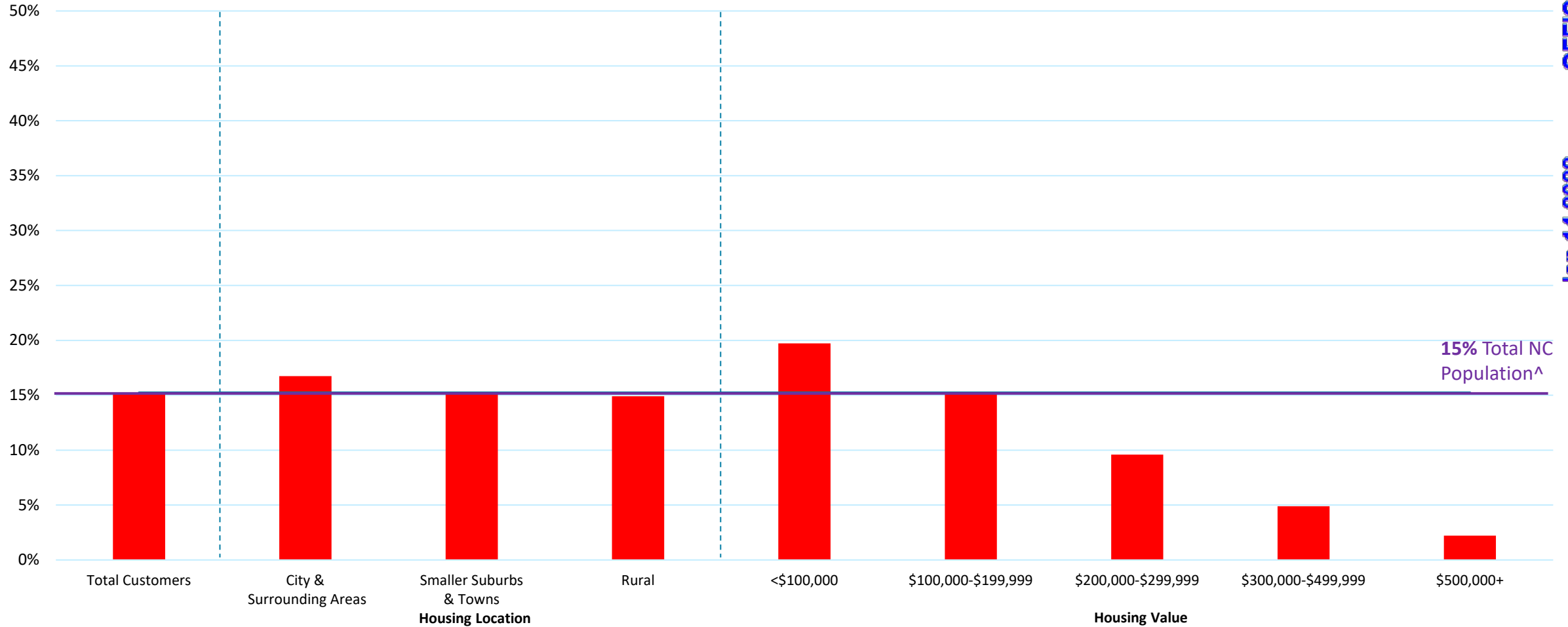
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Percent of Customers in Arrears for Location and Housing Value

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Percent of Customers in Arrears by Location and Housing Value



15% Total NC Population^

% Total Customers in Category*

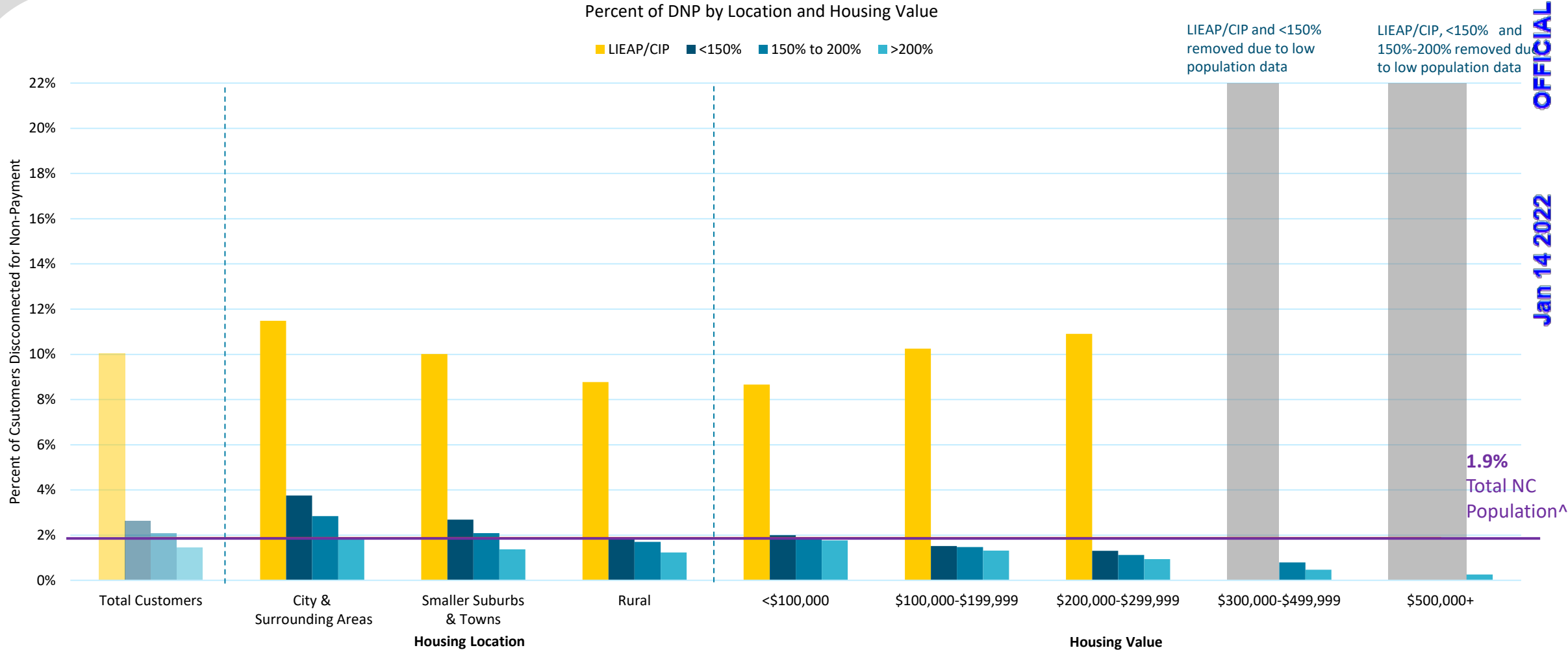
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^The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Percent of DNP by Income for Location and Housing Value

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% Total Customers in Category*	Total Customers	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
	98%	23%	49%	26%	7%	22%	16%	13%	5%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Total Numbers								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
LIEAP/CIP	13,516	24,509	13,956	4,444	5,971	1,605	338	--
<150% FPL	77,809	156,085	127,040	49,738	78,648	26,857	12,374	3,378
150%-200% FPL	47,412	119,386	91,206	29,197	73,774	31,747	16,075	3,922
>200%	409,457	864,479	378,381	79,640	375,294	316,415	275,851	118,813
Total	548,194	1,164,459	610,583	163,019	533,687	376,624	304,638	126,113

Percent of Customers in each Segment								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
LIEAP/CIP	0.6%	1.1%	0.6%	0.2%	0.3%	0.1%	0.0%	-
<150% FPL	3.3%	6.7%	5.5%	2.1%	3.4%	1.2%	0.5%	0.1%
150%-200% FPL	2.0%	5.1%	3.9%	1.3%	3.2%	1.4%	0.7%	0.2%
>200%	17.6%	37.2%	16.3%	3.4%	16.2%	13.6%	11.9%	5.1%

Total Numbers								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
Meets Arrears	91,820	176,706	91,011	32,161	80,544	36,110	14,944	2,786
Does not Meet Arrears	456,406	987,833	519,648	130,872	453,177	340,543	289,730	123,409

Percent of Customers in each Segment								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
Meets Arrears	3.9%	7.4%	3.8%	1.4%	3.4%	1.5%	0.6%	0.1%
Does not Meet Arrears	19.2%	41.6%	21.9%	5.5%	19.1%	14.3%	12.2%	5.2%

Total Numbers								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
LIEAP/CIP	1,552	2,454	1,224	385	612	175	-	-
<150% FPL	2,920	4,195	2,425	993	1,196	351	-	-
150%-200% FPL	1,347	2,492	1,551	558	1,086	358	128	-
>200%	7,408	11,887	4,685	1,407	4,947	2,968	1,287	306
Total	13,227	21,028	9,885	3,343	7,841	3,852	1,415	306

Percent of Customers in that Segment DNP (i.e., percent of <\$100,000 customers DNP)								
	City & Surrounding Areas	Smaller Suburbs & Towns	Rural	<\$100,000	\$100,000-\$199,999	\$200,000-\$299,999	\$300,000-\$499,999	\$500,000+
LIEAP/CIP	11.5%	10.0%	8.8%	8.7%	10.2%	10.9%	-	-
<150% FPL	3.8%	2.7%	1.9%	2.0%	1.5%	1.3%	-	-
150%-200% FPL	2.8%	2.1%	1.7%	1.9%	1.5%	1.1%	0.8%	-
>200%	1.8%	1.4%	1.2%	1.8%	1.3%	0.9%	0.5%	0.3%

Analysis by Race and Age of the Account Holder

Race: African American, Asian, Hispanic, White

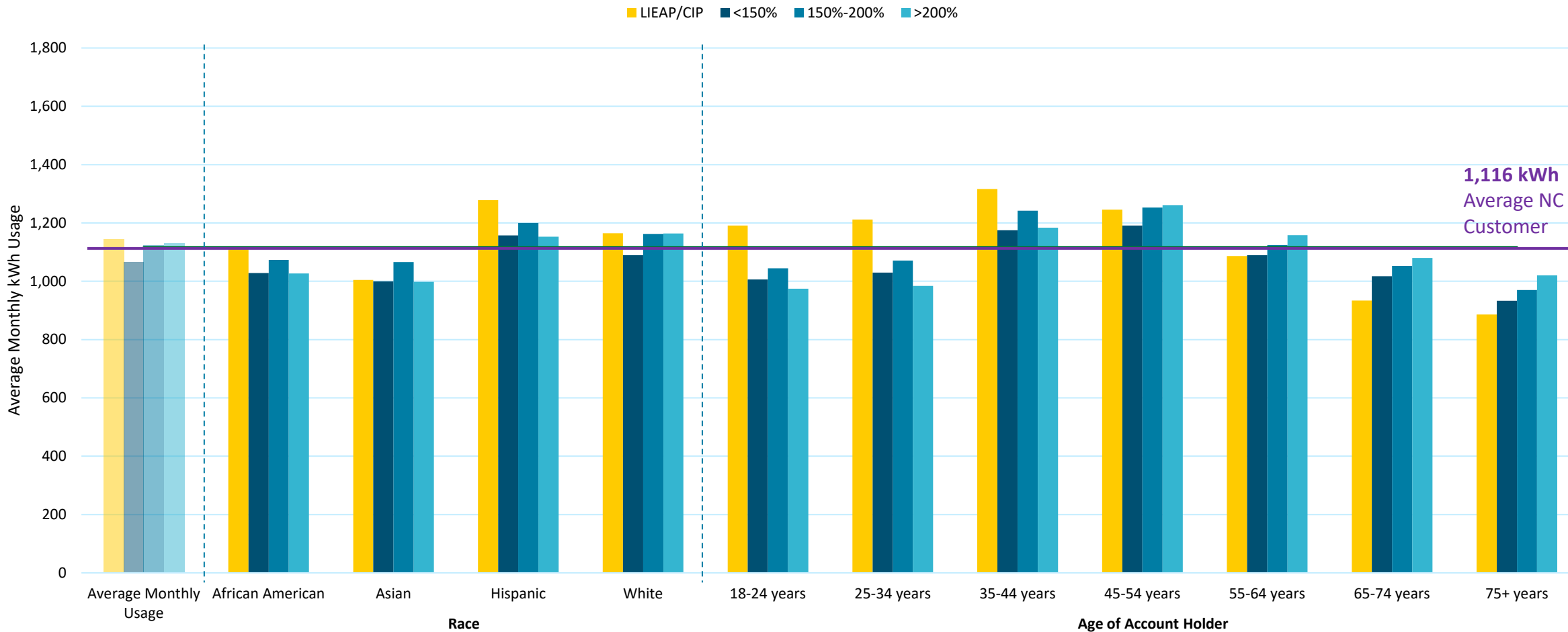
Age of Account Holder: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+

Average Monthly Usage by Income for Race and Age of the Account Holder

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Monthly Usage by Race and Age of the Account Holder



% Total Customers in Category	Average Monthly Usage	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	98%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

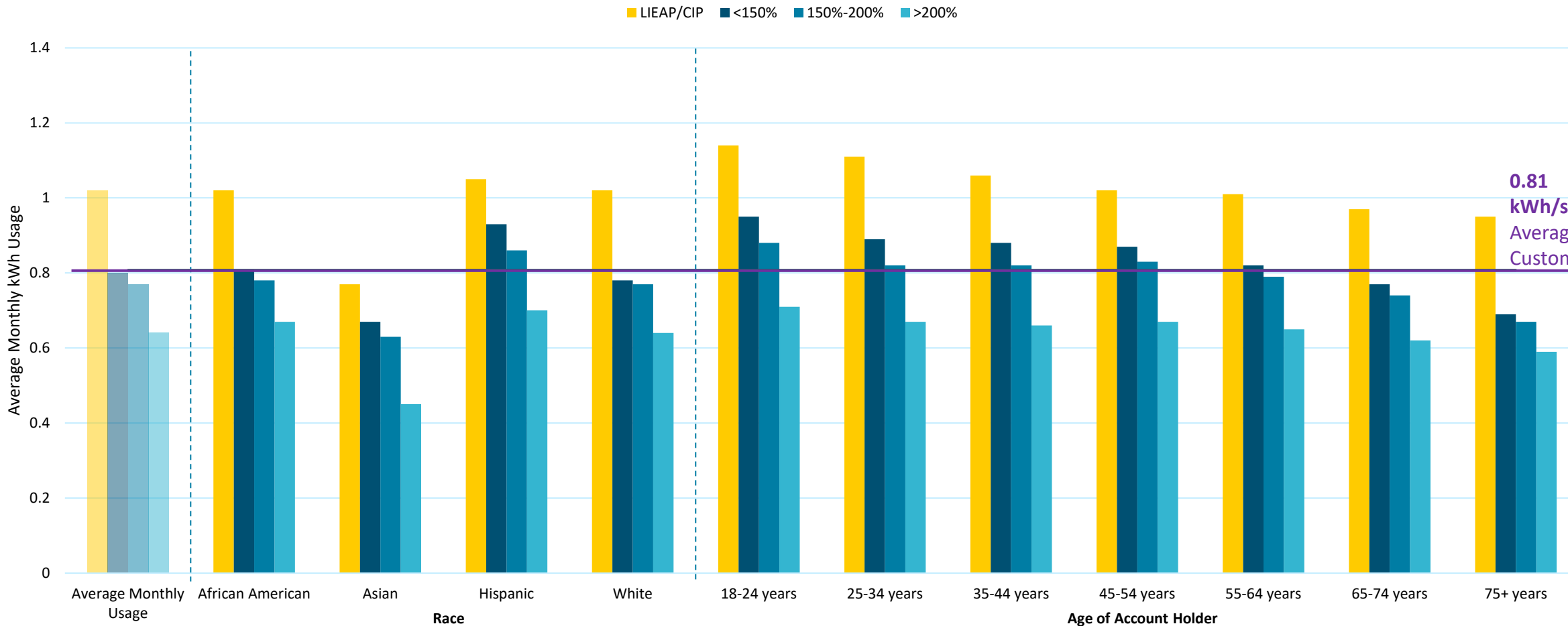
^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage per Square foot by Income for Race and Age of the Account Holder

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Average Monthly kWh/Sqft by Race and Age of the Account Holder



0.81 kWh/sqft Average Customer Usage

% Total Customers in Category	Average Monthly Usage	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	98%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

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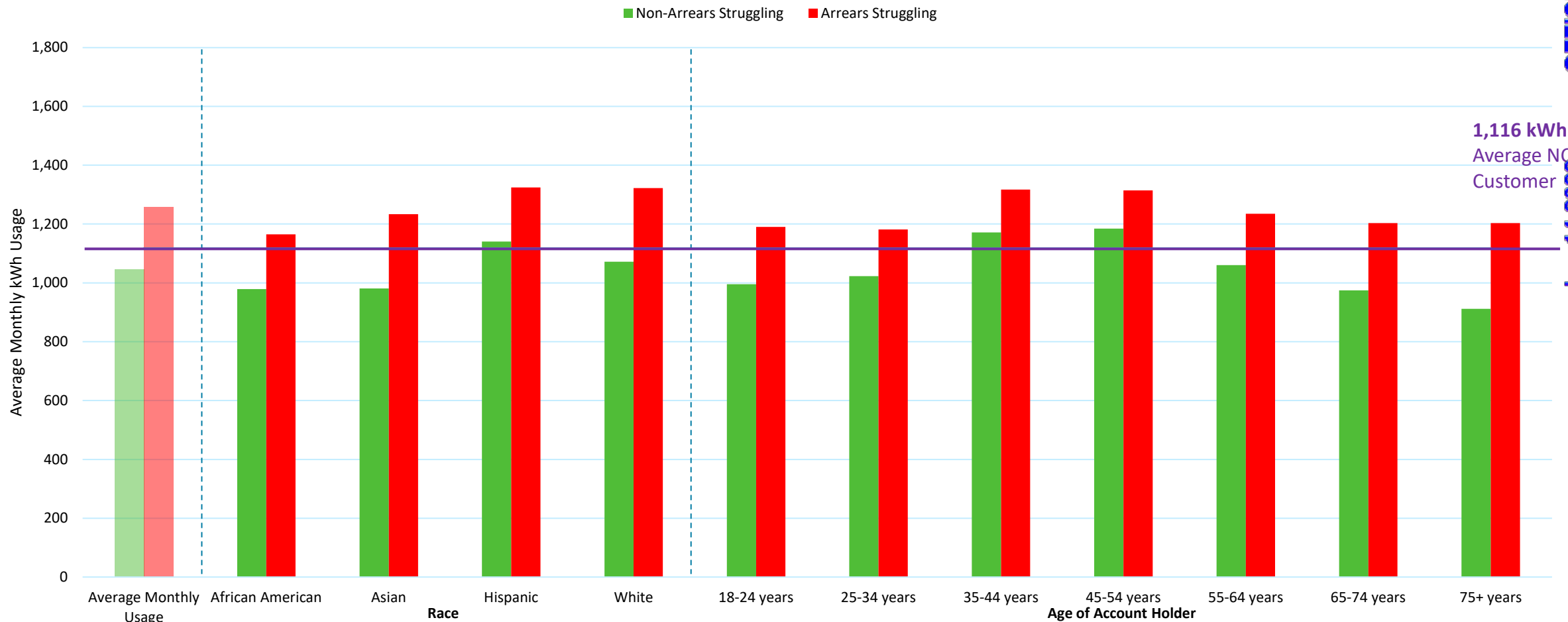
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Average Monthly Usage by Arrearage Status for Race and Age of the Account Holder

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Jan 14 2022

Monthly Usage by Race and Age of the Account Holder



1,116 kWh
Average NC
Customer

% Total Customers in Category	Average Monthly Usage	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	100%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

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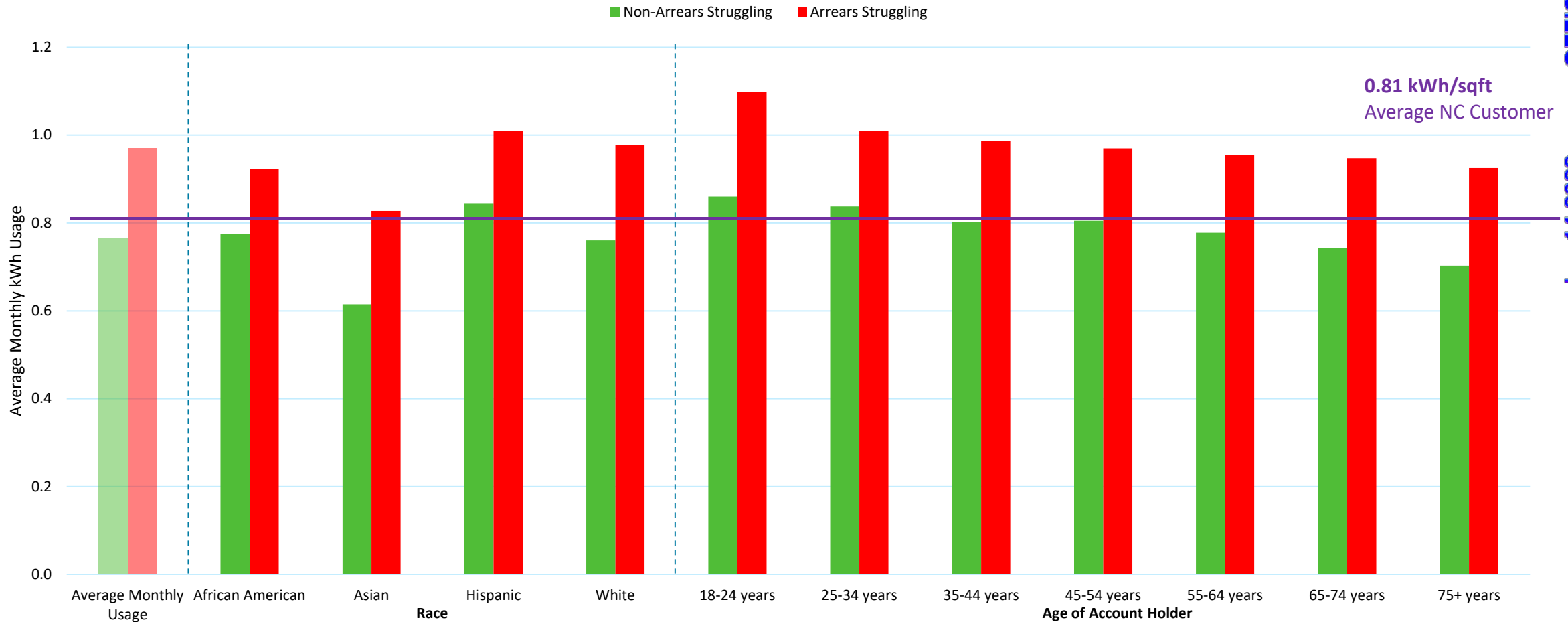
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Average Monthly Usage per Square Foot by Arrearage Status for Race and Age of the Account Holder

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Jan 14 2022

Monthly Usage by Race and Age of the Account Holder



0.81 kWh/sqft
Average NC Customer

% Total Customers in Category	Average Monthly Usage	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	100%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

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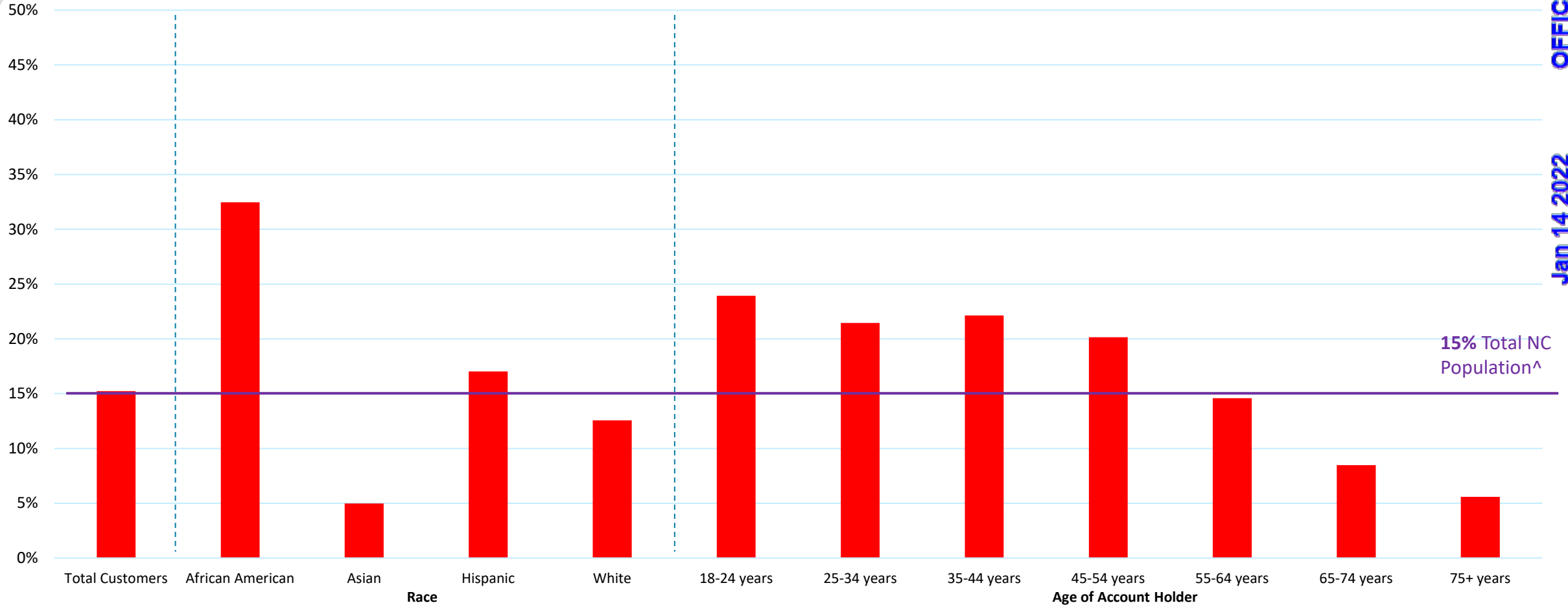
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Percent of Customers in Arrears for Race and Age of the Account Holder

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Percent of Customers in Arrears by Race and Age of the Account Holder



% Total Customers in Category	Total Customers	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	100%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

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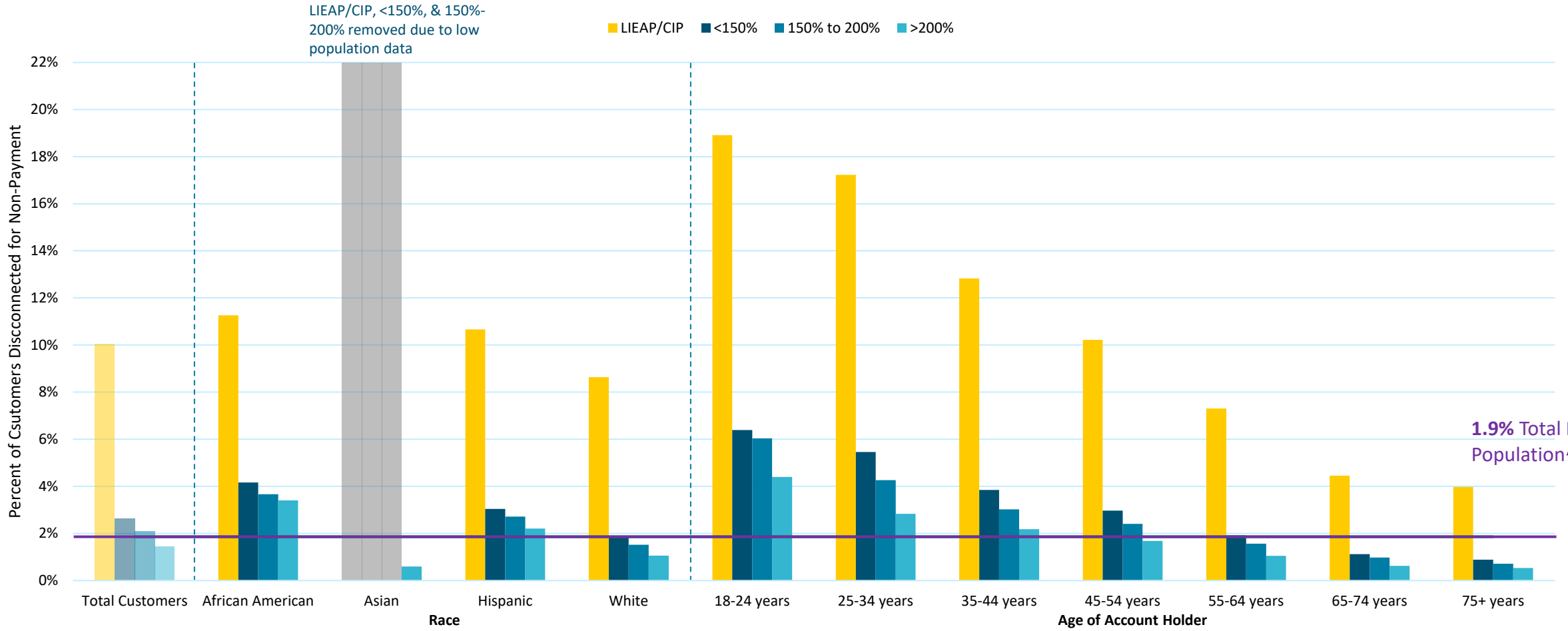
^The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Percent of DNP by Income for Race and Age of the Account Holder

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Percent of DNP by Race and Age of the Household



1.9% Total NC Population[^]

% Total Customers in Category	Total Customers	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
	98%	11%	2%	5%	72%	1%	11%	16%	19%	20%	17%	14%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Total Number of Customers in each Segment											
	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
LIEAP/CIP	18,151	303	2,307	25,940	1,338	8,267	10,153	9,253	10,606	8,011	4,350
<150% FPL	56,175	5,037	25,863	230,595	9,436	46,283	58,634	60,035	57,099	52,310	76,048
150%-200% FPL	30,220	3,772	13,705	179,350	4,025	27,405	42,749	49,779	48,975	41,025	43,595
>200%	159,661	43,911	74,130	1,284,497	1,8349	182,888	265,680	324,604	356,949	302,856	199,621
Total	264,207	53,023	116,005	1,720,382	33,148	264,843	377,216	443,671	473,629	404,202	323,614

Percent of Customers in each Segment											
	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
LIEAP/CIP	0.8%	0.0%	0.1%	1.1%	0.1%	0.4%	0.4%	0.4%	0.5%	0.3%	0.2%
<150% FPL	2.4%	0.2%	1.1%	9.9%	0.4%	2.0%	2.5%	2.6%	2.5%	2.3%	3.3%
150%-200% FPL	1.3%	0.2%	0.6%	7.7%	0.2%	1.2%	1.8%	2.1%	2.1%	1.8%	1.9%
>200%	6.9%	1.9%	3.2%	55.3%	0.8%	7.9%	11.4%	14.0%	15.4%	13.0%	8.6%

Total Numbers											
	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
Meets Arrears	85,761	26,41	197,71	216,091	7,934	56,850	83,507	89,439	69,162	34,325	18,059
Does not Meet Arrears	178,452	50,388	96,241	1,504,455	25,215	208,002	293,730	354,263	404,512	369,917	305,599

Percent of Customers in each Segment											
	African American	Asian	Hispanic	White	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75+ years
Meets Arrears	3.6%	0.1%	0.8%	9.1%	0.3%	2.4%	3.5%	3.8%	2.9%	1.4%	0.8%
Does not Meet Arrears	7.5%	2.1%	4.1%	63.4%	1.1%	8.8%	12.4%	14.9%	17.0%	15.6%	12.9%

Total Numbers											
	African American	Asian	Hispanic	White	18-24 years old	25-34 years old	35-44 years old	45-54 years old	55-64 years old	65-74 years old	75+ years old
LIEAP/CIP	2,044	-	246	2,240	253	1,424	1,302	946	775	357	173
<150% FPL	2,340	-	787	4,303	603	2,527	2,256	1,783	1,098	588	677
150%-200% FPL	1,109	-	372	2,725	243	1,168	1,293	1,201	766	402	313
>200%	5,437	262	1,637	13,620	807	5,177	5,802	5,477	3,748	1,901	1,064
Total	10,930	262	3,042	22,888	1,906	10,296	10,653	9,407	6,387	3,248	2,227

Percent of Customers in that Segment DNP (i.e., percent of 18-24 years old customers DNP)											
	African American	Asian	Hispanic	White	18-24 years old	25-34 years old	35-44 years old	45-54 years old	55-64 years old	65-74 years old	75+ years old
LIEAP/CIP	11.3%	-	10.7%	8.6%	18.9%	17.2%	12.8%	10.2%	7.3%	4.5%	4.0%
<150% FPL	4.2%	-	3.0%	1.9%	6.4%	5.5%	3.8%	3.0%	1.9%	1.1%	0.9%
150%-200% FPL	3.7%	-	2.7%	1.5%	6.0%	4.3%	3.0%	2.4%	1.6%	1.0%	0.7%
>200%	3.4%	0.6%	2.2%	1.1%	4.4%	2.8%	2.2%	1.7%	1.1%	0.6%	0.5%

Analysis by Number of People in the Household

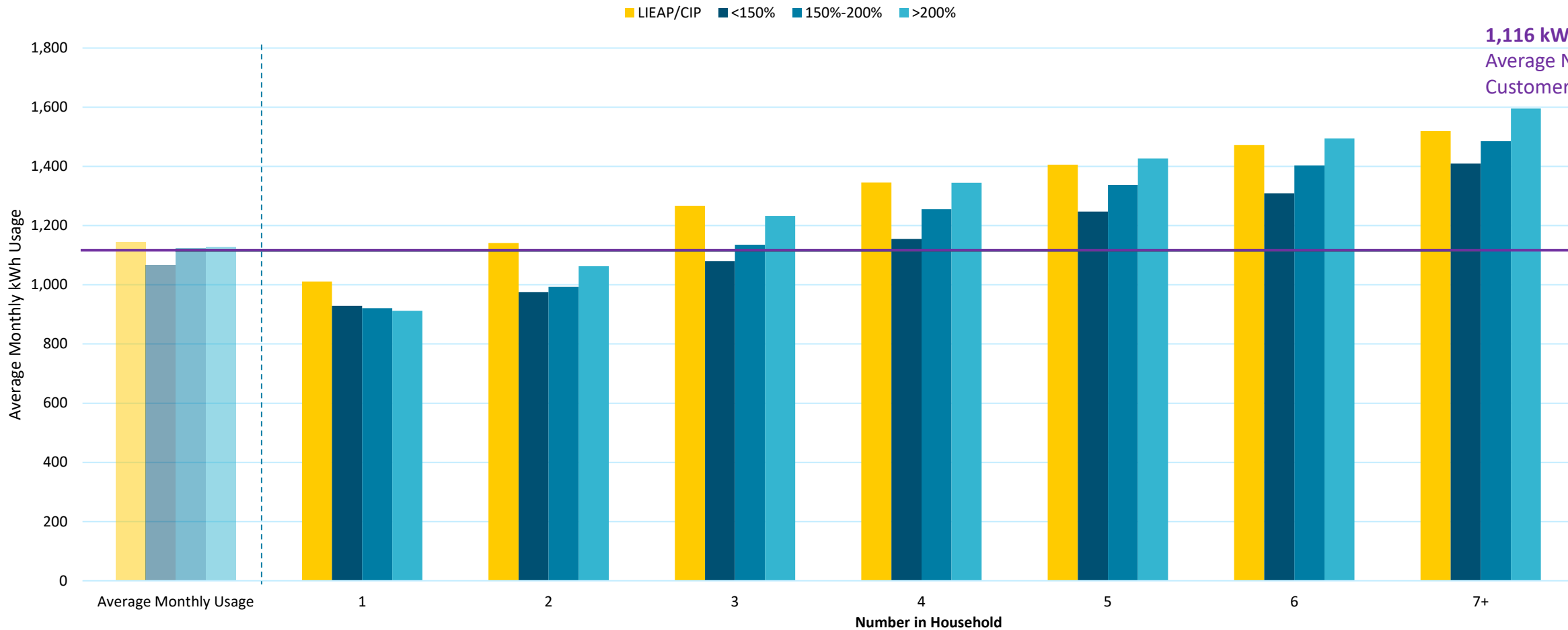
Number of People in the Household: 1, 2, 3, 4, 5, 6, 7+

Average Monthly Usage by Income for Number of People in the Household

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Jan 14 2022

Monthly Usage by Number of People in Household



1,116 kWh
Average NC
Customer[^]

% Total Customers in Category*	98%	24%	29%	22%	12%	6%	2%	2%

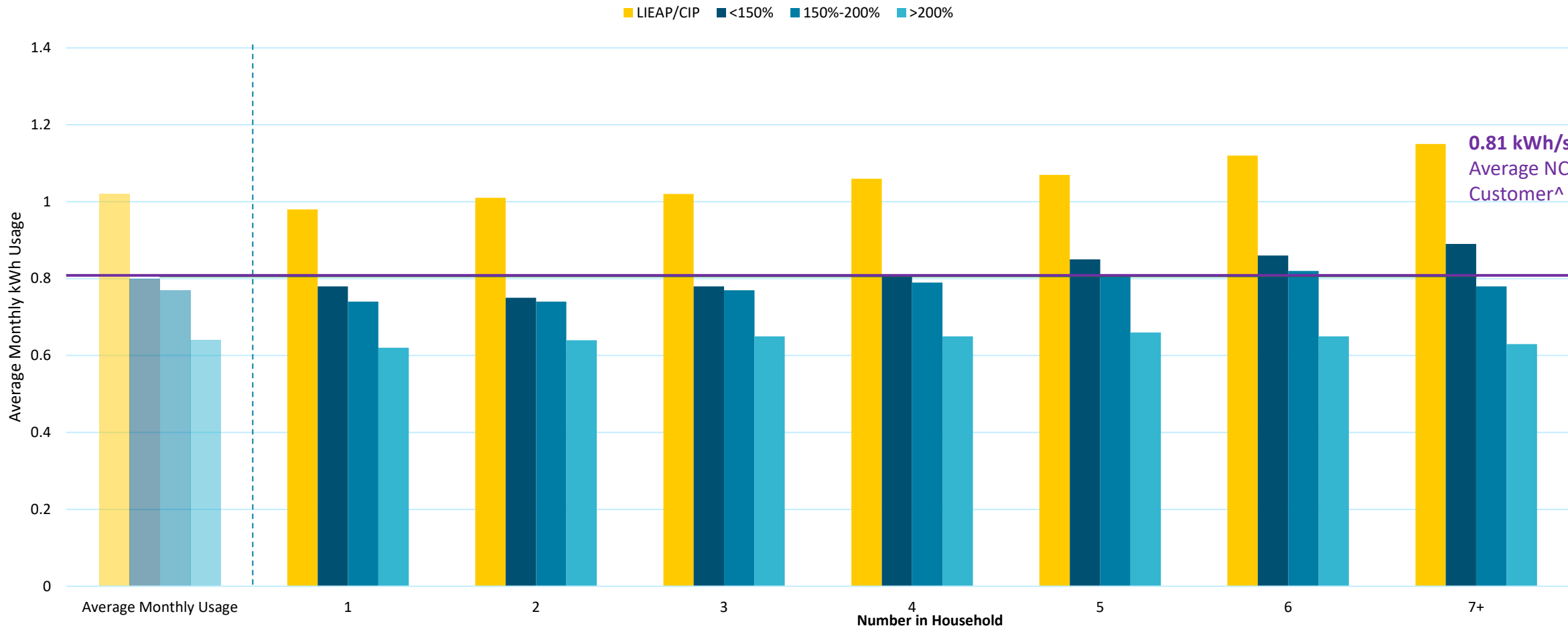
*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage per Square foot by Income for Number of People in the Household

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Average Monthly kWh/Sqft by Number of People in the Household



0.81 kWh/sqft
Average NC Customer[^]

Jan 14 2022

% Total Customers in Category*	98%	24%	29%	22%	12%	6%	2%	2%
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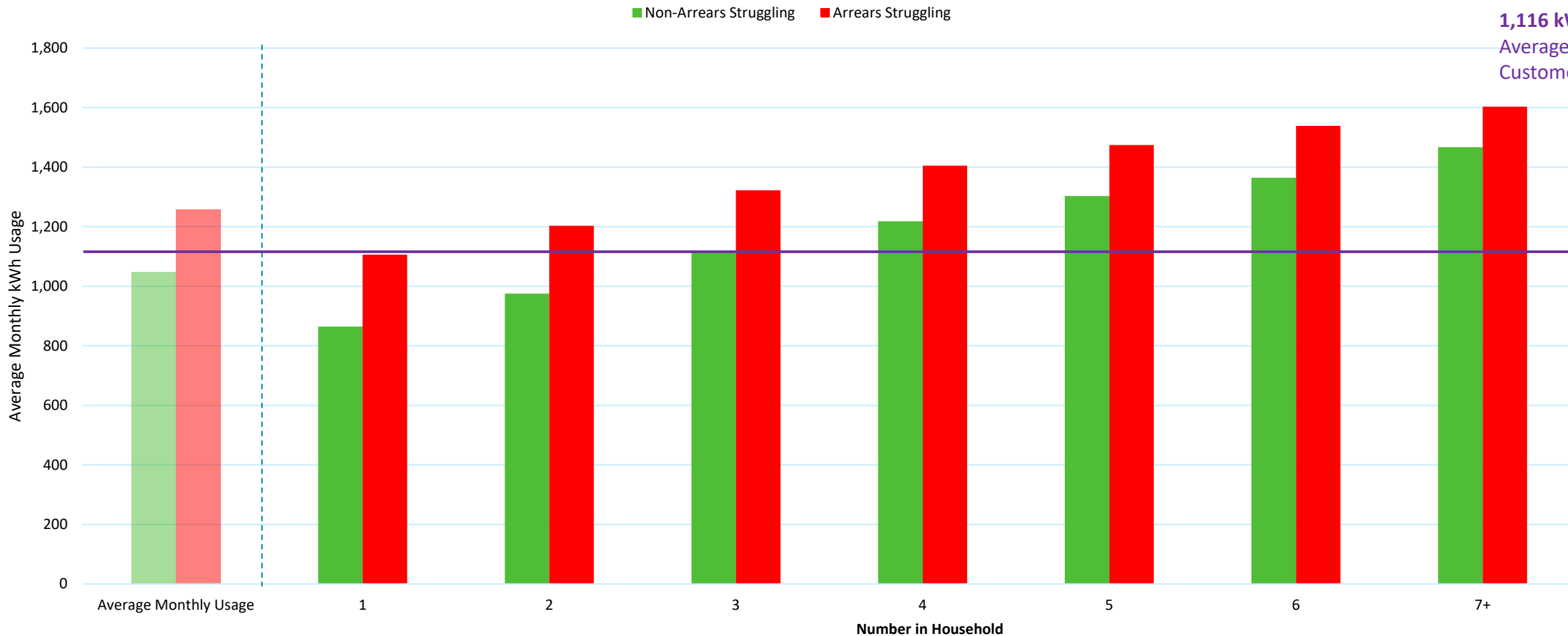
*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage by Arrearage Status for Number of People in the Household

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Monthly Usage by Number of People in the Household



Jan 14 2022

% Total Customers in Category*	100%	24%	29%	22%	12%	6%	2%	2%

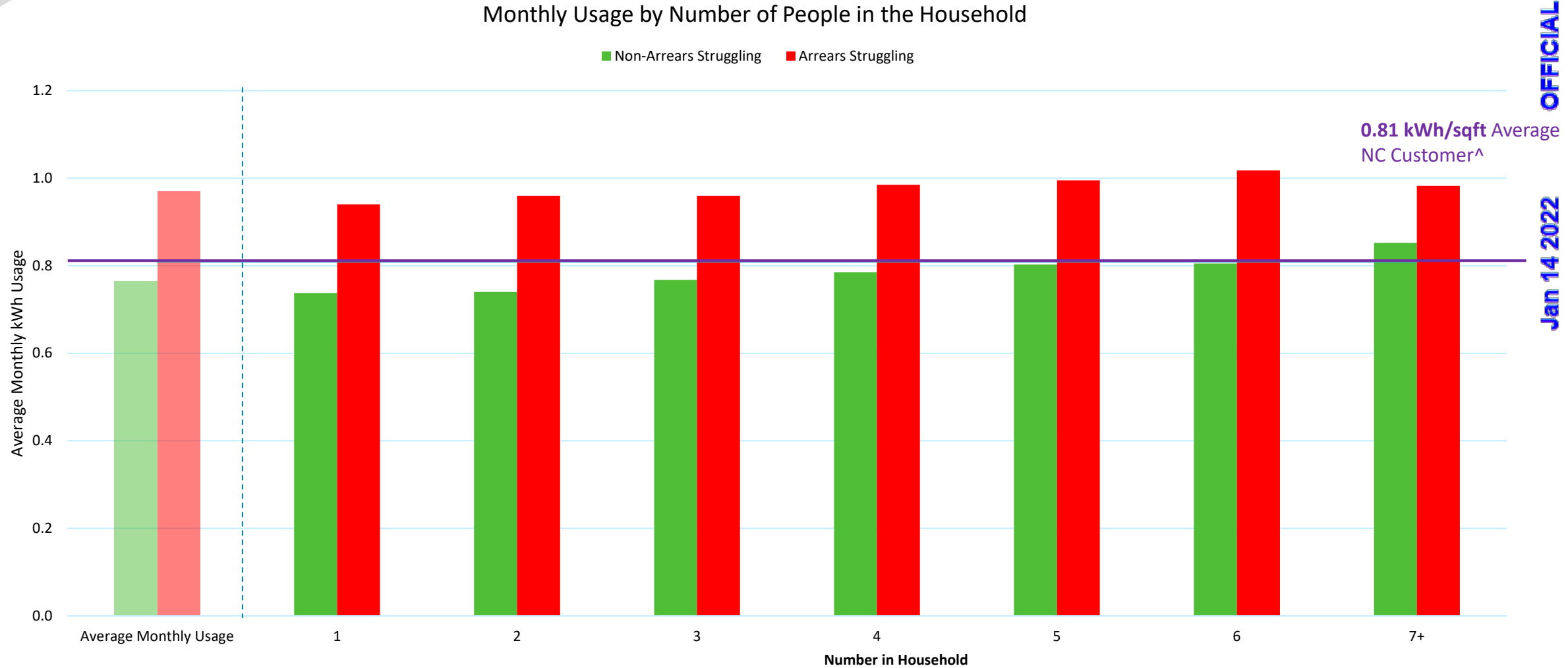
*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Average Monthly Usage per Square Foot by Arrearage Status for Number of People in the Household

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Jan 14 2022



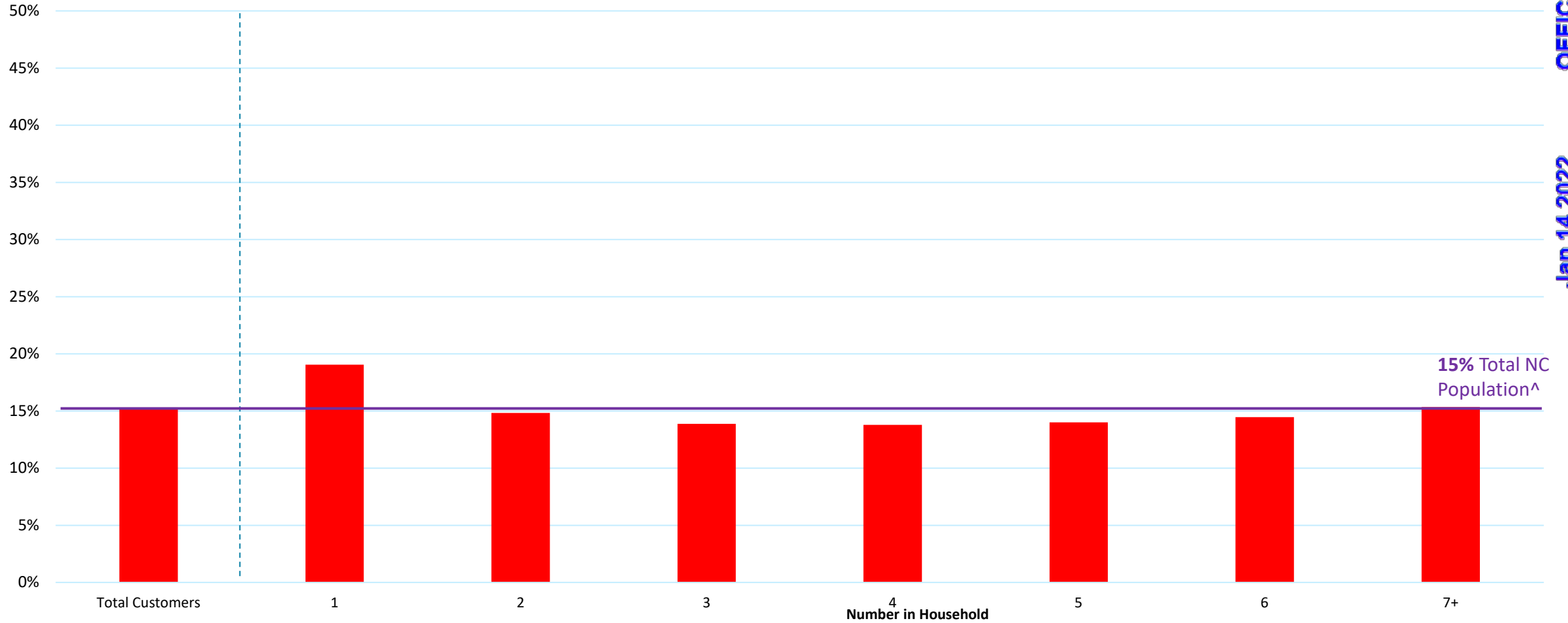
% Total Customers in Category*	100%	24%	29%	22%	12%	6%	2%	2%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

[^]The average line includes customers who could not be categorized, therefore there may be instances of all groups above average

Percent of Customers in Arrears for Number of People in the Household

Percent of Customers in Arrears by Number of People in the Household



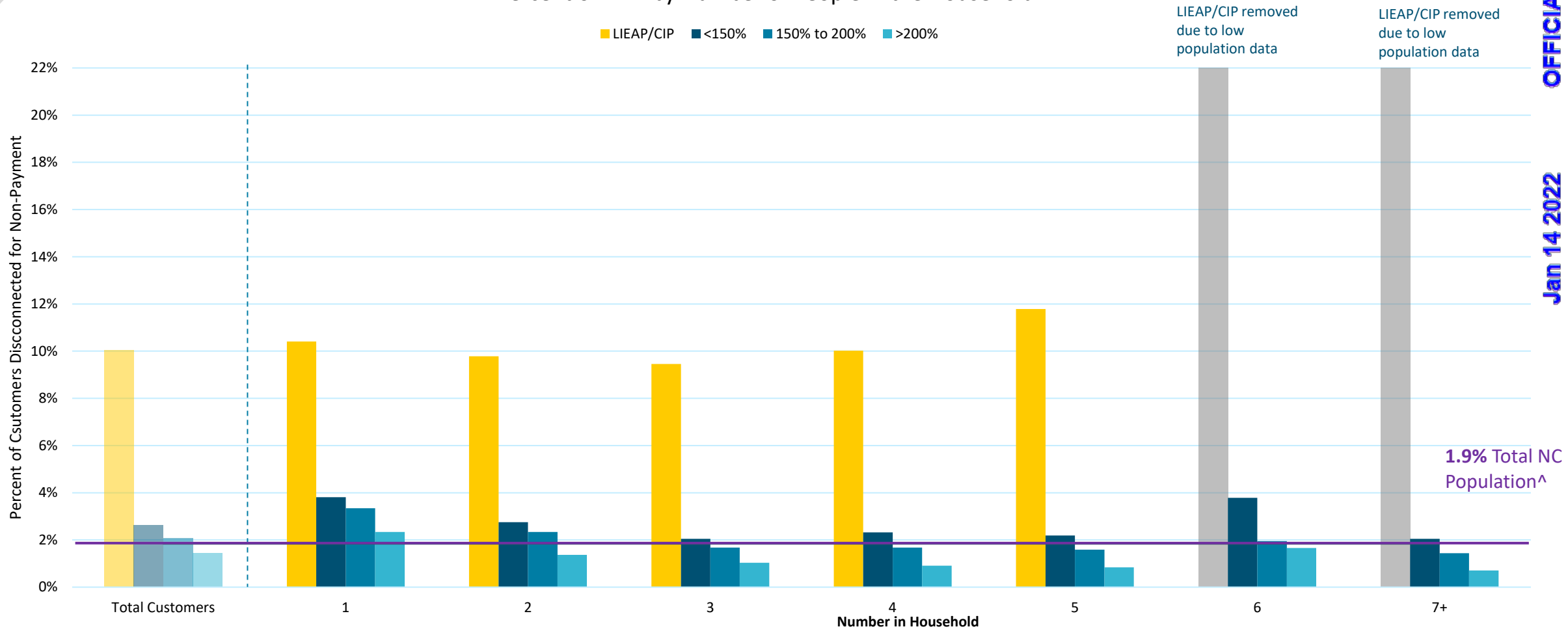
% Total Customers in Category*	Total Customers	1	2	3	4	5	6	7+
	100%	24%	29%	22%	12%	6%	2%	2%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

Percent of DNP by Income for Number of People in the Household

Percent of DNP by Number of People in the Household



% Total Customers in Category*	Total Customers	1	2	3	4	5	6	7+
	98%	24%	29%	22%	12%	6%	2%	2%

*Not all customers can be categorized, resulting in percentages not necessarily summing to 100%

^The total line includes customers who could not be categorized, therefore there may be instances of all groups above the total

1.9% Total NC Population^

Total Numbers							
	1	2	3	4	5	6	7+
LIEAP/CIP	20,815	15,621	8,588	3,862	1,773	468	471
<150% FPL	73,902	97,666	87,773	41,184	29,324	10,944	10,943
150%-200% FPL	34,581	78,964	53,767	54,254	19,687	7,840	7,841
>200%	447,357	485,100	381,532	189,572	93,775	17,012	17,017
Total	576,655	677,351	531,660	288,872	144,559	36,264	36,272

Percent of Customers in each Segment							
	1	2	3	4	5	6	7+
LIEAP/CIP	0.9%	0.7%	0.4%	0.2%	0.1%	0.0%	0.0%
<150% FPL	3.2%	4.2%	3.8%	1.8%	1.3%	0.5%	0.5%
150%-200% FPL	1.5%	3.4%	2.3%	2.3%	0.8%	0.3%	0.3%
>200%	19.3%	20.9%	16.4%	8.2%	4.0%	0.7%	0.7%

Total Numbers							
	1	2	3	4	5	6	7+
Meets							
Arrears	109,860	100,445	73,812	39,802	20,236	9,814	5,568
Does not							
Meet							
Arrears	466,828	576,956	457,889	249,098	124,343	58,069	30,704

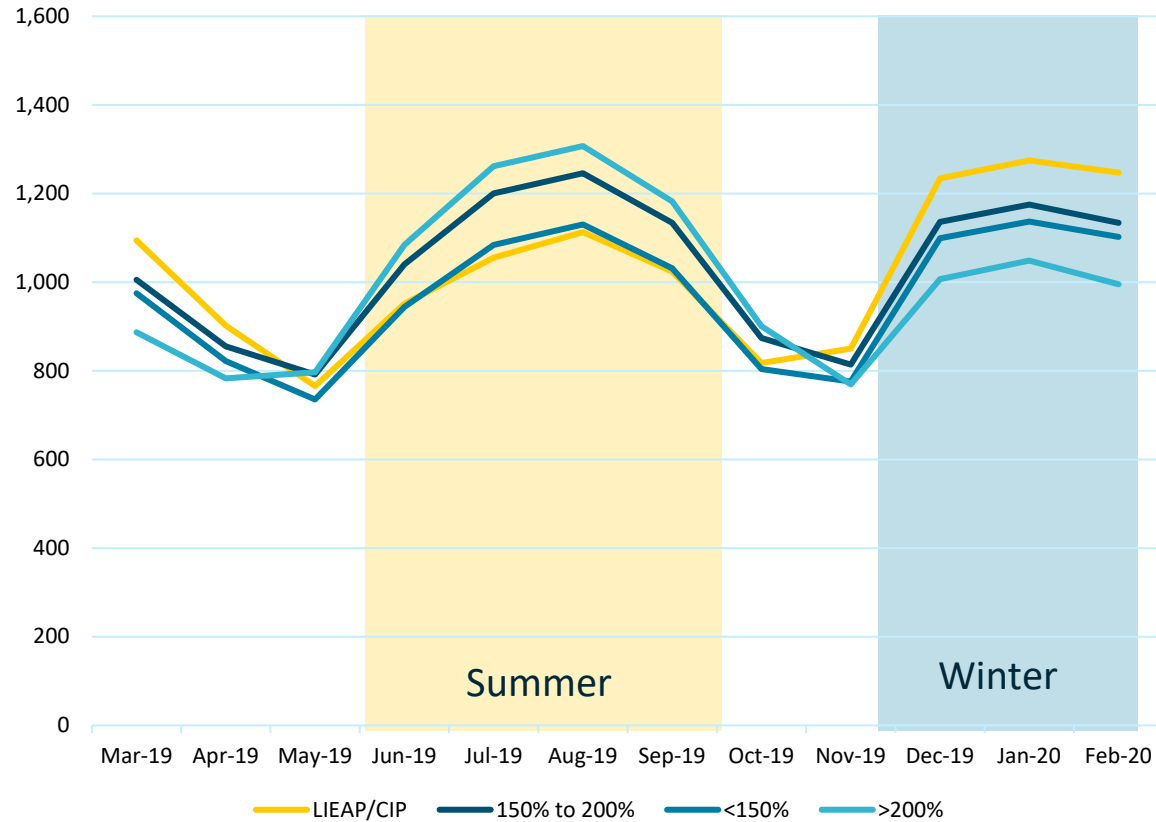
Percent of Customers in each Segment							
	1	2	3	4	5	6	7+
Meets							
Arrears	4.6%	4.2%	3.1%	1.7%	0.9%	0.4%	0.2%
Does not							
Meet							
Arrears	19.7%	24.3%	19.3%	10.5%	5.2%	2.4%	1.3%

Total Number of Customers in each Segment							
	1	2	3	4	5	6	7+
LIEAP/CIP	2,166	1,528	812	387	209	-	-
<150% FPL	2,814	2,690	1,800	956	642	414	224
150%-200% FPL	1,157	1,844	901	909	313	153	113
>200%	10,463	6,651	3,960	1,718	786	282	120
Total	16,600	12,713	7,473	3,970	1,950	849	457

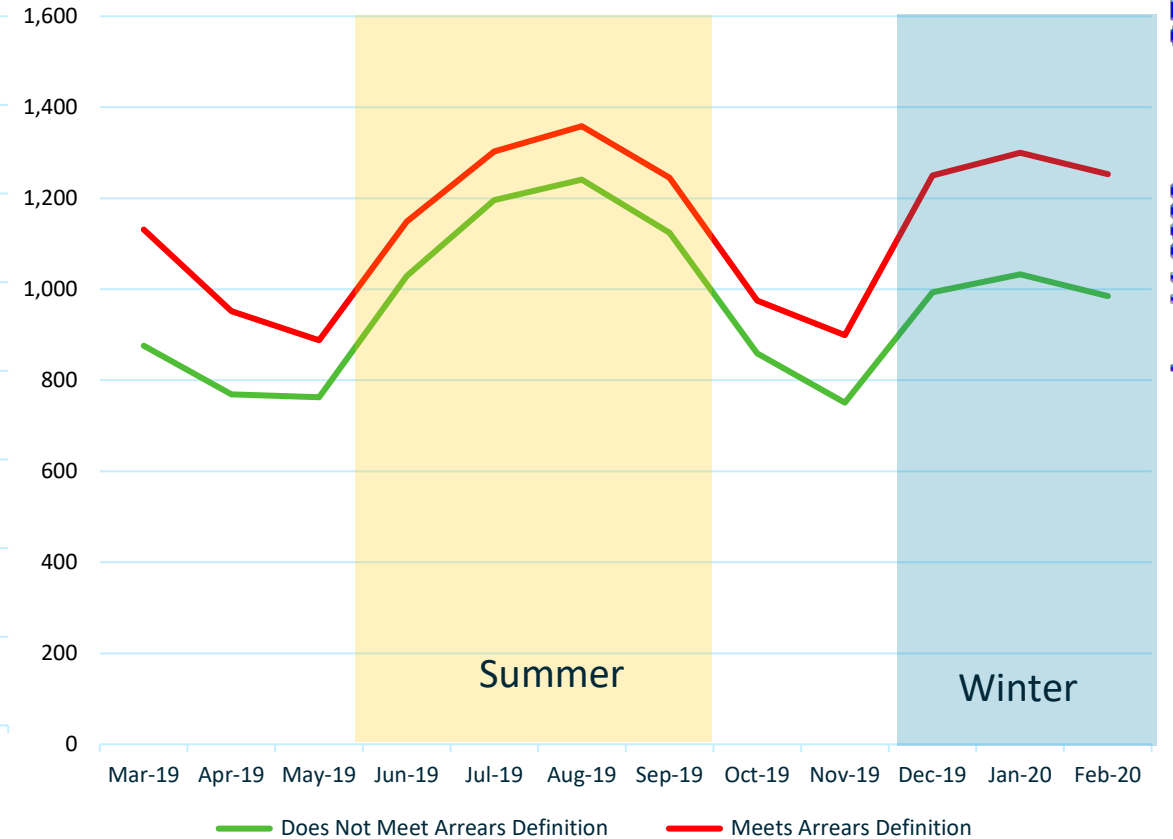
Percent of Customers in that Segment DNP (i.e., percent of 2 people household customers DNP)							
	1	2	3	4	5	6	7+
LIEAP/CIP	10.4%	9.8%	9.5%	10.0%	11.8%	-	-
<150% FPL	3.8%	2.8%	2.1%	2.3%	2.2%	2.1%	2.0%
150%-200% FPL	3.3%	2.3%	1.7%	1.7%	1.6%	1.7%	1.4%
>200%	2.3%	1.4%	1.0%	0.9%	0.8%	0.7%	0.7%

Analysis of Billing Data

Median Monthly kWh – All

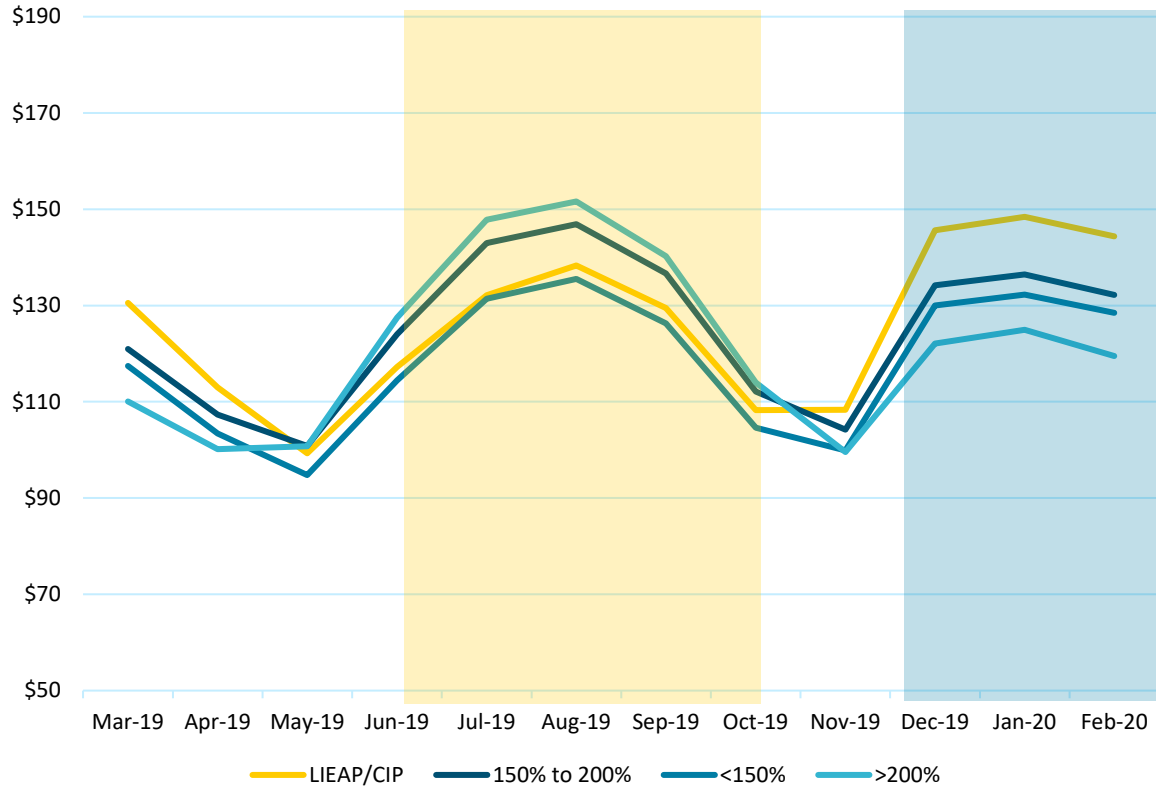


Median Monthly kWh – Struggling with Arrears

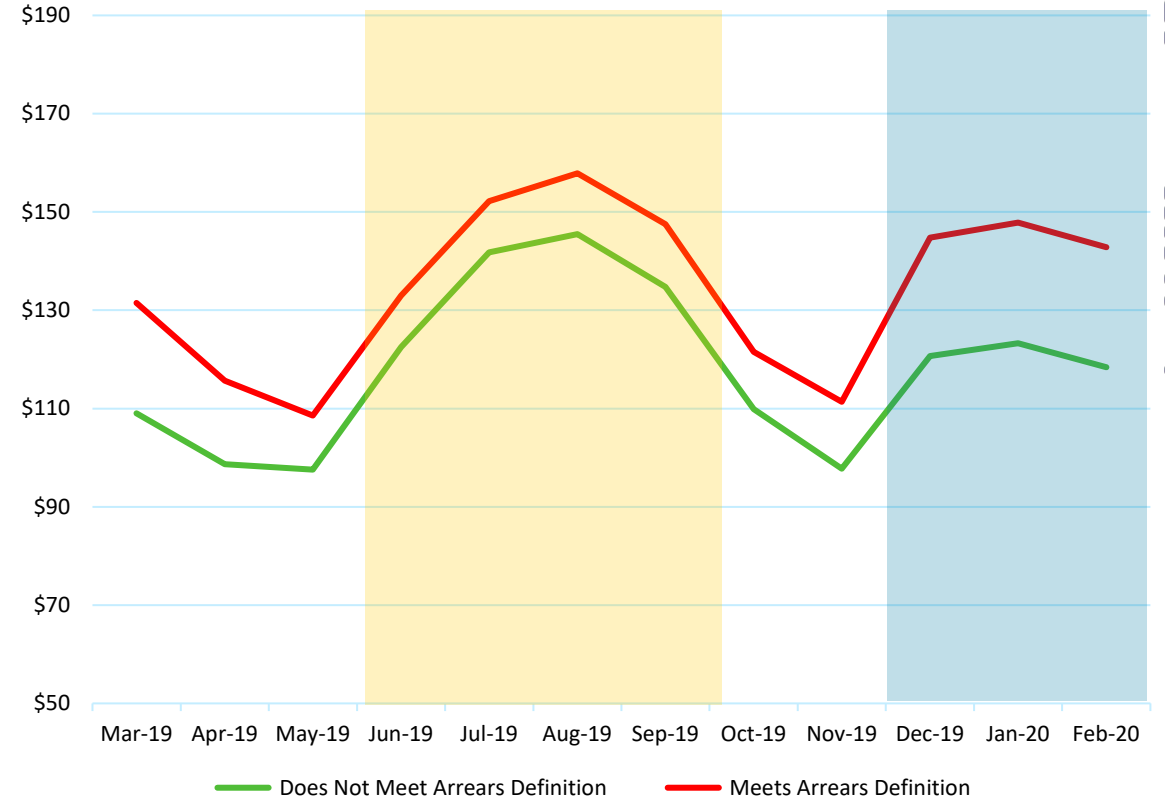


- Low income & LIEAP/CIP customers use more energy in the winter, less in the summer
- Customers struggling with arrears use more kWh per month than other customers year-round

Median Monthly Bills by Income Level

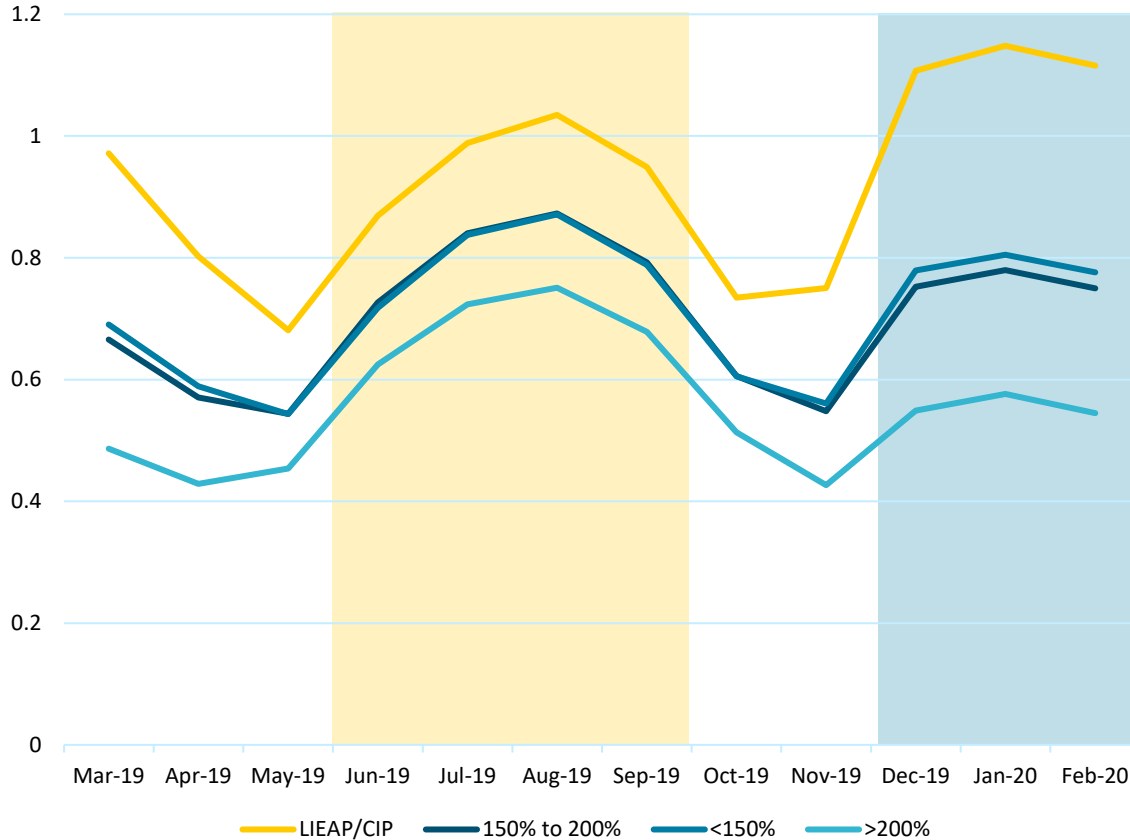


Median Monthly Bills by Arrears Definition

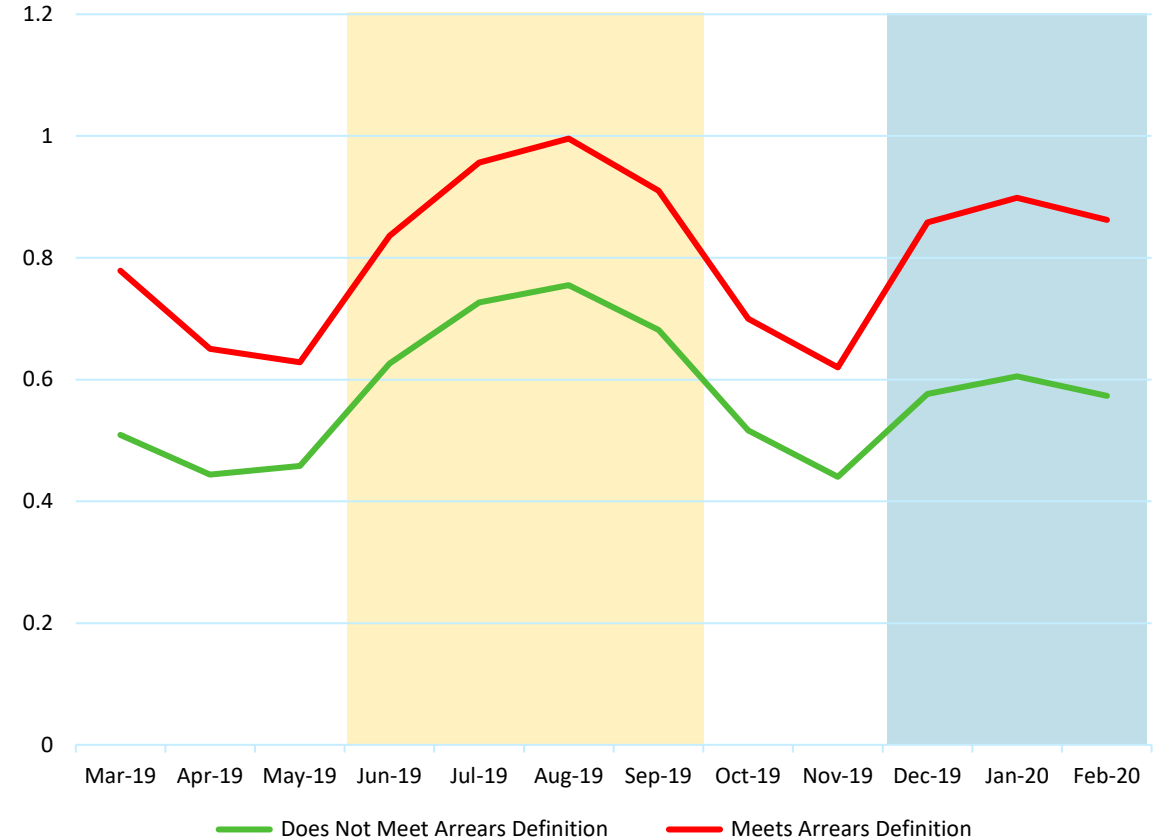


- Directly correlated with kWh usage
- LIEAP/CIP customers have higher charges in the winter, lower in the summer
- Customers struggling with arrears have new charges that are 14% higher year-round and 20% higher in the winter

Median kWh per sq ft by Income Level

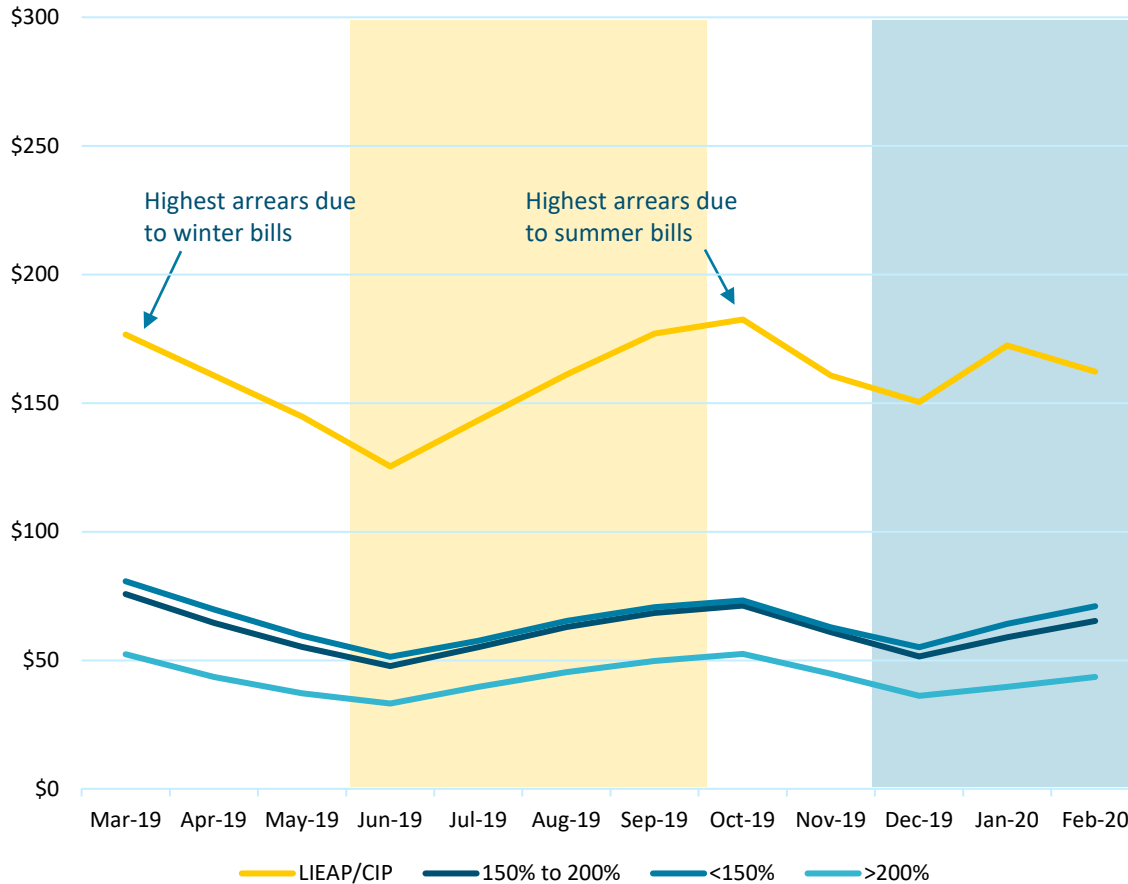


Median kWh per sq ft by Arrears Definition

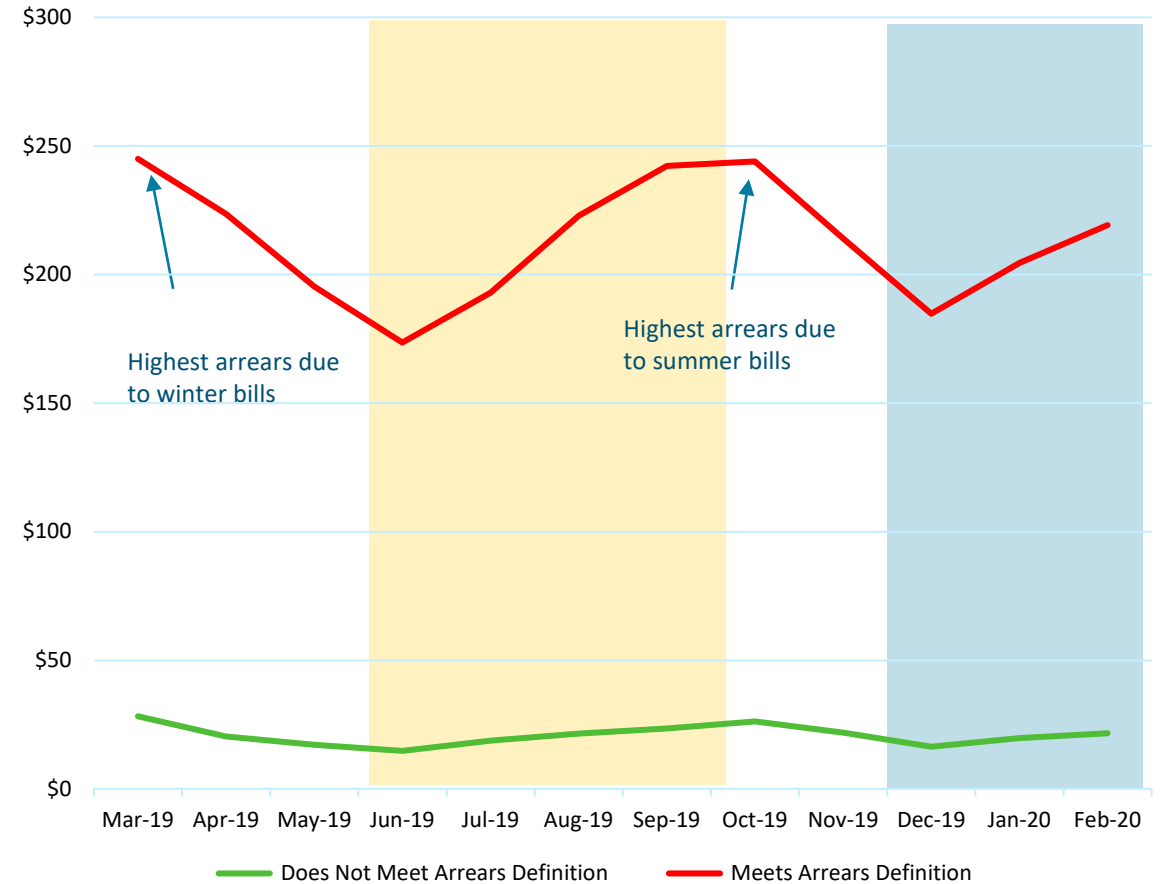


- LIEAP/CIP customers use two times more electricity in peak winter months per square foot than customers above 200% FPL
- Arrears struggling customers use over 33% more electricity in peak winter months per square foot

Median Monthly Past Due Amounts by Income Level

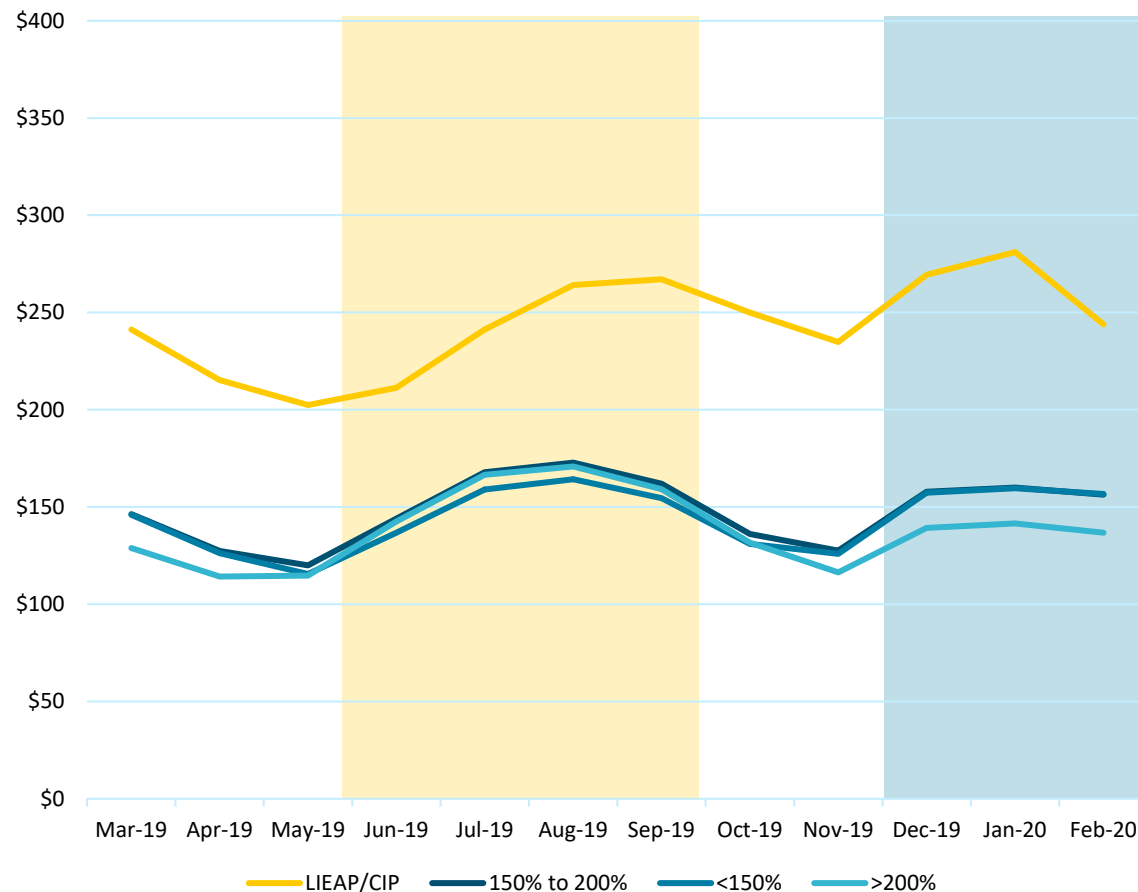


Median Monthly Past Due Amounts by Arrears Definition

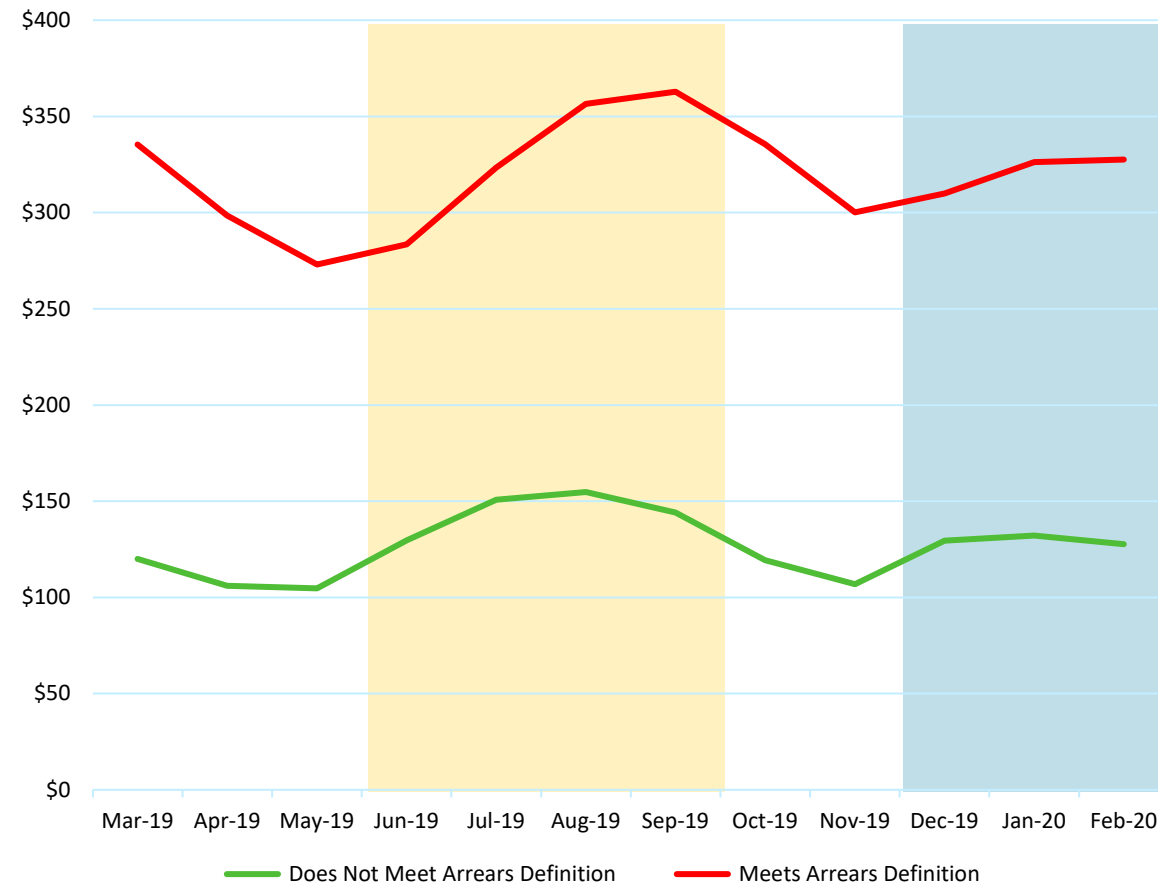


- LIEAP/CIP customers owe 3.5 times more in arrears at the end of summer and winter than customers above 200% FPL
- Median summer and winter peaks in arrears are over \$240 and occur at the end of each season for struggling customers

Median Monthly Total bill by Income Level



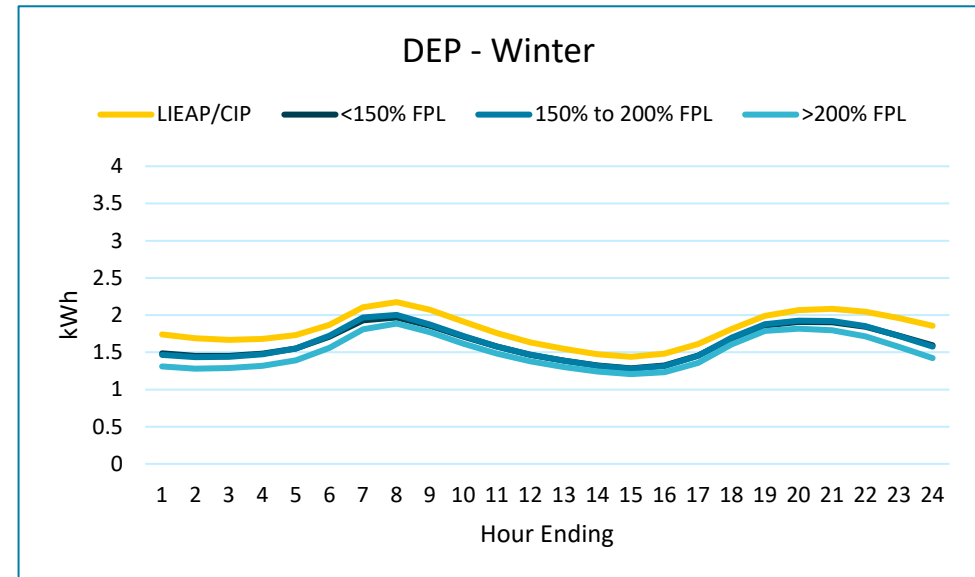
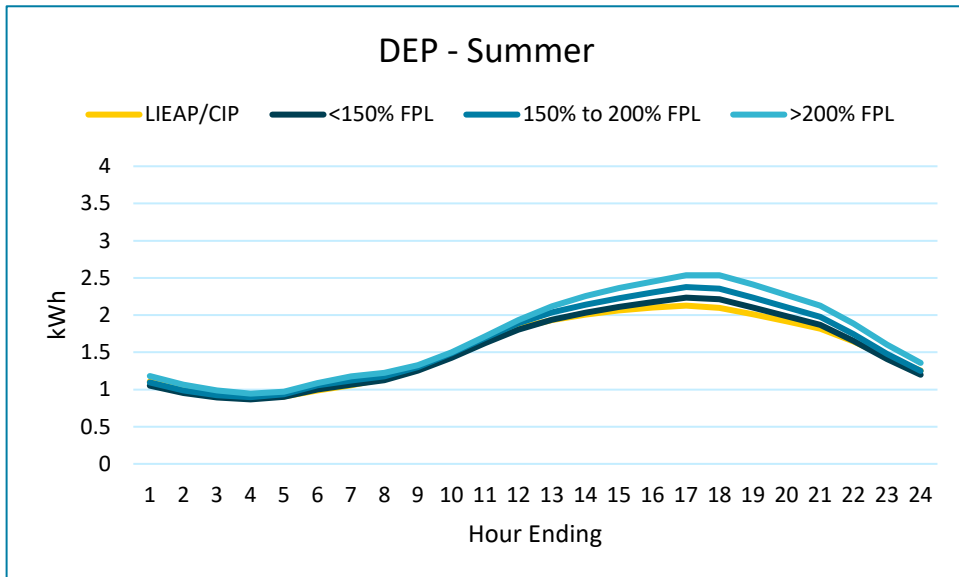
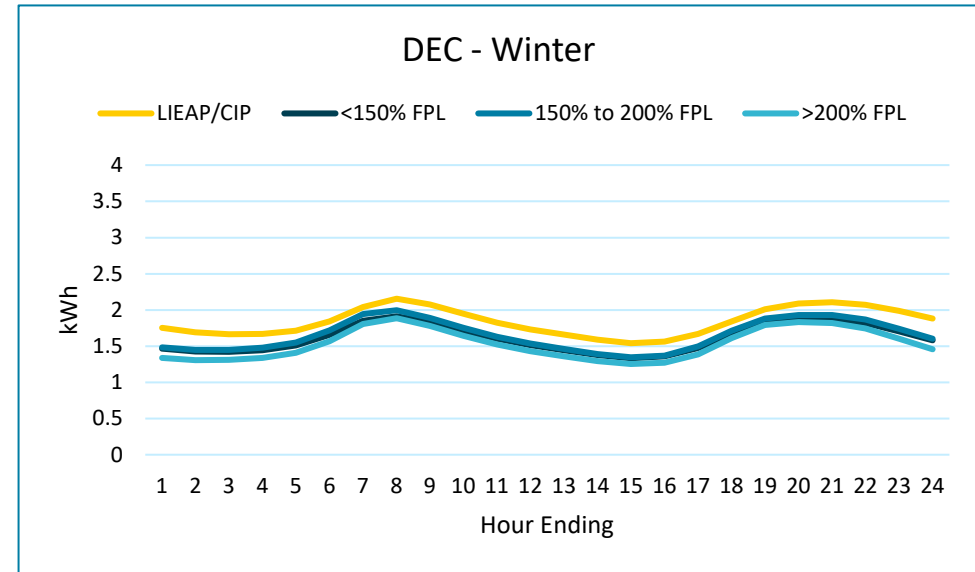
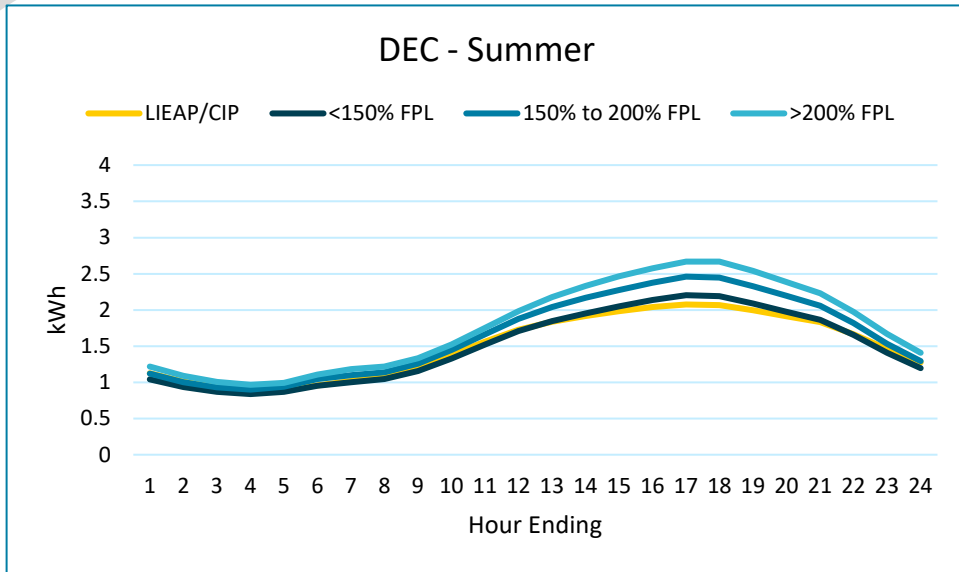
Median Monthly Total Bill by Arrears Definition



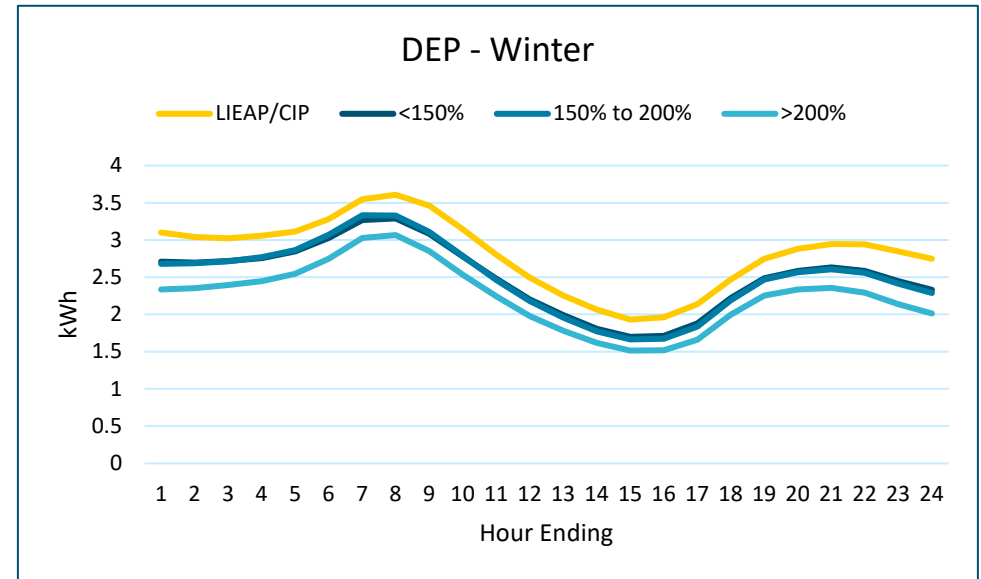
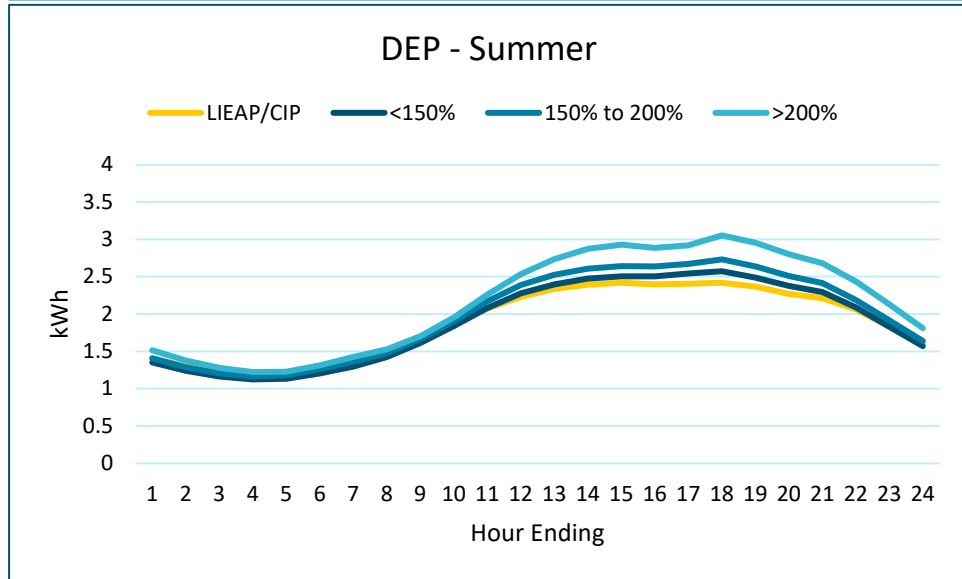
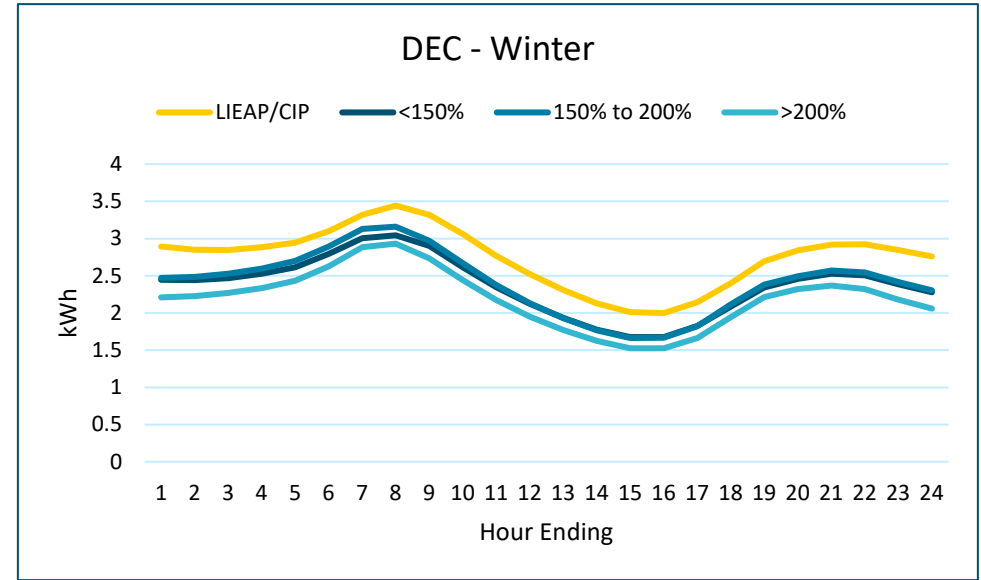
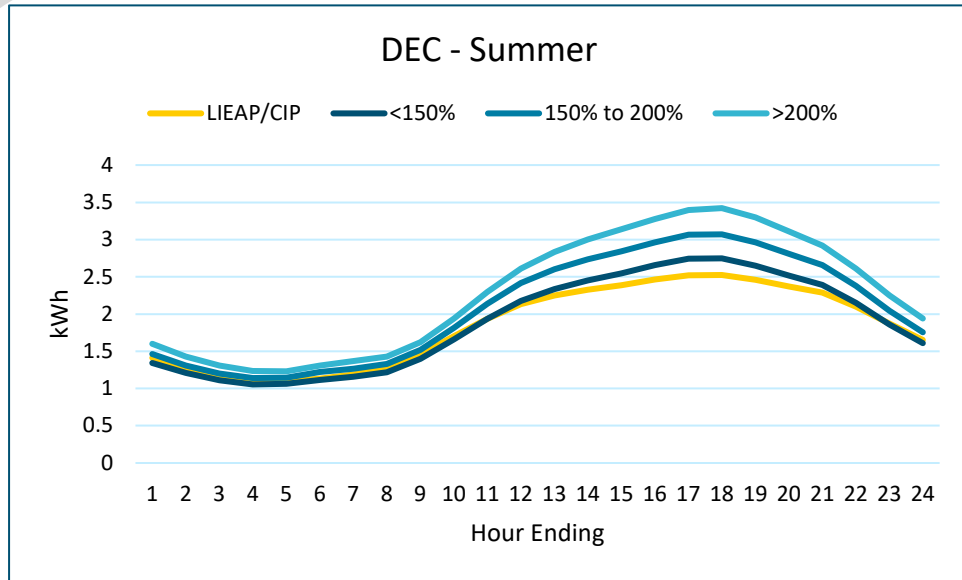
- LIEAP/CIP customers face a significantly higher total bill burden, particularly in the winter
- Non-LIEAP/CIP customers below 200% FPL do not appear to face a significantly higher total bill burden, especially in the summer
- Arrears struggling customers have a 64% higher total bill burden in peak winter months

Analysis of Interval Data

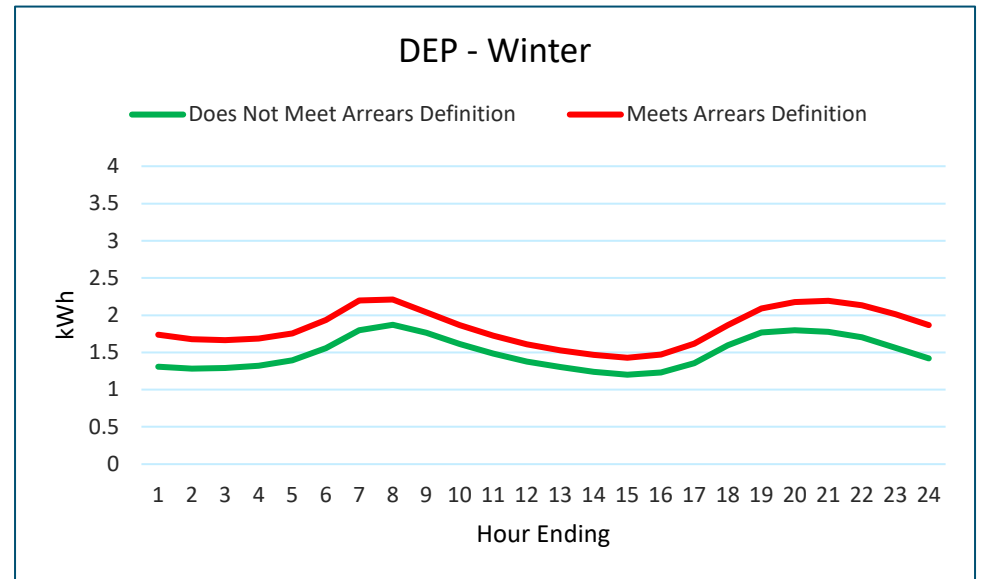
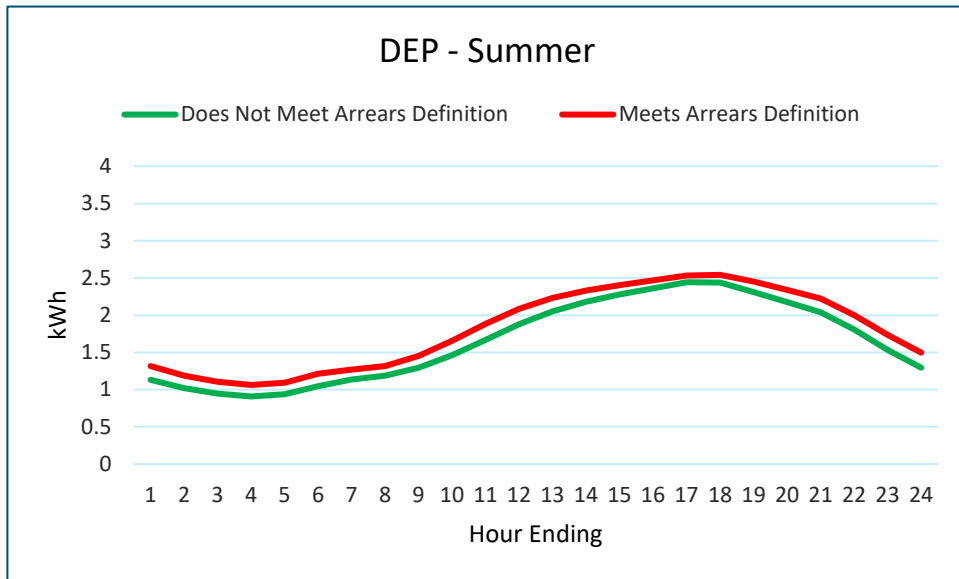
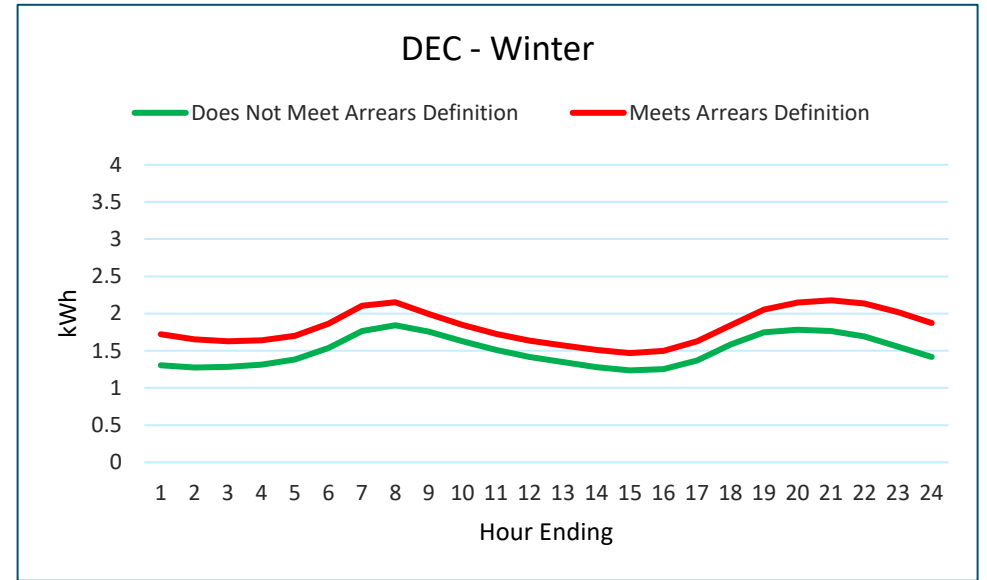
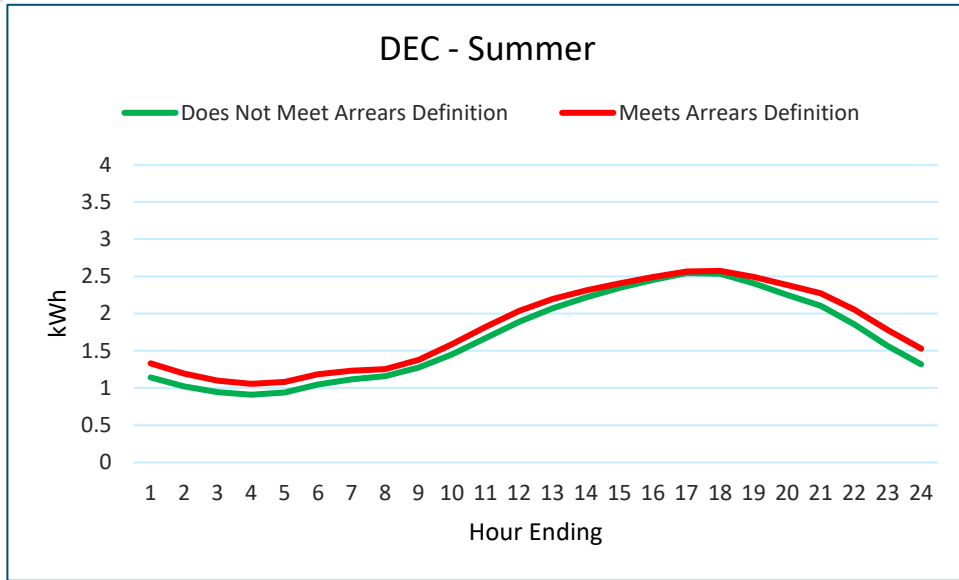
Average Weekday Load Shape by Season & Income Segmentation



Peak Day Load Shape by Season & Income Segmentation



Average Weekday Load Shapes By Season & Arrearage Status



Peak Day Load Shapes by Season & Arrearage Status

