

Utility Demographic and Firmographic Profile 2020

New Jersey Utilities

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List of acronyms used in this report

Atlantic City Electric	ACE	PSE&G Electric.....	PSE&G elec
Board of Public Utilities.....	BPU	PSE&G Gas.....	PSE&G gas
Butler Power & Light	Butler	Rockland Electric Company	RKE
Elizabethtown Gas	ETG	South Jersey Gas	SJG
Jersey Central Power & Light	JCPL	Statewide Electric	SW Ele
New Jersey Natural Gas	NJNG	Statewide Gas	SW Gas

1 EXECUTIVE SUMMARY

1.1 Study Purpose and Research Questions

The purpose of this study was to examine the demographics and firmographics of all customers in the service territories of each of the electric and gas public utilities in New Jersey. This is to comply with P.L. 2018, c. 17, codified at N.J.S.A. 48:3-51-87 et seq., commonly known as the Clean Energy Act of 2018 ("Clean Energy Act" or "CEA"), as well as in response to the New Jersey Board of Public Utilities (NJBPU) Order Docket Nos. QO19010040 and QO19060748 (dated October 7, 2019), which directed the utilities to complete a demographic analysis pursuant to the Clean Energy Act. The Clean Energy Act of 2018 states:

Each electric public utility and gas public utility shall conduct a demographic analysis as part of the stakeholder process to determine whether all of its customers are able to participate fully in implementing energy efficiency measures, to identify market barriers that prevent such participation, and to make recommendations for measures to overcome such barriers.

The study addresses the following research questions:

1. Identification of the major customer categories in each electric and natural gas utility's service area
2. Determination of whether all customer categories can participate fully in implementing energy efficiency measures
3. Identification of market barriers that prevent full participation in energy efficiency programs
4. Development of recommendations for methods to overcome barriers to participation in energy efficiency programs

1.2 Methodology Overview


For this study, DNV GL completed the following activities:

1. Engaged utilities and the Board of Public Utilities (BPU) staff to identify data needs and sources
2. Received consumption data from the utilities and program tracking data from the BPU and the utilities
3. Standardized the data into a statewide database, including third-party demographics and firmographics
4. Produced summary tables for statewide and utility-specific demographic and firmographic analyses
5. Compiled the analyses, key findings, and recommendations into this report
6. Produced an anonymized, confidentiality-protected public microdata set

1.3 Key Findings

1.3.1 Key Customer Categories with Barriers Indicated

Table 1-1 indicates which residential categories appear to have less access to energy efficiency measures, based on their participation rates being lower than other customers in their sector by more than a trivial amount. The analysis indicated lower access to energy efficiency almost universally across the utilities for customers with smaller homes (under 1500 square feet) and lower consumption (lowest 20 percent of homes), low-income, moderate-income customers, customers whose primary language is not English, and African-American households. Hispanic households had lower participation rates for several of the utilities, as did renters. On the other hand, for seven of the eight utilities, multi-family homes were not found to have lower participation rates. Homes with younger head of household (under 30 years) had lower



participation rates than those with head of household 30 to 55 for several utilities. Participation rates tended to fall off again at higher ages.

Table 1-2 shows the corresponding results for non-residential sectors. Overall, participation rates were lower for smaller customers, defined in a number of ways. The analysis showed lower participation rates universally statewide and across the utilities for small business¹ and customers with fewer employees, and almost universally for customers with smaller buildings. Participation rates for single-location customers were also lower statewide and across most utilities, especially in the commercial sector.

Minority/women-owned businesses also had lower participation rates for in general both statewide electric and for individual utilities, with some exceptions in the commercial sector. Businesses with a primary language other than English had lower participation rates statewide and for NJNG, PSE&G and SJG.

Health Care had lower participation statewide and for six of the eight utilities. While Health Care typically had lower participation rates, for commercial the broader class of institutional customers incorporating Educational Services and Public Administration did not.

Participation rates for newer businesses were generally lower in the commercial gas sector, but not elsewhere. Multi-tenant units did not exhibit lower participation rates statewide nor for any individual utilities.

¹ Small business is defined as fewer than 20 employees for gas and less than 200 kW demand for electric.

Table 1-1 Residential Customer Categories with Lower Access to Energy Efficiency

Customer Category	Less Access to Energy Efficiency Indicated?										
	SW Elec	SW Gas	ACE	Butler	ETG	JCPL	NJNG	PSE&G Elec	PSE&G Gas	RKE	SJG
Low income (≤250% FPL)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Moderate income (250-400% FPL)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Primary language non-English	Yes	Yes	Yes	*	Yes	Yes	Yes	Yes	Yes	*	Yes
Multi-family units	No	No	No	No	No	No	No	No	No	No	Yes
Renters	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	Yes
African American households	Yes	Yes	No	*	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hispanic households	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Younger households	No	No	No	Yes	Yes	No	No	No	Yes	No	Yes
Lower consuming households	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Smaller homes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Data too limited to assess

Table 1-2 Non-Residential Customer Categories with Lower Access to Energy Efficiency

Customer Category	Less Access to Energy Efficiency Indicated?										
	SW Elec	SW Gas	ACE	Butler	ETG	JCPL	NJNG	PSE&G Elec	PSE&G Gas	RKE	SJG
	C I	C I	C I	NR	NR	C I	NR	C I	C I	NR	C I
Newer business	N N	Y N	N N	*	N	N Y	Y	N N	Y N	N	Y N
Small business	Y Y	Y Y	Y *	*	Y	Y Y	Y	Y Y	Y Y	Y	Y Y
Primary language non-English	Y Y	Y Y	N *	*	N	N *	Y	Y Y	Y Y	N	Y *
Minority/women-Owned ²	Y Y	N Y	Y *	*	Y	N *	Y	Y Y	N Y	Y	Y *
Multi-tenant	N N	N N	N N	*	N	N N	N	N N	N N	Y	N N
Institutional	N Y	N Y	N N	N	N	N N	N	N Y	N Y	N	N Y
Health care	Y Y	Y Y	N N	N	Y	Y N	Y	N Y	Y Y	Y	Y *
Smaller facilities	Y Y	Y Y	Y Y	*	Y	Y Y	Y	Y Y	Y Y	Y	Y N
Fewer employees	Y Y	Y Y	Y Y	*	Y	Y Y	Y	Y Y	Y Y	Y	Y Y
Single-location customers	Y Y	Y Y	Y N	*	Y	Y Y	N	Y Y	Y Y	Y	Y N

C|I: Commercial | Industrial
 NR: Combined Non-residential
 *: Data too limited to assess.

²The results were the same when analyzing minority- and women-owned businesses and minority-owned businesses alone.

1.3.2 Barriers and Mitigation Strategies

Table 1-3 describes the major barriers to energy efficiency. For each barrier, the table indicates the key customer categories particularly impacted affected by this barrier and recommends methods to overcome the barriers. Customer categories directly addressed in the study demo/firmographic and participation analyses are shown in *green italics* while categories outside of the study analysis are in black standard. Examples include “rural” which was not a variable in the demo/firmographic analysis and “new construction”, not fully captured in the participation analysis as program incentives are often not tied to a currently active utility account.

Table 1-3 Barriers, Affected Populations and Mitigation Strategies

Barriers	Particularly Affected Customers	Mitigation Strategies
Lack of customer awareness or information	<i>Limited English speaking, income</i> or education Rural <i>Small business, newer business</i>	<ul style="list-style-type: none"> ▪ Market segmentation ▪ Awareness campaigns ▪ Behavioral programs ▪ Product labeling ▪ Trade ally training
Skepticism, resistance to change	<i>Limited English speaking (proxy for immigrants)</i> <i>Limited income³</i> or education <i>Elderly</i> <i>Small business</i>	<ul style="list-style-type: none"> ▪ Education ▪ Messaging from credible sources
High upfront costs, insufficient access to financing	<i>Limited income</i> <i>Small business</i> <i>Institutional</i> Cash-flow constrained businesses	<ul style="list-style-type: none"> ▪ Free measures ▪ Direct install ▪ Rebate/grants ▪ Utility on-bill finance ▪ Specialized loans ▪ Tax benefits

³ Limited income is defined as low-income and moderate-income households.

Barriers	Particularly Affected Customers	Mitigation Strategies
Split incentives	<i>Renters</i> <i>Multi-family/multi-tenant</i> New construction	<ul style="list-style-type: none"> ▪ Direct install ▪ Market-specific initiatives ▪ Technical and marketing assistance to property managers, architects and builders
Complex buying process	<i>Limited English, education</i> <i>Multi-family/multi-tenant</i> <i>Small business, newer business</i> <i>Institutional</i>	<ul style="list-style-type: none"> ▪ Technology-driven user experience ▪ Streamlined program delivery ▪ Mid/upstream programs
Organizational practices & customs	<i>Institutional</i> <i>Other mid-sized, larger non-residential</i>	<ul style="list-style-type: none"> ▪ Targeted approaches for governments and institutions
Risk and uncertainty, hidden costs	Mid-sized, larger non-residential	<ul style="list-style-type: none"> ▪ Information and technical assistance ▪ Staff and trade ally training ▪ Comprehensive whole building approach from audit to inspection ▪ Performance-based contracts.

1.4 Recommendations

1.4.1 General

Recommendations to mitigate cross-sector barriers to energy efficiency include the following:

1. To mitigate information and awareness barriers, continue the aggregation of information done in this study to provide a full view of each customer. Comprehensive data will help outreach staff deliver the right messages and recommendations to each customer, fuel data analytics to support targeted awareness and outreach campaigns, and drive streamlined program delivery and technology to deliver a frictionless experience for customers, trade allies and suppliers.
2. Mitigate customer decision-making barriers through midstream and upstream programs, product labeling, efficiency standards that build energy efficiency improvements into all purchases and building code changes that require minimum efficiency for all renovation and new construction.
3. Invest in developing, educating, training and supporting the trade ally network in New Jersey, many of whom are active advocates for greater investment in energy efficiency.
4. Particularly for new construction, to address builder/buyer split incentives, offer outreach and technical assistance for builders and developers to create “green” properties.

1.4.2 Residential Sector

Recommendations to mitigate barriers for the residential sector overall include the following:

1. To efficiently mitigate information and decision-making barriers and simplify the decision making across a broad array of customers, consider a free or low-cost audit program and leverage technology, such as online and app-based home energy reports and usage alerts.
2. To efficiently mitigate customer awareness and trust barriers, reach consumers through market influencers, such as Sustainable New Jersey and large employers in the state.


Recommendations for residential customer categories shown not to be fully accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. For moderate-income customers, consider expanding initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address split incentives for renters, offer free installation of low-cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
6. To address supply chain issues in economically disadvantaged and rural communities, target distributor and retailer initiatives and encourage code changes, particularly for affordable housing.
7. Further explore and consider targeted initiatives and marketing for younger households.
8. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric and gas consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

1.4.3 Non-Residential Sectors

Recommendations to mitigate barriers for non-residential sectors include the following:

1. Conduct targeted outreach, including use of case studies from customers in like businesses and industries who have benefitted from energy efficiency.
2. Develop long-term relationships with commercial and industrial customers, e.g., through utility key account managers, to establish the trust necessary to enable joint analysis of opportunities.
3. Leverage partnerships with federal, state, and regional agencies and organizations, e.g., local trade associations to leverage their expertise and access to customers.

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4. Publicly communicate cycles of energy efficiency funding, for the longest outlook possible, to serve as an investment signal for customers and trade allies.
 5. Particularly for customers with industrial operations:
 - provide technical expertise from specialized professionals who understand each plant's core production processes and operating issues to provide quality technical advice and support.
 - provide custom options for more complex projects that require tailored solutions.
 - accommodate customer schedules, including operational and capital investment cycles.

Recommendations for non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for businesses with non-English primary language, explore providing more outreach materials in Spanish and other languages.
3. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
4. To mitigate lack of information for small businesses and, particularly for the commercial gas sector, newer businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small and starting companies.
5. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
6. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
7. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
8. Create measure buckets targeted to the different NAICs classifications with high barriers, including groceries/food services, lodging, health care and construction as well as, specific to the industrial sector, waste management/remediation, financial/insurance and real estate leasing. Create materials that speak the language of each group, including case studies from satisfied prior participants. Design delivery to work with each group's typical operating process.
9. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
10. High-consuming electric commercial and industrial customers have generally been active participants but have relatively low population savings rates. Further analysis should be conducted to determine if and how electricity measures could be expanded for high consumption participants.
11. High-consuming gas commercial customers generally had high participation rates and high population savings rates. High-consuming industrial gas customers had low participation and population savings rates. Further analysis could assess potential added industrial savings in the highest consumption tier.

2 INTRODUCTION

2.1 Study Purpose and Research Questions

The purpose of this study was to examine the demographics and firmographics of all customers in the service territories of each of the electric and gas public utilities in New Jersey. This is to comply with P.L. 2018, c. 17, codified at N.J.S.A. 48:3-51-87 et seq., commonly known as the Clean Energy Act of 2018 ("Clean Energy Act" or "CEA"), as well as in response to the New Jersey Board of Public Utilities (NJBP) Order Docket Nos. QO19010040 and QO19060748 (dated October 7, 2019), which directed the utilities to complete a demographic analysis pursuant to the Clean Energy Act. The Clean Energy Act of 2018 states:

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The study addresses the following research questions:

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2. Determination of whether all customer categories can participate fully in implementing energy efficiency measures
3. Identification of market barriers that prevent full participation in energy efficiency programs
4. Development of recommendations for methods to overcome barriers to participation in energy efficiency programs

In this study, DNV GL conducted a detailed demographic and firmographic analysis of electric and natural gas customers and analyzed energy efficiency program participation patterns to assess barriers by customer category. The study summarizes common barriers to efficiency program participation and, based on secondary research and the demographic, firmographic and participation analyses, recommends ways to mitigate these barriers to accelerate the adoption of energy efficiency in New Jersey.


2.2 Organization of Report

The remainder of this report is organized as follows:

Section 3: Methodology and Approach – Describes the steps to complete this study, including database construction, data analysis and the approach to addressing the research questions.

Section 4: Barriers to Participation - Addresses the third and fourth research questions: identification of market barriers that prevent full participation in energy efficiency programs, and development of recommendations for methods to overcome the barriers. The chapter links barriers to customer categories and provides general and sector-level recommendations.

Section 5: Customer Categories and Participation Rates – Addresses the first and second research questions: identification of the major customer categories statewide and by utility and determination of whether all customer categories can participate fully in implementing energy efficiency measures. The chapter also provides customer category-level recommendations. For each utility/state and sector, overall findings and recommendations are presented first, followed by a set of demo/firmographic tables.



Appendix A: Additional Methodology Details – Provides additional detail on the methodologies used to acquire, transform, and analyse the large amount of data for this study, as well as the rules used to help ensure customer confidentiality.

Appendix B: Bibliography – provides a bibliography of secondary sources.

3 METHODOLOGY AND APPROACH

This section describes the steps to complete this study:

- Engagement and data delivery
- Database construction
- Public data set development
- Data analysis
- Approach to research questions

Appendix A provides additional details on the database construction and data analysis.

3.1 Engagement and Data Delivery

DNV GL engaged the utilities and the BPU to identify data needs and sources and provided a detailed data request. The utilities and the BPU prepared and delivered data sets to DNV GL, including consumption and program tracking data from the utilities and program tracking data from the BPU.

3.2 Database Construction

DNV GL standardized and merged the data into a statewide database linking consumption data, utility and statewide program participation data, and third-party data on demographics and firmographics. Amalgamating utility data with third party data produced a data model with all the fundamental information needed so that derived metrics could be developed and used to comprehend the underlying patterns and information.

3.2.1 Data Sets

Data for this analysis consists of four main types:

- **Customer Files--Utility customer information system (CIS) data:** Each utility provided data tables that listed customer account ids, premise ids, names, and addresses. DNV GL used these data primarily to link the various data sources.
- **Usage Files--Utility consumption data:** The utilities provided (approximately) monthly consumption data for November 2018 to November 2019. Non-residential records also had demand information.
- **Program Files--Program participation data from the BPU and the utilities:** These data consisted of measure and project level information used to calculate electric and gas savings for projects completed November 1, 2016 to November 30, 2019. These included name, address, participation date, project savings, and various details about the measures. Most of the program activity across the state is run by the BPU. DNV GL matched these projects to specific utility customers through a combination of account id and address matching.
- **Supplemental Files--Demographic and firmographic data, including purchased third-party data sets as well as public data.** The following third-party data sources were used for this project:

Infogroup: Infogroup maintains proprietary residential and business data compiled from multiple sources, including customer purchases, property tax records, and other proprietary and public sources. Infogroup uses a variety of data acquisition and cleaning methods, including telephone and manual verification. Infogroup provided data for most of the non-utility data fields used in this study. While the coverage rates are less than 100 percent for many variables, coverage is enough to allow analysis of energy efficiency participation in relation to most of these variables.

LEED Certification: The U.S. Green Building Council (USGBC) maintains a public certifications database. Buildings in this database are identifiable by address, and the record also includes the building name and type. Some records are confidential, identifying only the state, building size, and building type. Only records that could be linked to a utility account are included in the analysis provided here.

Census Household Data: For the residential analysis, Census block group characteristics from the American Community Survey (ACS) were used to provide cross-checks by utility with the other data sources for certain variables, as well as to provide more complete demographic distributions for variables known only for a subset of records in the compiled utility data. In some cases, DNV GL recoded the categories to improve alignment with Infogroup categories (and vice versa).

County Business Patterns (CBP) Data: CBP data provide employment and revenue data by county and NAICS code. Because this information was already incorporated into the Infogroup records, DNV GL used it to provide cross-checks by utility with the other data sources, as well as to provide more complete firmographic distributions for variables known only for a subset of records in the compiled utility data.

Commercial Building Energy Consumption Survey (CBECS): CBECS provides data on building size and number of establishments per building at the Census division level. DNV GL used these data as cross checks for related Infogroup variables, as well as to provide more complete firmographic distributions for variables known only for a subset of records in the compiled utility data.

3.2.2 Data Cleaning

The data cleaning process consisted of first validating the presence and consistency of data fields and verifying appropriate distributions and totals of key metrics such as energy consumption, count of customers, count of premises, energy savings.

3.2.3 Data Linkage—Utility and Program Data

Once the data were verified at a high level, they were loaded into the database for joining into the data model. Each record in the data represents a «Unique ID». A unique id is based on the intersection of utility, premise, and account id. This means Unique ID is approximately analogous to a meter-level data grain. An account with multiple premises (e.g. a group of franchises) would have one Unique ID for each premise. Likewise, a premise with multiple accounts (e.g., multi-family housing) would have a Unique ID for each account. Because the Unique ID is the combination of premise and account, the total number of Unique IDs can be larger than the number of accounts for a given utility.

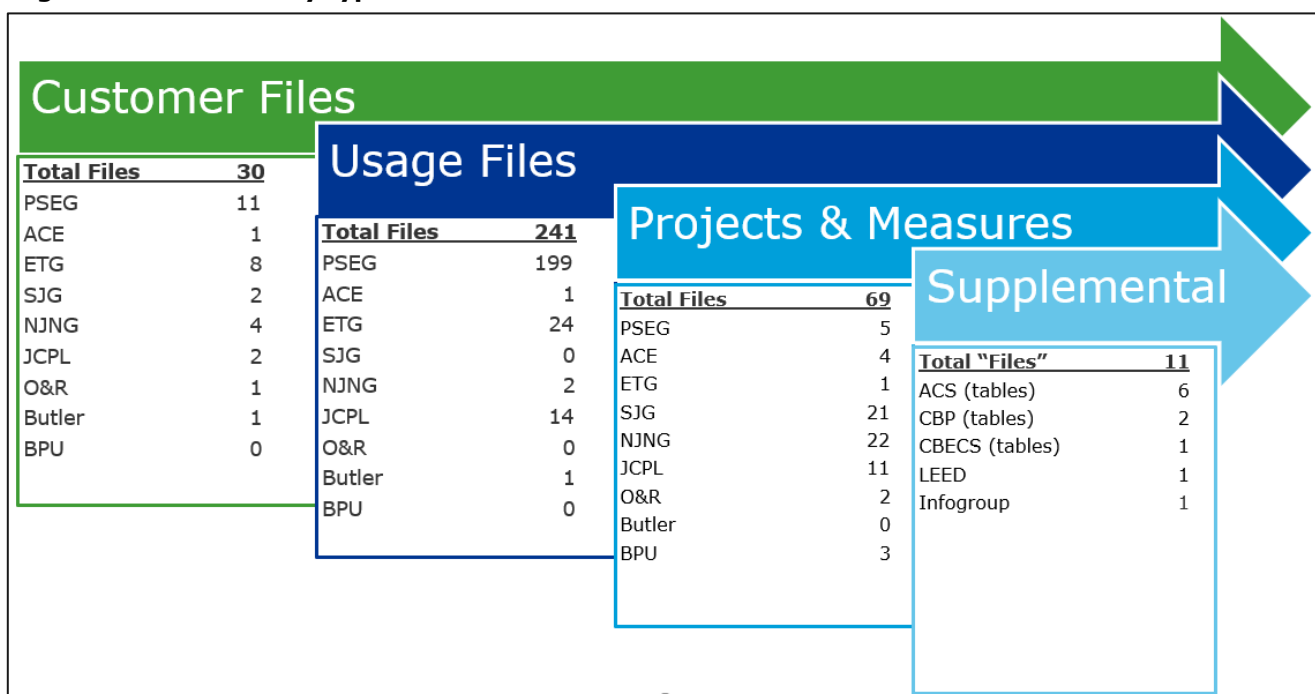
The Unique IDs were created specifically for this project and are devoid of any identifying information. While customer name and address were used to link data sets, the final compiled data set used for analysis included only the Unique ID as an identifier.

3.2.4 Data Linkage—Supplemental Data

Infogroup data were assigned to a Unique ID based on customer data by customer name and address, separately for each utility. LEED data were joined based on address matching. ACS data were appended by Census block group matching. CBP data were appended based on county. CBECs data are regional, so the exact same data apply to and were appended to all utilities.

Figure 3-1 indicates the number of each type of file received and processed into the final files linked by Unique ID.

Figure 3-1 Datasets by type and source



3.3 Public Data Set Development

From the compiled database, DNV GL produced an anonymized, confidentiality-protected public microdata set for further analysis by other parties. Anonymization rules were developed in consultation with the utilities and the BPU, and were guided by processes used for similar federal data sets.

Three data sets were provided for public use:

1. Individual-customer residential data, masked as indicated
2. Individual-customer small/medium Non-Residential data, masked as indicated
3. Aggregated data for Non-Residential customers excluded from the individual-customer data set.

To translate the analysis data set into data sets suitable for public use, DNV GL added additional confidentiality protection. These steps included:

- Masking geographic and/or NAICS identifiers for all customers in a geographic/NAICS group with fewer than 100 residential customers or fewer than 15 non-residential customers.

- Other categorical variables were collapsed into fewer categories or excluded from the file to avoid revealing unique customers.
- Excluding from the individual-customer data all customers above a certain size (consumption level) as well as all customers in rare NAICS groups. Data for these customers were provided in aggregate only.

3.4 Data Analysis

From the compiled database, DNV GL produced summary tables of statewide and utility-specific demographic and firmographic characteristics. Analysis of the compiled data set began with customer segmentation, i.e., by energy use, industry classification, and demographic data. DNV GL also developed a summary of key market barriers identified in prior studies as affecting particular segments, along with strategies available for mitigating these barriers. This review provided a foundation for interpreting segments found in this analysis to have lower participation rates, and for proposing ways to mitigate the apparent market barriers.

The following subsections describe:

- Data sources and development of variables to create the customer categories
- Calculation of key metrics by customer category
- Data suppression rules applied to protect customer confidentiality

3.4.1 Categorical Variables

Table 3-1 summarizes the variables used to develop the customer categories in this study as well as the underlying data sources. Annual energy use, peak monthly demand, and rate class are based on utility data. LEED certification was based on data published by the USGBC. The other categorical variables are based on Infogroup data, with parallel data from ACS, CBP, or CBECS where available.

Table 3-1 Categorical variables used in the study

Sectors	Variable	Definition (sources)
R, C, I	Annual energy use	Uses quintiles of the distribution of annual energy use statewide for each class: Residential, Commercial, Industrial (aggregated utility data, no public data comparison)
R, C, I	Building certification	LEED certification of the building: None, Silver, Gold, Platinum (USGBC, no public data comparison)
R, C, I	Square footage	Size of structure in square feet (Infogroup, ACS, CBECS)
R	Home value	Dollar value of house (Infogroup, ACS)
R	Poverty status	Low income (\leq 250% federal poverty level (FPL), moderate income (250 to 400% FPL), greater than 400% FPL (Infogroup, ACS)
R	Household income	Annual household income categories (Infogroup, ACS)
R	Household size	Number of people living in the house (Infogroup, ACS)
R	Housing type	Single family, multi-family, mobile home, nursing/retirement home (Infogroup, ACS)
R, C, I	Location	Zip codes (Infogroup, no public data comparison)
C, I	NAICS code	2-digit NAICS codes (Infogroup, CBP)
C, I	Number employees ⁴	(Infogroup, CBP)
R	Ownership	Tenant-occupied or owner-occupied (Infogroup, ACS)
C, I	Ownership status	Single-location, branch, headquarters, or subsidiary (Infogroup, no public data comparison)
C, I	Peak monthly demand	Uses quintiles of the distribution of peak monthly demand statewide for each class: Commercial or Industrial (aggregated utility data, no public data comparison)
R, C, I	Primary language	English or non-English (Infogroup, ACS)
R, C, I	Rate class	Utility rate codes (Utility consumption data, no public data comparison)
R	Householder age	Age of head of household (Infogroup, ACS)
R, C, I	Cultural group ⁵	Cultural group of householder/owner (Infogroup, no public data comparison)
R, C	Heating fuel	Main heating fuel, distributional data only. (No utility data; ACS only by utility for residential and CBECS only statewide for commercial).
R	Date home built	Decade when the structure was originally built or underwent most recent major renovation (Infogroup, no public data comparison)
C, I	Date business opened	Decade the business first appeared in the yellow pages. Goes back to 1980 (Infogroup, no public data comparison)
C, I	Number of tenants	Number of tenants in the building (Infogroup, CBECS)
C, I	Woman or minority-owned business ⁵	Contains levels for woman-owned, minority-owned, or neither (Infogroup, CBP)

R = Residential

C = Commercial

I = Industrial

⁴ Small business was defined as under 20 employees for gas utilities and under 200kW peak demand for electric utilities.

⁵ Culturally disadvantaged for residential and minority-owned for C&I were defined according to the definition used for eligibility as a NJ Disadvantaged Business Enterprise: "African Americans, Hispanics, Native Americans, Asian-Pacific, and Subcontinent Asian".
<https://www.state.nj.us/transportation/business/civilrights/dbe.shtm#eligibility>

3.4.2 Key Metrics

Table 3-2 summarizes the key metrics prepared and analyzed in this study for each customer category. The goal of the metrics calculations were to provide comparisons among customer categories to indicate which categories are indicated to have higher barriers to program participation.

The primary metric used to indicate if a subgroup is not participating fully in energy efficiency programs is a lower Participation Rate compared to customers in the sector outside that subgroup. The relative size of the subgroup is indicated by the Unique IDs percent and the Consumption percent.

The analysis data set includes for each Unique ID the total usage of each fuel, whether the Unique ID participated in any of the utility or statewide programs over the 3 years captured in this study, the number of participation events across all programs over the 3-year period, and the total savings over these participation events. The population savings rate for a particular subgroup indicates the total savings achieved by the subgroup over the 3-year period, as a fraction of its annual consumption. Consumption for each Unique ID is based on a 12-month period beginning in November of 2018 and ending in November of 2019, with varying begin and end dates within the month according to the account's meter reading periods.

Table 3-2 Overview of key metrics

Metric	Definition	Purpose
Public data (ACS CBP or CBECS) percent	Percent of population in a given category based on public data	Provide demo/firmographic distributions from an alternate authoritative source for comparison with those from the linked data set developed in this study
Unique IDs	Total number of Unique IDs within the category	Size of the segment in terms of Unique IDs
Unique ID percent	$\frac{\text{Total Category UniqueIDs}}{\text{Total Utility UniqueIDs}}$	Relative size of the segment in terms of Unique IDs.
Consumption	Total annual kWh or therms consumed by the category	Size of the segment in terms of consumption
Consumption percent	$\frac{\text{Total Category Consumption}}{\text{Total Utility Consumption}}$	Relative size of the segment in terms of consumption
Participation rate	$\frac{\text{Number of Participating Unique IDs}}{\text{Unique IDs in the Category}}$	Participation rate in any EE program, in terms of accounts
Population savings rate	$\frac{\text{Total Savings of Participating Unique IDs}}{\text{Total Consumption of all Unique IDs in Category}}$	Depth of savings for the entire population segment. Savings are from all projects over three years; consumption is from one year for participating and non-participating Unique IDs combined.

3.4.3 Data Suppression to Protect Confidentiality

To avoid revealing information about unique or rare customers, metrics were not included in the tables if a group had fewer than 100 Residential customers, or fewer than 15 Non-Residential customers.

3.5 Approach to the Research Questions

DNV GL took the following approach to addressing each research question.

1. **Identification of the major customers categories in each electric and natural gas utility's service area.** DNV GL developed a set of demo/firmographic tables for each sector overall and by utility, with breakdowns into customer categories or *population segments* according to different dimensions.
2. **Determination of whether all customer categories can participate fully in implementing energy efficiency measures.** DNV GL compared participation rates by detailed customer category. Where participation rates for a group were substantially lower than those for the rest of the population, this indicated that barriers are affecting that group.
3. **Identification of market barriers that prevent full participation in energy efficiency programs.** DNV GL drew on our experience with program barriers, as well as a review of recent studies to identify common barriers to energy efficiency program participation. The process was iterative, with DNV GL refining and expanding barriers relevant to major customer categories from the demographic analysis and the customer categories that the participation analysis indicated were not able to participate fully in implementing energy efficiency.
4. **Development of recommendations for methods to overcome barriers to participation in energy efficiency programs.** Based on secondary research and prior experience, DNV GL developed recommendations to mitigate barriers for customer categories that (1) the demo/firmographic analysis indicated were of substantial size in New Jersey and (2) the participation analysis indicated were not able to fully participate in energy efficiency. The recommendations are based on the types of barriers identified as commonly affecting the customer categories found to have lower participation. Assessment of existing programs was outside the scope of this study, so that some of the recommended strategies may be included in current programs.

4 BARRIERS AND SECTOR RECOMMENDATIONS

This chapter provides the general foundation for addressing the third and fourth research questions: identification of market barriers that prevent full participation in energy efficiency programs, and development of recommendations for methods to overcome the barriers. This section leverages the detailed demo/firmographic and participation analysis findings in Section 5.

4.1 Major Barriers and Mitigation Strategies

Table 4-1 describes the major barriers to energy efficiency. Every system for classifying barriers to energy efficiency participation has some nuances and some potential for overlap. The list here generally aligns with the list in the classic paper by Eto, Prah, and Schlegel⁶, with some enhancements based on the more recent literature, with a full list of references provided in Appendix B. The table also describes the primary population segments affected by these barriers and high-level strategies to mitigate each of the barriers, based on the reference materials as well as prior experience.

For each barrier, the table indicates the key customer categories particularly impacted affected by this barrier and recommends methods to overcome the barriers. Customer categories directly addressed in the study demo/firmographic and participation analyses are shown in *italics* in the table while categories outside of the study analysis are in black. Examples include “rural” which was not a variable in the demo/firmographic analysis and “new construction”, not fully captured in the participation analysis as program incentives are often not tied to a currently active utility account.

Table 4-1 Matrix of Barriers, Affected Populations and Mitigation Strategies

Barriers	Description	Primary Population Segments Affected	Mitigation Strategies
Informational and Trust Barriers			
Lack of customer awareness or information	Customers may be unaware of programs or they may lack information about the potential benefits that will result from EE measures.	<i>Limited English speaking, income or education</i> Rural <i>Small business, newer business</i>	<ul style="list-style-type: none"> ▪ Market segmentation and targeted awareness and outreach campaigns ▪ Behavioral programs coordinated with utility communication channels ▪ Product labeling.

⁶ Eto, J., Prah, R., Schlegel, J (1996). A Scoping Study on Energy Efficiency Market Transformation by California Utility DSM Programs, Lawrence Berkeley National Laboratory.

Barriers	Description	Primary Population Segments Affected	Mitigation Strategies
Skepticism, resistance to change	<p>Individuals do not trust the program promises.</p> <p>Customers avoid change, are resistant to new technology.</p>	<p><i>Limited English speaking</i> (proxy for immigrants)</p> <p><i>Limited income</i> or education</p> <p><i>Elderly</i></p> <p><i>Small business</i></p>	<ul style="list-style-type: none"> Education of customers, trade allies and suppliers Messaging from credible sources.
Financial Barriers			
High upfront costs, insufficient access to financing	<p>The initial cost of installation or purchase is high. This deters EE participation in general and limits EE program participation to customers who can afford to buy in.</p>	<p><i>Limited income</i></p> <p><i>Small business</i></p> <p><i>Institutional</i></p> <p>Cash-flow constrained businesses</p>	<ul style="list-style-type: none"> Free measures for disadvantaged groups Direct install Rebates/grants Utility on-bill finance Specialized loans Tax benefits
Split incentives	<p>Split incentives arise in situations where the benefits are realized by one group, but the other group bears the cost.</p>	<p><i>Renters</i></p> <p><i>Multi-family/multi-tenant</i></p> <p>New construction</p>	<ul style="list-style-type: none"> Direct install Market-specific initiatives Technical and marketing assistance to property managers, architects, builders in developing and leasing green properties

Barriers	Description	Primary Population Segments Affected	Mitigation Strategies
Decision-Making Barriers			
Complex buying process	<p>EE may require a more complex purchase decision than a standard alternative.</p> <p>Customers will be reluctant to fill out extensive paperwork or go through a complex process in order to participate.</p>	<p><i>Limited English, education</i></p> <p><i>Multi-family/multi-tenant</i></p> <p><i>Small business</i></p> <p><i>Newer business</i></p> <p><i>Institutional</i></p>	<ul style="list-style-type: none"> Technology that delivers a frictionless user experience for customers, trade allies and suppliers Streamlined program delivery Mid/upstream programs
Organizational practices & customs	<p>Bureaucratic hurdles, such as procurement policies For local schools/governments, may need bond issue to generate capital or annual vote for budget approval.</p>	<p><i>Institutional</i></p> <p><i>Other mid-sized, larger non-residential</i></p>	<ul style="list-style-type: none"> Target marketing, measures and processes for governments and institutions
Risk and uncertainty, hidden costs	<p>Performance risk of less established or familiar technologies. Uncertainty about hidden costs, realized savings and the personal risk of making a bad decision.</p>	<p><i>Mid-sized, larger non-residential</i></p>	<ul style="list-style-type: none"> Information and technical assistance Staff and trade ally training Comprehensive whole building approach from audit to inspection Performance-based contracts
Supply Chain Barriers			
Supply chain limitations	<p>Lack of suppliers providing EE products and services</p> <p>Technologies not available in the local market</p>	<p><i>Limited income</i></p> <p>Rural</p> <p><i>Small business</i></p>	<ul style="list-style-type: none"> Efficiency standards Bulk measure purchases Mid/upstream incentives Training

4.2 Recommendations

This section provides recommendations to mitigate barriers to energy efficiency in New Jersey overall and by sector, i.e., residential, commercial and industrial. Recommendations for specific customer categories found to have low participation rates indicating less access to energy efficiency, e.g., residential renters or small businesses, and by utility are in Section 5.

4.2.1 General Recommendations

Comprehensive information on customers is critical to strategies to mitigate information and awareness barriers. This study provides a good first step in maintaining an aggregated and comprehensive dataset. However, the compilation of the dataset for this study revealed barriers to a comprehensive energy efficiency customer dataset. Barriers to be addressed include confidentiality restrictions in program agreements and lack of consistent customer identifiers, such as utility account number, in program tracking systems.

A comprehensive dataset is important for several reasons:

1. The most effective customer outreach and engagement approach is built on a comprehensive view of each customer. Outreach staff need a full understanding of all program interactions, to make sure the right message and recommendations are delivered to each customer.
2. Data analytics and segmentation to drive targeted awareness and outreach campaigns are a key tool for overcoming information and awareness barriers. As one example of using segmentation and targeted outreach to reduce barriers, DNV GL conducted an analysis for the Smart Energy Consumer Collaborative⁷ developing clusters of residential customers. The research showed that 30% of consumers are “Green Champions” with the point of view “Smart energy technologies fit our environmentally aware, high-tech life-style,” Innovation messaging on cutting edge products speaks to these early adopters, who can serve as market influencers for efficiency. Another 20% are “Savings Seekers” with the point of view “How can smart energy programs help me save money.” Messaging on rebates and savings speaks to this group of customers.
3. Data drives technological approaches to mitigating barriers. Data is critical for streamlined program delivery and technology that delivers a frictionless experience for customers, trade allies and suppliers.

One effective approach to mitigating decision-making barriers is to remove the decision. Recommended mechanisms to do this include:

- Opt-out offering such as automated home energy reports, discussed below under residential recommendations.
- Midstream and upstream programs that move the decision from the buyer to the supplier, including engaging and training manufacturers and distributors of energy efficient products, collaborating with them to manage supply for measures in customer incentive programs and offering targeted upstream and midstream financial incentives.
- Product labeling initiatives, working with distributors and retailers to promote efficient alternatives, potentially in conjunction with incentives.

⁷ Smart Energy Consumer Collaborative (2018). Data Analytics: Unlocking the Consumer Benefit.

- Efficiency standards that build energy efficiency improvements into all purchases and building code changes that require minimum efficiency for all renovation and new construction. Efficiency standards and code changes can drive significant savings and should be a formal part of the approach to reaching the savings goals of the Clean Energy Act. Using electricity as an example, an IEE white paper estimated that codes and standards changes alone could provide savings as high as 7% of baseline over ten years.⁸

Another efficient approach to mitigating barriers to energy efficiency is to invest in developing, educating, training and supporting the trade ally network in New Jersey, many of whom have been actively advocating for greater investment in energy efficiency in the state. Trade allies are the vector through which most customers purchase certain measures. For example, most residential customers purchase major HVAC equipment by calling an HVAC contractor. For some types of equipment, these market actors are the only interaction a customer has with an energy-using equipment expert and they therefore have a strong influence on customer decisions. There are many proven benefits to leveraging trade allies including:

- Provides an instant channel to targeted end-use customers seeking equipment upgrades
- Leverages existing relationships in the community with entities that will be pivotal to success in providing full access to energy efficiency
- Helps build the capacity and business of local contractors creating economic development value
- Provides the opportunity for co-branding and marketing at relatively low cost.

4.2.2 Residential Sector Recommendations

To efficiently mitigate information and decision-making barriers and simplify the decision making across a broad array of customers, consider a free or low-cost audit program, such as those offered by NJNG and SJG. Also, leverage technology to present customers with online home energy reports and usage alerts, accessible through their utility bill or app. These tools have been proven to deliver savings from behavioral changes in addition to serving as a channel to assistance with energy efficiency measure installation. Home energy reports and measure recommendation engines can simplify decision-making as well as the buying process, e.g., by connection to an appropriate existing home program or an energy efficiency on-line marketplace. ACE, ETG, NJNG, PSE&G and SJG already deliver behavioral programs. As of mid-Q4 2019, these five utilities had analyzed data for and communicated with over 1.4 million customers, including close to 750,000 electric and over 1.1 million gas customers. Expansion of technologically-driven tools across the state is an efficient means to mitigate multiple barriers for a broad array of residential customers.

Another approach to efficiently mitigating awareness, trust and decision-making barriers is targeting market influencers and groups of consumers that can deliver aggregate value. Large multi-family buildings are one natural group. As a second example, green communities can serve as aggregators for residential efficiency programs. Sustainable New Jersey is one market influencer with which utilities and the state could partner to develop Community-Led Energy Efficiency, like their Community-Led Solar Program. Community-Led Energy Efficiency could offer credits to the community to help them earn a bronze, silver, or gold certification. Following the lead of successful “Solarize” campaigns in New York, community programs could be structured with tiers, where the participating residents all receive some incentive if a certain number of consumers participate, e.g., a 10% program price break for all when 300 participants sign up. A third

⁸ https://www.edisonfoundation.net/iei/publications/Documents/IEE_RohmundApplianceStandardsEfficiencyCodes1209.pdf

example is leveraging large employers as a consumer aggregator of their employee base. Examples of top New Jersey employers that could be included in such outreach are indicated in Table 4-2.

Table 4-2 Examples of New Jersey Employers for Potential Targeted Outreach

Employer	Number of Employees (rounded)
Wakefern Food Corp	35,000
Barnabas Health	21,000
UPS	19,000
Walmart	17,000
Verizon	15,000
Meridian Health	12,000

4.2.3 Commercial and Industrial Sector Recommendations

Strategies to mitigate barriers to participation for commercial and industrial customers include⁹:

- Conducting targeted outreach, including use of case studies from customers in like businesses and industries who have benefitted from energy efficiency.
- Educating customers and their contractors on how to understand and quantify the operating cost savings and other benefits that result from energy efficiency investments.
- Developing long-term relationships with commercial and industrial customers, e.g., through utility key account managers, to establish the credibility and trust necessary to enable joint identification of opportunities and analysis of savings.
- Leveraging partnerships with federal, state, and regional agencies and organizations, e.g., local trade associations to leverage their expertise and access to customers.
- Publicly communicating availability of cycles of energy efficiency funding, with the longest outlook possible, to serve as an investment signal for customers and create certainty for trade allies supporting these customers.
- Particularly for customers with industrial activities:
 - providing technical expertise from specialized professionals who understand each plant’s core production processes and operating issues to provide quality technical advice and support.
 - providing custom options for more complex projects that require tailored solutions.
 - accommodating customer schedules, considering the industrial company’s operational schedule, capital investment cycle, and decision-making processes so that energy efficiency projects align with internal drivers.

⁹ *Communicating the Value of Industrial Energy Efficiency Programs*, Meegan Kelly and Ethan Rogers, February 2016 ACEEE White Paper.



4.2.4 New Construction Markets Recommendations

To address builder/buyer split incentives in new construction markets, offer outreach and technical assistance for builders and developers to create “green” properties. Utilities and the state could partner with organizations like the New Jersey Chapter of the U.S. Green Building Council in outreach to builders. In residential markets, green building can help developers to differentiate properties, quantify the value in comfort and bill savings over time and sell more quickly at higher prices. The same approach applies for commercial and industrial construction, with added value to organizations with sustainability plans, particularly companies promoting their commitment to sustainability to their customers.

The study included analysis of Leadership in Energy and Environmental Design (LEED) certification. The analysis showed no significant residential or industrial LEED certification in New Jersey. This not surprising, as while available for virtually all building types, LEED certification is most often used for commercial new construction. Of over 500,000 commercial electric customers analyzed, about 200 were LEED certified and another 100 in process. LEED-certified buildings were much more likely to have participated in energy efficiency programs, with over a quarter of Platinum down to an eighth of in-process customers participating, versus less than five percent of customers that were not certified. The current levels of LEED certification suggest opportunity for certification-based green building mitigation strategies in New Jersey.

5 FINDINGS BY UTILITY AND SECTOR

5.1 Introduction

This section addresses the study's first and second research questions: (1) identification of the major customer categories statewide and in each utility's service area and (2) determination of whether all customer categories, e.g., residential renters and small businesses, can participate fully in implementing energy efficiency measures. Identification of customer categories is based on the variables identified in Section 3. Categories with lower participation rates compared to the others in their sector are identified, with particular attention to subgroups that are commonly found to have greater barriers.

Where lower participation rates are observed for customer categories, these categories are linked to common barriers, based on the Section 4 matrix. To address the fourth research question, covered in part by Section 4's *general* recommendations, this section provides recommendations to mitigate barriers for *specific customer categories*. These recommendations are based on the general design strategies identified in Section 4. This study did not include review or process assessment of existing programs.

That is, this study identifies groups that have lower participation rates, notes barriers that commonly affect such groups, and identifies strategies to mitigate such barriers. These recommended strategies in some cases are already part of existing programs. The recommendations should be considered as a guide to future program designs, not as a critique of existing programs.

5.1.1 Organization of the Results

Results in this chapter appear first for statewide electric and statewide gas then for each utility in alphabetical order. For the statewide results and for each utility, key findings are presented first, followed by the detailed metrics tables used to develop the results.

The key findings sections for the state and each utility present which customer categories are participating less in energy efficiency programs, thus indicating less access to energy efficiency. Examples of customer categories include residential renters, multi-family, and small business. The primary result used to determine that a category has less access to energy efficiency is the category's participation rate compared to that for the rest of the population.

The key finding sections for the state and each utility conclude with recommendations specific to the customer categories shown to have lower participation statewide or for the given utility.

5.1.2 Understanding the Findings and Metrics Tables

Key findings are followed by the detailed metrics tables for each sector. Section 3.4 provides details on the variables used to develop the customer categories and definitions in the metrics tables. Additional key points for interpreting these tables follow.

Subpopulation Barrier(s) Indicated. In the Key Findings sections, particular subgroups are assessed for indications of barriers. The subgroup is flagged as having barriers indicated if its participation rate is more than 10% lower than that of the rest of its sector, excluding "unknown." For example, if the rest of the sector has a participation rate of 8.0%, a subgroup rate of 7.2% or lower ($8.0\% - 0.1 \times 8.0\%$) would be flagged as "Yes" in the column "**Subpopulation Barrier(s) Indicated?**" A subgroup rate of 7.3 percent or higher would be flagged as "No."

Unknown category. Most of the metrics tables have a row at the bottom labeled "Unknown". These are utility customers (Unique IDs) for which the categorical variable in that table, e.g., square footage, was not available.

Public data. Some tables have a public data column, indicating a public data source was available. The public data sources are either the ACS 2018 (residential) or CBP 2012 (commercial, industrial, non-residential) datasets. For the commercial Number of Tenants, the public data set is the 2012 CBECS data for the MidAtlantic Census division. The public data provide a more complete distribution for variables that are unknown for a portion of the Unique IDs. The relationship between the variable and participation rates can be assessed only based on those with known values of the variable. The participation rate comparisons for the known values can be useful even if a large fraction are unknown.

Heating fuel. Heating fuel was a variable of interest but was not generally available from either the utility or third-party data. To provide some demo/firmographic assessment of heating fuels, the distribution of home heating fuel based on ACS block group data for each utility is included in the tables of residential metrics, and the distribution of commercial building heating fuel for the CBECS MidAtlantic Census division in the tables of statewide commercial metrics. Analysis of participation by heating fuel is not possible except to the extent a rate code indicates electric or gas heating.

Masked values. To protect confidentiality, data are not displayed for any row that would have fewer than 100 residential or fewer than 15 non-residential customers. Some of the metrics tables have a row at the bottom labeled "Masked", while others have merged with adjacent or similar categories where possible.

Unique IDs with no consumption data. Some of the BPU records were matched to a utility Unique ID for which no consumption data could be linked. These records were retained in the analysis so that as much of the savings activity as possible could be included in the metrics for each utility's customers. However, for subgroups with a large proportion of customers with no linked consumption, the savings total may be large relative to the identified consumption total. The proportion of Unique IDs without linked consumption data is indicated in the "Unknown" row of the tables of metrics by consumption. Statewide, 0.1 percent of electric Unique IDs had no matched electric consumption, and fewer than 2 percent of gas Unique IDs had no matched gas consumption. For subgroups in the tables that had many or all Unique IDs Cases with no consumption data, the following situations are identified;

- **Population Savings Rate 'Inf'.** For table rows with 0 consumption data for all Unique IDs in the subgroup, the population savings rate is indicated as 'Inf,' meaning the ratio of subgroup savings to subgroup consumption is infinite (or undefined). This situation occurred for Unknown consumption rows of the tables by consumption level, and for some utilities with Unique IDs that had no rate code provided.
- **Population Savings Rate 'HIGH'.** The population savings rate is indicated as 'HIGH' if it exceeded 50 percent. This situation occurred in a few table rows where there was 0 consumption for a large proportion of Unique IDs, but not all. The calculated population savings ratio is considered unreliable for these cases.

Unmatched BPU program records. For most utilities, a table of "unmatched BPU records" follows the metrics tables for each sector. These represent BPU participation records that could not be matched to an account for the utility listed as serving that customer.

Consumption levels. Electric consumption (kWh) and residential gas consumption are split into quintiles at the statewide level. These are consumption bands each containing 20 percent of customers. Because the bands are defined at the statewide level, the proportion of customers in each band for each individual utility can vary from 20 percent. Electric demand categories were defined based on qualifying criteria for the small business program (200 kW) and large user programs (over 400 kW). Gas consumption categories were also defined based on program criteria (large users: 4,000 DTh per month). For both demand and non-residential gas consumption, additional categories were produced to provide more discrete batches of small or large users.

Sector classifications. The sector classifications, Residential, Commercial, or Industrial, was based on the customer information provided by each utility. Industrial NAICS codes were found for many commercial sector customers, and vice versa. This is common in utility data.

Negative savings. A handful of rows in the metrics tables show negative savings for a subgroup. The program savings records include some negative values, which may come from corrections to prior records or other program adjustments. The negative values are appropriately included in the aggregated results but result in occasional anomalous values for small subgroups.

Unique ID counts. As described in Section 3.2, a Unique ID is the unique combination of an account number with a premise. As a result, the total number of Unique IDs may be greater than the number of accounts for a utility.

Residential and Non-residential multi-tenant premises: When a utility account number was not provided, BPU program records were matched to utility accounts by address. This process led to two possible situations of uncertain match: (1) Some program records were mapped to multiple Unique IDs based on address. This could occur if the BPU record did not identify the individual unit(s) at a multi-tenant building, e.g., for new construction or whole building projects, or because unit information was simply missing. In cases with multiple Unique IDs matched to a single BPU record, all the Unique IDs were counted as participants, and the total savings was split equally among them. (2) If the BPU record included a unit number, it would be address-matched to a utility record only if the unit numbers agreed. A mismatch in unit numbers accounts for some of the unmatched BPU savings. As a result of these two situations, participation rates for multi-tenant buildings may be overstated in some cases and understated in others.

Participation counts and behavioral programs. Any Unique ID that had one or more participation events in the three-year window of this study was counted as a participant, with the exception of Behavioral or Home Energy Report (“behavioral”) programs. Tracking data for behavioral programs, by their nature, does not identify which “Treated” customers, who received Behavioral program reports, took energy efficiency actions. Moreover, the number of treatment customers was much larger than the number of Unique IDs participating in other programs, by a factor of two or more for each utility. As a result, the number of treatment group customers, and their distribution based on behavioral program targeting strategies, could obscure customer participation in other programs. Therefore, Unique IDs that were in a behavioral program treatment group but did not participate in any other program are not

included in participant counts. Behavioral program results are, however, included in the statewide and, where applicable, utility report findings.

As described in Section 3.2, the data base development required linking hundreds of data sets including utility customer information, utility usage data, program data, and third-party data. Quality control checks were conducted to ensure each utility's compiled data set was as complete and correct as possible. However, not all fields of interest could be matched for each utility customer, and some inconsistencies could not be resolved within the timeframe of this study. The tables provided here should not be referenced for definitive customer counts, consumption, or savings totals. They do provide a useful basis for comparing participation rates across customer segments within a utility and statewide.

5.2 Statewide Electric & Gas Key Findings

This section describes residential then non-residential key findings for the state overall.

5.2.1 Residential Electric and Gas Key Findings

Table 5-1 lists the statewide programs for residential customers (both electric and gas) and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. The remaining programs are for the general population.

Table 5-3 presents results of the electric and gas participation analysis for some residential customer subpopulations often found to participate less in energy efficiency programs. As described in Section 5.1, where the observed participation rates are lower for one of these categories compared to others in the population, that difference indicates less access to energy efficiency. A "Yes" in the "Subpopulation barrier(s) indicated?" column indicates the subpopulations participation rate was 90% or less of the rate for the rest of the population, e.g., 18% or less as compared to a rest-of-population rate of 20%, considering only those in the sector with known values of the variable.

Limited income households¹⁰ are a critical segment in NJ, representing just over half of customers and just under half of consumption in both the gas and in the electric demographic analysis. For both electric and gas measures, the participation analysis indicated significant barriers for low-income and less substantial but still meaningful barriers for moderate-income customers. With Comfort Partners implemented across the state, sometimes supplemented by complementary programs, substantial barriers remain in low-income markets. One of the most significant barriers in low-income program implementation is the need to address underlying health, safety and structural issues – when the upfront costs of remediation and repair are too high, efficiency measures cannot be implemented. As an example, in the Green Jobs – Green New York Program, 20% of homes could not be retrofitted due to significant health and safety issues.¹¹

¹⁰ Limited income households are defined as low-income and moderate-income households, combined.

¹¹ Cluett, R., Amann, J., Ou, S. (2016). Building Better Energy Efficiency Programs for Low-Income Households, ACEEE.

Table 5-1 Programs and Barriers: Statewide Electric and Gas Residential

Org.	Program Name	Barriers					
		High upfront costs ¹²	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint ¹³	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – COOLAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential HVAC – WARMAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■	■	■ ■	■	■ ■	■ ■

■ Program type affected by barrier ■ Program type designed to mitigate barrier

Renters are a smaller but still important market, representing about a third of electric and gas customers and smaller fractions in terms of electric and gas consumption. This market typically has high barriers, with a particular barrier of split incentives. The analysis indicated high barriers do exist in New Jersey, particularly for the gas market. Split incentives could be particularly relevant for gas heat, where landlords may be unwilling to invest in expensive envelope, furnace and boiler measures in cases where they don't pay the bills.

Customers in multi-family homes are yet a smaller market, representing just under a quarter of the electric customers analyzed and a sixth of the gas customers. Despite the finding that renters frequently have lower participation rates, multi-family homes were not identified as having lower participation rates statewide or for most individual utilities. The participation analysis for this customer category did not suggest barriers for electric or gas. However, the population savings rate (ratio of participants' savings to all customers' consumption) is somewhat lower for multi-family homes compared to single family. As noted in Section 5.1.2, participation rates by multi-family homes may be somewhat over- or under-stated due to address-based matching.

The lower portion of Table 5-3 presents results for additional demographic groups with differential participation rates observed. These additional demographic findings include the following:

1. Age of head of household: Households with younger heads of household (under 30 years old) tend to have lower participation rates, but not so low as to indicate barriers are present. For both electric and gas, the participation rate increases with age of head of household until age 55 or 65.
2. Cultural groups: Cultural minorities¹⁴, one-third of the population, had about the same participation rates as non-minorities for electric but a lower rate for gas. The largest minority cultural groups,

¹² Particularly for Comfort Partners, high upfront costs include costs of health and safety measures that prevent implementation of efficiency measures,

¹³ The BPU funds a Comfort Partners program that utilities implement.

Hispanic and African-American, had low participation rates relative to non-minorities for both electric and gas.

3. Consumption level and home size: Participation rates increased with both electric and gas consumption levels, flattening off at the top quintile. Low participation at the lowest consumption levels is likely driven by fewer appliances, particularly on the gas side. Electric and gas participation rates also generally increased with square footage and number of household members. The population savings rate actually decreased with increasing consumption and size of home, suggesting there is more opportunity in high-use, larger homes.

Variables where the information was too limited for meaningful findings included heating type and LEEDs certification. In addition, home value did not have a strong relationship to participation rates.

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in any other program. Accordingly, these programs are given special attention here. ACE, ETG, NJNG, PSE&G and SJG already deliver behavioral programs. As of mid-Q4 2019, these five utilities had analyzed data for and communicated with over 1.4 million treatment customers, including close to 750,000 electric and over 1.1 million gas customers. While behavioral programs mitigate multiple barriers across a broad array of residential customers, a utility can also choose to select subpopulations for targeted outreach, e.g., NJNG had a carve out for low-income customers. Behavioral programs are a very important tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the residential customer base. Current behavioral program sizes for each utility are indicated in Table 5-2, along with the overall participation levels in non-Behavioral programs as comparison for the magnitude of these programs.

Table 5-2 Behavioral Program Treatment Groups and Other Program Participation

Utility	Behavioral Program Treatment Group			Non-Behavioral Program Participation	
	Total	Electric	Gas	Electric	Gas
ACE	322,757	322,757		79,895	
ETG	186,000		186,000		16,579
NJNG	277,775		277,775		43,570
PSE&G	422,517	422,517	422,517	175,039	130,683
SJG	215,599		215,599		41,859
Total	1,424,648	745,274	1,101,891	254,934	232,691

¹⁴ Cultural minorities are defined according to eligibility for New Jersey minority business enterprises. The categories used from the metrics tables are: "South Asian, African American, Central and Southwest Asian, Far Eastern, Hispanic, Native American, Pacific Islander".

5.2.2 Residential Electric and Gas Recommendations

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. For moderate-income customers, consider expanding initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches, such as the weatherization programs offered to moderate-income customers by ETG and SJG. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address split incentives for renters, offer free installation of low cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
6. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
7. Further explore lower participation rates by younger households and consider targeted initiatives and marketing.
8. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric and gas consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

Table 5-3 Barriers to Participation: Statewide Residential Electric

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ¹⁵	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	35%	6.9%	11.2%	Yes
Moderate income (250% to 400% FPL)		19%	8.7%	11.2%	Yes
Multi-family	Split incentives, complex buying process	23%	11.9%	8.4%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	32%	6.2%	10.5%	Yes
Renters	Split incentives	30%	8.4%	9.6%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	8%	5.8%	9.5%	Yes
Hispanic households	Non-minority culture groups	14%	6.4%	9.5%	Yes
Younger households	Head of household 30 to 65	7%	9.2%	9.5%	No
Lower consuming households	2nd to 5th quintiles	20%	5.9%	8.7%	Yes
Smaller homes	1500+ sq ft	37%	9.4%	11.6%	Yes

¹⁵Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-4 Barriers to Participation: Statewide Residential Gas

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ¹⁶	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	31%	5.9%	10.6%	Yes
Moderate income (250% to 400% FPL)		20%	7.9%	10.6%	Yes
Multi-family	Split incentives, complex buying process	13%	10.4%	8.3%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	29%	5.1%	10.3%	Yes
Renters	Split incentives	21%	7.3%	8.9%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	7%	5.1%	8.8%	Yes
Hispanic households	Non-minority culture groups	13%	6.2%	8.8%	Yes
Younger households	Head of household 30 to 65	6%	8.6%	9.1%	No
Lower consuming households	2nd to 5th quintiles	20%	6.2%	8.1%	Yes
Smaller homes	1500+ sq ft	33%	7.6%	11.0%	Yes

¹⁶Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

5.2.3 Non-Residential Electric and Gas Key Findings

Table 5-5 lists the statewide programs for non-residential electric and gas customers, and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government Energy Audit program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-5 Programs and Barriers: Statewide Electric and Gas Commercial and Industrial

Organization	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureaucratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-6 presents key results of the commercial electric and gas participation analysis by customer category. The analysis identifies non-residential customer categories shown to participate less in energy efficiency programs, thus indicating less access to energy efficiency. For commercial, the customer categories that participated less in energy efficiency programs were small business, customers with limited English and the institutional NAICS classification Health Care and Social Assistance. In the commercial sector, institutional customers overall (Health Care, Education and Public Administration) were not found to have relatively low participation rates. Education and Public Administration had relatively high rates, particularly Education.

Table 5-7 presents the key results of the industrial electric and gas participation analysis by customer category. For industrial, the customer categories that participated less in energy efficiency programs were small business, customers with limited English, the institutional NAICS classification Health Care and Social Assistance and institutional customers overall. The industrial overall institutional customer result differed from that in the commercial sector, as there was only a small percentage of industrial Education customers and industrial Public Administration rates were closer to the rates for the rest of the industrial population. The analysis did not reveal a split incentive barrier for commercial or industrial multi-tenant buildings, as customers in multi-tenant structures participated at a higher rate than those in single-tenant buildings.

Table 5-6 Barriers to Participation: Statewide Electric and Gas Commercial

Subpopulation				Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Util. Type	Relative size ¹⁷	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Elec	97%	3.4%	13.4%	Yes
		Gas	90%	3.2%	8.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	Elec	31%	1.7%	3.1%	Yes
		Gas	29%	1.2%	2.5%	Yes
Multi-tenant	Split incentives, complex buying process	Elec	72%	5.5%	4.2%	No
		Gas	71%	4.5%	3.4%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	Elec	25%	5.2%	4.3%	No
Health care		Gas	25%	4.1%	3.6%	No
		Elec	11%	3.6%	4.3%	Yes
		Gas	12%	2.7%	3.6%	Yes

¹⁷Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-7 Barriers to Participation: Statewide Electric and Gas Industrial

Subpopulation				Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Util. Type	Relative size ¹⁸	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Elec	87%	3.9%	11.8%	Yes
		Gas	84%	3.9%	7.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	Elec	38%	2.1%	4.8%	Yes
		Gas	39%	2.6%	4.6%	Yes
Multi-tenant	Split incentives, complex buying process	Elec	63%	7.5%	5.7%	No
		Gas	60%	5.9%	4.6%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	Elec	20%	5.1%	5.9%	Yes
		Gas	21%	3.9%	4.6%	Yes
Health care		Elec	7%	2.7%	5.9%	Yes
		Gas	8%	2.1%	4.6%	Yes

¹⁸Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-8 presents all 2-digit NAICS classifications that have relatively low participation rates and represent 2% or more of Unique IDs with known NAICS. Red indicates customer categories 20% or more below average participation rates for the sector while yellow indicates rates between 10% and 20% lower than average and green the same or higher participation rate. Commercial versus industrial classification is based on the utility's sector assignment, not the NAICS category.

Construction, Health Care & Social Assistance, and Accommodation and Food Services have lower participation rates across the sectors. Other Services had low rates but for industrial gas and Transportation & Warehousing had slightly lower rates across all sectors. Wholesale Trade had mixed results. Specific to industrial, the analysis indicated barriers for Waste Management & Remediation Services (gas only), Finance and Insurance, and Real Estate Rental & Leasing. However, the Unique ID counts in the industrial sector are many fewer than in the commercial sector, particularly for gas and outside of manufacturing; as a result, industrial participation rates can vary a lot based on a small number of customers.

Table 5-8 Participation Analysis by NAICS and Utility Commercial or Industrial Sector

2-Digit NAICS Classification	Average Participation Rate			
	Commercial Elec	Commercial Gas	Industrial Elec	Industrial Gas
Construction	3.2%	2.5%	3.7%	3.2%
Transportation & Warehousing	4.0%	3.5%	5.7%	4.4%
Wholesale Trade	3.9%	4.0%	5.7%	3.9%
Waste Mgmt & Remediation Svcs.	4.8%	5.0%	8.6%	1.0%
Finance and Insurance	4.5%	3.4%	3.4%	2.3%
Real Estate Rental & Leasing	8.4%	7.2%	4.6%	2.4%
Health Care & Social Assistance	3.6%	2.7%	2.7%	2.1%
Accommodation & Food Services	3.7%	2.8%	3.3%	3.1%
Other Services	3.5%	2.8%	4.0%	4.5%
Total Population¹⁹	4.6%	3.7%	5.8%	4.5%

For statewide electric and statewide gas, respectively, Table 5-9 and Table 5-10 present participation analysis for additional customer categories. The additional demographic/firmographic findings include the following:

- Minority-owned business are significant in NJ, representing 28% of businesses with 500 employees or less, which in turn represent 99.6% of all New Jersey businesses.²⁰ Minority-owned businesses had somewhat lower participation rates for commercial electric but not commercial gas, with greater differences observed in industrial electric and gas.²¹
- For commercial and industrial, participation rates steadily increase with electric and gas consumption and with increasing demand. Participation rates are significantly higher in the top tiers of electric consumption and demand. Population savings rates decline substantially with increasing electric consumption and demand for commercial and industrial but are flat across gas consumption levels.
- Electric and gas commercial and industrial participation rates steadily increase with square footage of buildings. The largest one percent of buildings (over 100,000 square feet) have participation rates of:
 - 16.3% versus the overall average of 3.7% for commercial electric,

¹⁹ Represents the average rate across customers with known NAICS codes.

²⁰ <https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-NJ.pdf>.

²¹ The results were very similar for minority- and women-owned businesses combined and minority-owned businesses alone.

- 16.2% versus 5.0% for industrial electric,
- 13.2% versus 3.4% for commercial gas, and
- 10.2% versus 4.2% for industrial gas.

Square footage and population savings rates did not exhibit a consistent relationship.

- Commercial and industrial electric and gas participation rates also generally increase with number of employees. For commercial electric, population savings rates also increase with number of employees. The population savings rate trend is less clear for gas and industrial.
- Commercial and industrial electric and gas participation rates generally increase with the age of a business. For commercial electric and gas, population savings rates also increase with age of business. These trends suggest more established customers have more time and/or money to devote to EE projects.
- Commercial and industrial electric and gas customers operating in branches have higher participation rates than single location customers. Multiple location organizations may be learning how to easily repeat the energy efficiency buying process and/or implementers may be leveraging the ability to complete multiple projects with one outreach contact.

Table 5-9 Additional Participation Analysis: Statewide Electric

Subpopulation	Subpopulation Relative Size ²²	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	57%	4.4%	4.7%	N
Minority/women-owned	43%	2.5%	2.9%	Y
Minority-owned	41%	2.4%	2.9%	Y
Smaller floorspace facilities (<5,000 sq ft)	80%	3.7%	8.2%	Y
Fewer employees (<20)	91%	4.0%	10.0%	Y
Single-location customers	92%	4.3%	7.6%	Y
Industrial				
Newer business (later than 2010)	51%	5.7%	5.8%	N
Minority/women-owned	36%	3.2%	4.6%	Y
Minority-owned	33%	3.1%	4.6%	Y
Smaller floorspace facilities (<5,000 sq ft)	71%	4.1%	10.0%	Y
Fewer employees (<20)	83%	4.9%	10.6%	Y
Single-location customers	94%	5.6%	8.6%	Y

²²Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).


Table 5-10 Additional Participation Analysis: Statewide Gas

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	56%	3.4%	4.1%	Y
Minority/women-owned	42%	2.5%	2.4%	N
Minority-owned	39%	2.4%	2.4%	N
Smaller floorspace facilities (<5,000 sq ft)	79%	2.8%	7.2%	Y
Fewer employees (<20)	90%	3.2%	8.3%	Y
Single-location customers	91%	3.5%	5.8%	Y
Industrial				
Newer business (later than 2010)	52%	4.3%	4.7%	N
Minority/women-owned	39%	2.8%	4.6%	Y
Minority-owned	37%	3.0%	4.6%	Y
Smaller floorspace facilities (<5,000 sq ft)	72%	3.4%	7.3%	Y
Fewer employees (<20)	84%	3.9%	7.0%	Y
Single-location customers	94%	4.4%	6.1%	Y

5.2.4 Non-Residential Electric and Gas Recommendations

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4.2. Recommendations for non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for businesses with non-English primary language, explore providing more outreach materials in Spanish and other languages. Even businesses with bilingual management that primarily use English might be more receptive to outreach in a native non-English language.
3. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
4. To mitigate lack of information for newer commercial business owners, particularly for industrial gas customers where barriers were indicated to be highest, and for small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small and starting companies.
5. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.

- 
6. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
 7. To simplify the buying process for small business, and to address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
 8. Create measure buckets targeted to the different NAICs classifications with high barriers, including groceries/food services, lodging, health care and construction as well as, specific to the industrial sector, waste management/remediation, financial/insurance and real estate leasing. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process. Hospital programs provides one example of effective use of segment-targeted measures, delivery and messaging.
 9. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
 10. High-consuming electric commercial and industrial customers have been active participants but have relatively low population savings for electric measures.²³ Further analysis should be conducted to determine if and how electricity measures could be expanded for high consumption participants.
 11. High-consuming gas commercial customers also generally had high participation rates and high population savings rates. High-consuming industrial gas customers had low participation and population savings rates. Further analysis should be conducted to assess potential for added industrial gas savings.

²³ This trend was not observed for non-residential gas customers.

5.3 Statewide Electric Metrics

5.3.1 Residential Metrics

All statewide residential electric metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%. For age of home, the discrepancy between the public data and the primary data source was too large to have comfort in drawing conclusions about the actual age distribution or the participation rate trends by age of home.

Table 5-11 Home Heating Fuel, Statewide Electric Residential²⁴

Heating Fuel	ACS Distribution
Utility gas	74.9%
Bottled, tank, or LP gas	1.9%
Electricity	12.4%
Fuel oil, kerosene, etc.	9.3%
Coal or coke	0.1%
Wood	0.5%
Solar energy	0.1%
Other fuel	0.4%
No fuel used	0.4%
Total	100%

²⁴ The table lists the percent of households in block groups that receive electricity from the utilities in this report. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-12 Square Footage of Home, Statewide Electric Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<500	1,969	0.1%	9,112	0.0%	209	10.6%	20	0.2%
500 to 999	91,702	2.2%	550,857	2.0%	9,203	10.0%	1,334	0.2%
1,000 to 1,499	315,399	7.7%	2,269,766	8.2%	29,199	9.3%	6,233	0.3%
1,500 to 1,999	295,972	7.2%	2,472,279	8.9%	31,800	10.7%	6,764	0.3%
2,000 to 2,499	181,931	4.4%	1,777,690	6.4%	22,096	12.2%	5,202	0.3%
2,500 to 2,999	98,487	2.4%	1,116,473	4.0%	12,723	12.9%	2,935	0.3%
3,000 to 3,999	77,959	1.9%	1,052,604	3.8%	9,915	12.7%	2,362	0.2%
>=4,000	37,598	0.9%	708,767	2.6%	3,726	9.9%	956	0.1%
Unknown	3,015,130	73.3%	17,776,848	64.1%	217,377	7.2%	41,559	0.2%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-13 Type of Home, Statewide Electric Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	2,370,129	57.6%	19,696,797	71.0%	199,336	8.4%	51,084	0.3%
Multifamily	719,655	17.5%	2,867,964	10.3%	85,392	11.9%	6,658	0.2%
Mobile home	2,815	0.1%	18,683	0.1%	855	30.4%	30	0.2%
Group home	7,626	0.2%	24,767	0.1%	642	8.4%	111	0.5%
Unknown	1,015,922	24.7%	5,126,184	18.5%	50,023	4.9%	9,482	0.2%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-14 Household Income Status, Statewide Electric Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	1,074,382	26.1%	6,334,679	22.8%	74,479	6.9%	17,440	0.3%
251 - 400% FPL	597,185	14.5%	4,213,322	15.2%	51,766	8.7%	10,417	0.3%
>400% FPL	1,428,747	34.7%	12,060,850	43.5%	159,981	11.2%	30,026	0.3%
Unknown	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-15 Household Cultural Group, Statewide Electric Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
African American	241,164	5.9%	1,226,755	4.4%	14,001	5.8%	4,080	0.3%
Central and Southwest Asian	6,630	0.2%	52,334	0.2%	635	9.6%	107	0.2%
Eastern European	169,382	4.1%	1,282,611	4.6%	15,484	9.1%	3,273	0.3%
Far Eastern	110,292	2.7%	646,488	2.3%	14,531	13.2%	2,050	0.3%
Hispanic	410,395	10.0%	2,481,965	9.0%	26,280	6.4%	5,770	0.2%
Middle Eastern	49,995	1.2%	322,976	1.2%	4,710	9.4%	935	0.3%
Jewish	124,084	3.0%	1,098,952	4.0%	14,105	11.4%	2,470	0.2%
Mediterranean	396,258	9.6%	3,236,834	11.7%	36,430	9.2%	7,658	0.2%
Native American	954	0.0%	6,883	0.0%	89	9.3%	21	0.3%
Pacific Islander	13,952	0.3%	91,771	0.3%	1,193	8.6%	201	0.2%
Scandinavian	38,074	0.9%	299,779	1.1%	3,223	8.5%	772	0.3%
South Asian	101,064	2.5%	587,971	2.1%	15,854	15.7%	2,278	0.4%
Western European	1,251,808	30.4%	9,751,665	35.2%	119,128	9.5%	24,376	0.3%
Miscellaneous other	219	0.0%	1,353	0.0%	29	13.2%	3	0.3%
Unknown	1,201,876	29.2%	6,646,057	24.0%	70,556	5.9%	13,372	0.2%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-16 Head of Household Age, Statewide Electric Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	76,928	1.9%	367,336	1.3%	6,228	8.1%	972	0.3%
25 to 29	153,989	3.7%	740,371	2.7%	15,115	9.8%	2,211	0.3%
30 to 34	227,058	5.5%	1,220,959	4.4%	22,229	9.8%	3,659	0.3%
35 to 44	505,985	12.3%	3,380,508	12.2%	51,977	10.3%	9,500	0.3%
45 to 54	586,036	14.2%	4,772,572	17.2%	54,283	9.3%	11,102	0.2%
55 to 64	648,918	15.8%	5,279,410	19.0%	58,289	9.0%	12,610	0.2%
65 and over	901,400	21.9%	6,847,695	24.7%	78,105	8.7%	17,829	0.3%
Unknown	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-17 LEED Certification, Statewide Electric Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not Certified	4,116,041	100.0%	27,733,771	100.0%	336,220	8.2%	67,340	0.2%
Masked Categories	106	0.0%	623	0.0%	28	26.4%	25	4.0%
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-18 Electric Consumption, Statewide Electric Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	820,142	19.9%	633,331	2.3%	48,252	5.9%	6,313	1.0%
Second Quintile (20-39)	819,940	19.9%	2,541,467	9.2%	60,639	7.4%	10,123	0.4%
Third Quintile (40-59)	820,322	19.9%	4,493,433	16.2%	70,514	8.6%	13,645	0.3%
Fourth Quintile (60-79)	820,338	19.9%	6,929,632	25.0%	77,316	9.4%	16,795	0.2%
Fifth Quintile (80-100)	820,244	19.9%	13,136,531	47.4%	76,550	9.3%	19,916	0.2%
Unknown	15,161	0.4%	0	0.0%	2,977	19.6%	573	Inf
Total	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-19 Primary Language at Home, Statewide Electric Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	93.0%	469,806	11.4%	3,060,198	11.0%	49,408	10.5%	8,806	0.3%
Limited English	7.0%	220,951	5.4%	1,101,495	4.0%	13,702	6.2%	2,480	0.2%
Unknown	0.0%	3,425,390	83.2%	23,572,702	85.0%	273,138	8.0%	56,080	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-20 Household Income, Statewide Electric Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	12.4%	446,404	10.9%	2,224,671	8.0%	26,801	6.0%	6,632	0.3%
\$20,000 to \$29,999	7.6%	269,078	6.5%	1,455,923	5.3%	18,809	7.0%	3,746	0.3%
\$30,000 to \$39,999	7.0%	248,807	6.0%	1,415,376	5.1%	19,045	7.7%	3,880	0.3%
\$40,000 to \$49,999	6.5%	216,019	5.3%	1,304,897	4.7%	16,582	7.7%	3,234	0.3%
\$50,000 to \$59,999	6.3%	208,356	5.1%	1,298,404	4.7%	16,161	7.8%	3,402	0.3%
\$60,000 to \$99,999	21.0%	656,912	16.0%	4,553,167	16.4%	59,108	9.0%	11,871	0.3%
\$100,000 to \$124,999	10.0%	289,440	7.0%	2,294,430	8.3%	30,052	10.4%	6,258	0.3%
\$125,000 to \$149,999	7.4%	208,210	5.1%	1,844,976	6.7%	23,270	11.2%	4,712	0.3%
\$150,000 to \$199,999	9.5%	253,031	6.2%	2,417,133	8.7%	32,727	12.9%	6,437	0.3%
>=\$200,000	12.4%	304,057	7.4%	3,799,873	13.7%	43,671	14.4%	7,712	0.2%
Unknown	0.0%	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-21 Home Built, Statewide Electric Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1939 or earlier	18.3%	315,636	7.7%	2,496,229	9.0%	19,951	6.3%	4,808	0.2%
1940-1949	7.5%	149,637	3.6%	1,138,259	4.1%	10,070	6.7%	2,441	0.2%
1950-1959	15.2%	416,161	10.1%	3,370,819	12.2%	31,216	7.5%	7,358	0.2%
1960-1969	13.5%	351,939	8.6%	3,089,973	11.1%	31,104	8.8%	7,520	0.2%
1970-1979	12.8%	291,614	7.1%	2,802,048	10.1%	31,173	10.7%	8,040	0.3%
1980-1989	11.9%	309,990	7.5%	2,651,738	9.6%	34,953	11.3%	7,507	0.3%
1990-1999	9.5%	187,266	4.6%	1,742,366	6.3%	24,097	12.9%	5,459	0.3%
2000-2009	9.3%	116,567	2.8%	1,086,444	3.9%	20,988	18.0%	3,034	0.3%
2010-2013	1.4%	10,996	0.3%	105,560	0.4%	1,589	14.5%	107	0.1%
2014 or later	0.6%	950,508	23.1%	4,125,414	14.9%	81,085	8.5%	11,609	0.3%
Unknown	0.0%	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-22 Number of Household Members, Statewide Electric Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
0	0.0%	19,369	0.5%	88,849	0.3%	1,776	9.2%	235	0.3%
1	25.7%	1,236,449	30.0%	6,528,444	23.5%	107,864	8.7%	17,754	0.3%
2	30.7%	611,411	14.9%	4,366,390	15.7%	55,493	9.1%	11,514	0.3%
3	17.7%	374,901	9.1%	3,029,804	10.9%	34,235	9.1%	7,434	0.3%
4	15.6%	275,832	6.7%	2,475,091	8.9%	26,078	9.5%	6,085	0.3%
5	6.6%	216,650	5.3%	2,122,255	7.7%	21,573	10.0%	5,283	0.3%
6	2.2%	168,412	4.1%	1,773,186	6.4%	17,567	10.4%	4,272	0.2%
7	1.4%	121,199	2.9%	1,344,597	4.9%	13,002	10.7%	3,192	0.2%
8	0.0%	76,091	1.9%	880,235	3.2%	8,638	11.4%	2,115	0.2%
Unknown	0.0%	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-23 Home Ownership Status, Statewide Electric Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	64.2%	2,161,843	52.5%	18,593,027	67.0%	207,580	9.6%	47,950	0.3%
Renter occupied	35.8%	938,471	22.8%	4,015,823	14.5%	78,646	8.4%	9,934	0.3%
Unknown	0.0%	1,015,833	24.7%	5,125,544	18.5%	50,022	4.9%	9,482	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

Table 5-24 Home Value, Statewide Electric Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<\$25,000	2.0%	2,174	0.1%	12,526	0.1%	261	12.0%	40	0.3%
\$25,000 to \$49,999	1.0%	12,202	0.3%	74,553	0.3%	710	5.8%	286	0.4%
\$50,000 to \$99,999	3.1%	78,180	1.9%	489,554	1.8%	4,465	5.7%	1,732	0.4%
\$100,000 to \$124,999	2.7%	57,083	1.4%	370,964	1.3%	4,155	7.3%	1,127	0.3%
\$125,000 to \$149,999	3.1%	82,317	2.0%	547,016	2.0%	6,507	7.9%	1,684	0.3%
\$150,000 to \$174,999	5.3%	107,637	2.6%	739,695	2.7%	9,272	8.6%	2,376	0.3%
\$175,000 to \$199,999	4.8%	126,867	3.1%	879,597	3.2%	11,609	9.2%	2,748	0.3%
\$200,000 to \$249,999	11.3%	290,309	7.1%	2,031,212	7.3%	26,211	9.0%	5,957	0.3%
\$250,000 to \$299,999	12.2%	310,055	7.5%	2,242,191	8.1%	27,255	8.8%	6,307	0.3%
\$300,000 to \$399,999	20.7%	537,490	13.1%	4,046,403	14.6%	46,677	8.7%	10,754	0.3%
\$400,000 to \$499,999	12.4%	333,774	8.1%	2,783,215	10.0%	33,338	10.0%	7,048	0.3%
\$500,000 to \$999,999	18.1%	474,325	11.5%	4,783,498	17.3%	53,482	11.3%	10,902	0.2%
>=\$1,000,000	3.3%	88,015	2.1%	1,446,358	5.2%	8,409	9.6%	1,377	0.1%
Unknown	0.0%	1,615,719	39.3%	7,287,612	26.3%	103,897	6.4%	15,025	0.2%
Total	100.0%	4,116,147	100.0%	27,734,394	100.0%	336,248	8.2%	67,365	0.2%

5.3.2 Commercial Metrics

This section provides the statewide commercial electric participation analysis. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

The C&I primary space heating fuel data comes from CBECS, which reports data at a regional level. The distribution will be the same for all utilities as for the statewide level reported in here. Therefore, the table appears only in the statewide section.

Table 5-25 Primary Space Heating Fuel, Statewide Electric Commercial

Primary Space Heating Fuel	Percent of C&I Buildings
Electricity	20%
Natural gas	51%
Fuel oil	20%
District heat	2%
Propane	7%

Table 5-26 Primary Language at Business, Statewide Electric Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	12,797	2.5%	508,403	1.4%	396	3.1%	7,449	1.5%
Limited English	5,741	1.1%	153,401	0.4%	96	1.7%	825	0.5%
Unknown	497,871	96.4%	35,478,691	98.2%	18,675	3.8%	633,895	1.8%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-27 Business Opened, Statewide Electric Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980-1989	30,997	6.0%	2,446,209	6.8%	1,863	6.0%	60,812	2.5%
1990-1999	30,529	5.9%	2,179,105	6.0%	1,197	3.9%	42,105	1.9%
2000-2009	64,223	12.4%	5,701,408	15.8%	2,905	4.5%	109,431	1.9%
2010-2013	65,605	12.7%	4,892,932	13.5%	2,587	3.9%	79,279	1.6%
2014 or later	98,124	19.0%	9,230,286	25.5%	4,646	4.7%	166,171	1.8%
Unknown	226,931	43.9%	11,690,555	32.4%	5,969	2.6%	184,371	1.6%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-28 Number of Employees, Statewide Electric Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	149,809	29.0%	8,866,050	24.5%	5,282	3.5%	153,229	1.7%
5 to 9	61,892	12.0%	4,803,556	13.3%	2,774	4.5%	80,078	1.7%
10 to 19	26,999	5.2%	2,871,562	8.0%	1,472	5.5%	49,489	1.7%
20 to 49	15,492	3.0%	2,665,014	7.4%	1,231	8.0%	53,730	2.0%
50 to 99	5,259	1.0%	1,516,673	4.2%	772	14.7%	36,518	2.4%
100 to 249	2,923	0.6%	1,352,231	3.7%	375	12.8%	40,092	3.0%
250 to 499	386	0.1%	254,429	0.7%	26	6.7%	4,490	1.8%
500 to 999	107	0.0%	167,170	0.5%	18	16.8%	6,419	3.8%
1,000 to 4,999	36	0.0%	84,420	0.2%	7	19.4%	2,992	3.5%
Unknown	253,506	49.1%	13,559,391	37.5%	7,210	2.8%	215,130	1.6%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-29 Business Ownership Status, Statewide Electric Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	266,518	51.6%	19,388,113	53.7%	11,444	4.3%	338,958	1.8%
Branch	22,112	4.3%	4,573,884	12.7%	1,693	7.7%	108,671	2.4%
Headquarters	484	0.1%	200,428	0.6%	31	6.4%	3,188	1.6%
Subsidiary	364	0.1%	287,516	0.8%	30	8.2%	6,981	2.4%
Unknown	226,931	43.9%	11,690,555	32.4%	5,969	2.6%	184,371	1.6%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-30 LEED Certification, Statewide Electric Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Platinum	18	0.0%	26,009	0.1%	5	27.8%	486	1.9%
Gold	34	0.0%	121,331	0.3%	7	20.6%	402	0.3%
Silver	67	0.0%	118,631	0.3%	11	16.4%	988	0.8%
Certified	55	0.0%	78,361	0.2%	8	14.6%	4,105	5.2%
Incomplete	112	0.0%	199,448	0.6%	14	12.5%	1,298	0.7%
Not Certified	516,123	99.9%	35,596,715	98.5%	19,122	3.7%	634,890	1.8%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-31 Electric Consumption, Statewide Electric Commercial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	102,610	19.9%	45,231	0.1%	2,490	2.4%	13,400	29.6%
Second Quintile (20-39)	102,639	19.9%	277,776	0.8%	2,745	2.7%	14,071	5.1%
Third Quintile (40-59)	102,624	19.9%	755,527	2.1%	2,712	2.6%	16,358	2.2%
Fourth Quintile (60-79)	102,626	19.9%	2,098,673	5.8%	3,150	3.1%	45,288	2.2%
Fifth Quintile (80-100)	102,625	19.9%	32,963,288	91.2%	7,563	7.4%	495,926	1.5%
Unknown	3,285	0.6%	0	0.0%	507	15.4%	57,126	Inf
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-32 Electric Demand, Statewide Electric Commercial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	394,569	76.4%	8,463,350	23.4%	12,334	3.1%	156,254	1.9%
101-200 kw	21,911	4.2%	4,555,960	12.6%	1,993	9.1%	104,208	2.3%
201-399 kw	9,533	1.9%	4,783,604	13.2%	1,088	11.4%	88,956	1.9%
>=400 kw	4,349	0.8%	17,263,588	47.8%	768	17.7%	205,407	1.2%
Unknown	86,047	16.7%	1,073,994	3.0%	2,984	3.5%	87,344	8.1%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-33 Woman/Minority Owned Status, Statewide Electric Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	1,813	0.4%	91,176	0.3%	59	3.3%	1,464	1.6%
Minority business owner	29,666	5.7%	963,831	2.7%	719	2.4%	12,949	1.3%
Woman-minority business owner	415	0.1%	28,971	0.1%	14	3.4%	629	2.2%
Not woman or minority business owner	42,072	8.2%	1,711,676	4.7%	1,236	2.9%	23,240	1.4%
Unknown	442,443	85.7%	33,344,841	92.3%	17,139	3.9%	603,887	1.8%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-34 Number of Tenants in Structure, Statewide Electric Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	47,614	9.2%	4,710,166	13.0%	1,988	4.2%	83,514	1.8%
2 to 5	18.6%	66,090	12.8%	6,572,164	18.2%	3,481	5.3%	128,664	2.0%
6 to 10	2.4%	19,217	3.7%	2,235,414	6.2%	1,020	5.3%	34,486	1.5%
11 to 20	1.0%	16,462	3.2%	1,924,212	5.3%	879	5.3%	41,941	2.2%
>20	0.4%	17,772	3.4%	2,766,072	7.7%	1,249	7.0%	62,636	2.3%
Unknown	0.0%	349,254	67.6%	17,932,467	49.6%	10,550	3.0%	290,927	1.6%
Total²⁵	97.0%	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

²⁵ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-35 Square Footage of Business, Statewide Electric Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<1,499	107,902	20.9%	4,135,182	11.4%	3,374	3.1%	78,907	1.9%
1,500-2,499	68,692	13.3%	4,720,829	13.1%	2,587	3.8%	68,667	1.5%
2,500-4,999	48,647	9.4%	4,536,216	12.6%	2,387	4.9%	63,909	1.4%
5,000-9,999	20,428	4.0%	2,096,406	5.8%	1,366	6.7%	48,679	2.3%
10,000-19,999	12,925	2.5%	1,815,092	5.0%	956	7.4%	29,336	1.6%
20,000-39,999	9,890	1.9%	1,725,739	4.8%	759	7.7%	35,662	2.1%
40,000-99,999	8,448	1.6%	2,034,769	5.6%	818	9.7%	43,412	2.1%
>=100,000	4,168	0.8%	2,098,170	5.8%	678	16.3%	57,107	2.7%
Unknown	235,309	45.6%	12,978,092	35.9%	6,242	2.7%	216,489	1.7%
Total	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

Table 5-36 Two-digit NAICS Classification, Statewide Electric Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag & Forestry	0.3%	1,003	0.2%	54,651	0.2%	28	2.8%	264	0.5%
Mining	0.0%	136	0.0%	4,228	0.0%	3	2.2%	13	0.3%
Utilities	0.1%	251	0.1%	125,142	0.4%	6	2.4%	225	0.2%
Construction	10.1%	15,795	3.1%	1,138,447	3.2%	506	3.2%	10,046	0.9%
Manufacturing	0.0%	9,541	1.9%	1,244,905	3.4%	392	4.1%	18,712	1.5%
Wholesale Trade	3.7%	9,058	1.8%	1,027,383	2.8%	351	3.9%	21,018	2.1%
Retail Trade	0.0%	42,078	8.2%	3,182,443	8.8%	2,066	4.9%	81,585	2.6%
Transportation & Warehousing	0.0%	7,598	1.5%	480,868	1.3%	302	4.0%	11,861	2.5%
Information	1.9%	4,755	0.9%	804,820	2.2%	227	4.8%	15,953	2.0%
Finance and Insurance	4.6%	9,568	1.9%	1,415,028	3.9%	432	4.5%	31,618	2.2%
Real Estate	14.7%	14,340	2.8%	1,016,802	2.8%	1,200	8.4%	16,625	1.6%
Prof., Sci., & Tech.	19.2%	19,768	3.8%	1,708,455	4.7%	794	4.0%	18,283	1.1%
Management of Companies and Enterprises	0.0%	670	0.1%	52,649	0.2%	19	2.8%	387	0.7%
Administrative, Support, Waste Management and Remediation Services	7.8%	8,091	1.6%	641,989	1.8%	386	4.8%	10,292	1.6%
Educational Services	3.8%	8,385	1.6%	1,364,025	3.8%	1,012	12.1%	46,268	3.4%
Health Care and Social Assistance	10.7%	33,139	6.4%	3,570,073	9.9%	1,198	3.6%	70,537	2.0%
Arts, Ent. & Rec.	5.6%	6,170	1.2%	468,099	1.3%	283	4.6%	12,407	2.7%
Accommodation and Food Services	4.2%	28,692	5.6%	2,253,973	6.2%	1,052	3.7%	24,619	1.1%
Other Services	13.3%	38,422	7.4%	1,385,685	3.8%	1,335	3.5%	29,766	2.2%
Public Administration	0.0%	32,018	6.2%	2,510,275	7.0%	1,606	5.0%	37,318	1.5%
Unknown	0.0%	226,931	43.9%	11,690,555	32.4%	5,969	2.6%	184,371	1.6%
Total	100.0%	516,409	100.0%	36,140,495	100.0%	19,167	3.7%	642,169	1.8%

5.3.3 Industrial Metrics

This section provides statewide industrial electric participation analysis. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-37 Electric Consumption, Statewide Electric

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	2,387	18.9%	2,209	0.0%	60	2.5%	3,839	HIGH
Second Quintile (20-39)	2,387	18.9%	14,705	0.2%	61	2.6%	1,259	8.6%
Third Quintile (40-59)	2,387	18.9%	46,342	0.5%	72	3.0%	1,194	2.6%
Fourth Quintile (60-79)	2,387	18.9%	156,370	1.8%	125	5.2%	5,326	3.4%
Fifth Quintile (80-100)	2,388	18.9%	8,416,421	97.5%	261	10.9%	59,300	0.7%
Unknown	720	5.7%	0	0.0%	57	7.9%	12,322	Inf
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-38 LEED Certification, Statewide Electric

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not Certified	12,637	99.9%	8,432,343	97.6%	633	5.0%	81,860	1.0%
Masked Categories	19	0.2%	203,704	2.4%	3	15.8%	1,378	0.7%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-39 Square Footage of Business, Statewide Electric Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	2,709	21.4%	608,543	7.1%	75	2.8%	3,029	0.5%
1,500 to 2,499	1,960	15.5%	607,256	7.0%	93	4.7%	11,031	1.8%
2,500 to 4,999	1,397	11.0%	632,676	7.3%	78	5.6%	13,269	2.1%
5,000 to 9,999	759	6.0%	357,595	4.1%	69	9.1%	2,563	0.7%
10,000 to 19,999	521	4.1%	358,327	4.2%	44	8.5%	2,184	0.6%
20,000 to 39,999	523	4.1%	523,976	6.1%	50	9.6%	4,406	0.8%
40,000 to 99,999	461	3.6%	667,786	7.7%	47	10.2%	6,676	1.0%
100,000 or more	271	2.1%	2,396,083	27.8%	44	16.2%	7,616	0.3%
Unknown	4,055	32.0%	2,483,805	28.8%	136	3.4%	32,465	1.3%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-40 Two-digit NAICS Classification, Statewide Electric Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag & Forestry	0.3%	24	0.1%	12,694	0.1%	2	8.3%	260	2.1%
Utilities	0.1%	35	0.3%	62,832	0.7%	4	11.4%	290	0.5%
Construction	10.1%	625	4.9%	361,778	4.2%	23	3.7%	5,724	1.6%
Manufacturing	0.0%	1,387	11.0%	2,904,739	33.6%	111	8.0%	10,057	0.4%
Wholesale Trade	3.7%	751	5.9%	307,737	3.6%	43	5.7%	5,238	1.7%
Retail Trade	0.0%	1,083	8.6%	430,330	5.0%	76	7.0%	4,714	1.1%
Transportation and Warehousing	0.0%	298	2.4%	105,056	1.2%	17	5.7%	4,448	4.2%
Information	1.9%	88	0.7%	18,835	0.2%	3	3.4%	399	2.1%
Finance and Insurance	4.6%	178	1.4%	146,959	1.7%	6	3.4%	7,714	5.3%
Real Estate	14.7%	302	2.4%	163,473	1.9%	14	4.6%	1,038	0.6%
Prof., Sci., & Tech.	19.2%	678	5.4%	170,515	2.0%	40	5.9%	2,412	1.4%
Management of Companies and Enterprises	0.0%	36	0.3%	38,693	0.5%	4	11.1%	148	0.4%
Admin, Support, & Waste Svcs.	7.8%	279	2.2%	52,254	0.6%	24	8.6%	741	1.4%
Educational Services	3.8%	128	1.0%	36,375	0.4%	15	11.7%	524	1.4%
Health Care and Social Assistance	10.7%	601	4.8%	259,094	3.0%	16	2.7%	1,164	0.5%
Arts, Ent. & Rec.	5.6%	127	1.0%	15,969	0.2%	6	4.7%	722	4.5%
Accommodation and Food Services	4.2%	330	2.6%	159,211	1.8%	11	3.3%	643	0.4%
Other Services	13.3%	782	6.2%	74,039	0.9%	31	4.0%	1,411	1.9%
Public Administration	0.0%	1,004	7.9%	881,774	10.2%	57	5.7%	3,499	0.4%
Unknown	0.0%	3,920	31.0%	2,433,690	28.2%	133	3.4%	32,092	1.3%
Total	100.0%	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-41 Number of Employees, Statewide Electric Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	3,571	28.2%	887,154	10.3%	150	4.2%	13,987	1.6%
5 to 9	1,900	15.0%	756,360	8.8%	103	5.4%	11,856	1.6%
10 to 19	1,049	8.3%	673,479	7.8%	64	6.1%	3,159	0.5%
20 to 49	782	6.2%	523,244	6.1%	77	9.9%	5,444	1.0%
50 to 99	300	2.4%	259,055	3.0%	33	11.0%	6,668	2.6%
100 to 249	184	1.5%	703,538	8.2%	18	9.8%	2,942	0.4%
250 to 499	41	0.3%	1,893,973	21.9%	10	24.4%	2,029	0.1%
500+	18	0.1%	147,335	1.7%	6	33.3%	2,024	1.4%
Unknown	4,811	38.0%	2,791,909	32.3%	175	3.6%	35,129	1.3%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-42 Business Ownership Status, Statewide Electric Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	8,214	64.9%	5,163,033	59.8%	458	5.6%	43,514	0.8%
Branch	414	3.3%	798,327	9.2%	30	7.3%	3,868	0.5%
Headquarters	48	0.4%	51,512	0.6%	3	6.3%	1,047	2.0%
Subsidiary	60	0.5%	189,485	2.2%	12	20.0%	2,718	1.4%
Unknown	3,920	31.0%	2,433,690	28.2%	133	3.4%	32,092	1.3%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-43 Electric Demand, Statewide Electric

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	8,440	66.7%	227,091	2.6%	283	3.4%	10,830	4.8%
101 to 200 kw	1,350	10.7%	267,984	3.1%	96	7.1%	6,595	2.5%
201 to 399 kw	824	6.5%	415,251	4.8%	79	9.6%	8,299	2.0%
>=400 kw	702	5.6%	7,719,075	89.4%	101	14.4%	44,072	0.6%
Unknown	1,340	10.6%	6,647	0.1%	77	5.8%	13,442	HIGH
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-44 Business Opened, Statewide Electric

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	1,320	10.4%	2,692,230	31.2%	81	6.1%	6,867	0.3%
1990 to 1999	1,010	8.0%	366,166	4.2%	64	6.3%	2,748	0.8%
2000 to 2009	1,972	15.6%	1,020,247	11.8%	106	5.4%	17,450	1.7%
2010 to 2013	1,863	14.7%	863,603	10.0%	106	5.7%	15,679	1.8%
2014 or later	2,571	20.3%	1,260,112	14.6%	146	5.7%	8,402	0.7%
Unknown	3,920	31.0%	2,433,690	28.2%	133	3.4%	32,092	1.3%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-45 Number of Tenants in Structure, Statewide Electric Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	1,897	15.0%	2,542,598	29.4%	109	5.8%	13,077	0.5%
2 to 5	18.6%	2,362	18.7%	1,676,269	19.4%	140	5.9%	11,258	0.7%
6 to 10	2.4%	394	3.1%	201,416	2.3%	22	5.6%	8,592	4.3%
11 to 20	1.0%	215	1.7%	38,599	0.5%	32	14.9%	958	2.5%
>20	0.4%	238	1.9%	95,395	1.1%	47	19.8%	886	0.9%
Unknown	0.0%	7,550	59.7%	4,081,772	47.3%	286	3.8%	48,468	1.2%
Total²⁶	97.0%	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

²⁶ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-46 Woman/Minority Owned Status, Statewide Electric

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	47	0.4%	15,221	0.2%	2	4.3%	48	0.3%
Minority business owner	664	5.3%	57,908	0.7%	21	3.2%	728	1.3%
Woman-minority business owner	18	0.1%	757	0.0%	0	0.0%	0	0.0%
Not woman or minority business owner	1,316	10.4%	141,202	1.6%	60	4.6%	3,597	2.6%
Unknown	10,611	83.8%	8,420,960	97.5%	553	5.2%	78,865	0.9%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

Table 5-47 Primary Language at Business, Statewide Electric

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	310	2.5%	13,733	0.2%	15	4.8%	1,079	7.9%
Limited English	187	1.5%	8,184	0.1%	4	2.1%	78	1.0%
Unknown	12,159	96.1%	8,614,130	99.8%	617	5.1%	82,081	1.0%
Total	12,656	100.0%	8,636,047	100.0%	636	5.0%	83,238	1.0%

5.4 Statewide Gas Metrics

5.4.1 Residential Metrics

This section provides the statewide residential gas participation analysis. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%. For age of home, the discrepancy between the public data and the primary data source was too large to have comfort in drawing conclusions about the actual age distribution or the participation rate trends by age of home.

Table 5-48 Home Heating Fuel, Statewide Gas Residential²⁷

Heating Fuel	ACS Distribution
Utility gas	75.8%
Bottled, tank, or LP gas	1.8%
Electricity	12.3%
Fuel oil, kerosene, etc.	8.8%
Coal or coke	0.04%
Wood	0.4%
Solar energy	0.1%
Other fuel	0.4%
No fuel used	0.5%
Total	100%

²⁷ The table lists the percent of households in block groups that receive gas from the utilities in this report. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-49 Square Footage of Home, Statewide Gas Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<500	1,195	0.0%	527	0.0%	67	5.6%	2	0.4%
500 to 999	63,732	2.2%	35,903	1.5%	4,340	6.8%	710	2.0%
1,000 to 1,499	265,441	9.0%	197,044	8.1%	20,668	7.8%	3,995	2.0%
1,500 to 1,999	271,054	9.1%	245,602	10.1%	26,232	9.7%	3,295	1.3%
2,000 to 2,499	175,055	5.9%	186,874	7.7%	20,435	11.7%	1,985	1.1%
2,500 to 2,999	98,159	3.3%	122,041	5.0%	12,376	12.6%	1,060	0.9%
3,000 to 3,999	81,065	2.7%	122,336	5.0%	10,125	12.5%	690	0.6%
>=4,000	40,878	1.4%	86,416	3.5%	4,309	10.5%	360	0.4%
Unknown	1,969,062	66.4%	1,441,989	59.1%	134,139	6.8%	26,447	1.8%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-50 Type of Home, Statewide Gas Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single family	2,100,238	70.8%	1,943,149	79.7%	174,677	8.3%	27,907	1.4%
Multifamily	309,130	10.4%	152,491	6.3%	32,088	10.4%	3,368	2.2%
Mobile home	1,578	0.1%	574	0.0%	516	32.7%	21	3.6%
Group home	1,477	0.1%	446	0.0%	325	22.0%	0	0.0%
Unknown	553,218	18.7%	342,074	14.0%	25,085	4.5%	7,249	2.1%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-51 Household Income Status, Statewide Gas Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<=250% FPL	749,038	25.3%	528,752	21.7%	44,340	5.9%	15,721	3.0%
251 - 400% FPL	473,463	16.0%	376,562	15.4%	37,544	7.9%	5,639	1.5%
>400% FPL	1,189,984	40.1%	1,191,380	48.9%	125,723	10.6%	9,936	0.8%
Unknown	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-52 Household Cultural Group, Statewide Gas Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
African American	165,172	5.6%	132,912	5.5%	8,466	5.1%	7,217	5.4%
Central and Southwest Asian	5,279	0.2%	5,928	0.2%	437	8.3%	91	1.5%
Eastern European	132,126	4.5%	116,792	4.8%	11,458	8.7%	1,093	0.9%
Far Eastern	82,723	2.8%	75,108	3.1%	9,326	11.3%	554	0.7%
Hispanic	302,422	10.2%	241,232	9.9%	18,778	6.2%	6,122	2.5%
Middle Eastern	38,183	1.3%	36,181	1.5%	3,373	8.8%	855	2.4%
Jewish	105,721	3.6%	107,786	4.4%	11,106	10.5%	865	0.8%
Mediterranean	334,002	11.3%	308,735	12.7%	28,767	8.6%	3,282	1.1%
Native American	687	0.0%	594	0.0%	60	8.7%	26	4.4%
Pacific Islander	10,862	0.4%	9,322	0.4%	814	7.5%	116	1.2%
Scandinavian	29,953	1.0%	25,951	1.1%	2,441	8.2%	279	1.1%
South Asian	78,878	2.7%	71,952	3.0%	12,839	16.3%	904	1.3%
Western European	974,152	32.9%	828,499	34.0%	84,601	8.7%	9,189	1.1%
Miscellaneous other	160	0.0%	131	0.0%	23	14.4%	1	0.5%
Unknown	705,321	23.8%	477,609	19.6%	40,202	5.7%	7,952	1.7%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-53 Head of Household Age, Statewide Gas Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
18 to 24	52,072	1.8%	28,435	1.2%	4,408	8.5%	715	2.5%
25 to 29	100,631	3.4%	57,511	2.4%	8,745	8.7%	1,007	1.8%
30 to 34	157,849	5.3%	101,879	4.2%	15,572	9.9%	1,731	1.7%
35 to 44	387,482	13.1%	305,539	12.5%	38,320	9.9%	4,948	1.6%
45 to 54	471,583	15.9%	436,001	17.9%	41,657	8.8%	6,399	1.5%
55 to 64	522,009	17.6%	486,943	20.0%	44,339	8.5%	6,628	1.4%
65 and over	720,859	24.3%	680,386	27.9%	54,566	7.6%	9,868	1.5%
Unknown	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-54 LEED Certification, Statewide Gas Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	2,965,541	100.0%	2,438,687	100.0%	232,664	7.9%	38,542	1.6%
Masked	100	0.0%	45	0.0%	27	27.0%	2	4.4%
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-55 Gas Consumption, Statewide Gas Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
First Quintile (0-19)	587,325	19.8%	56,049	2.3%	36,497	6.2%	1,506	2.7%
Second Quintile (20-39)	587,323	19.8%	269,634	11.1%	43,899	7.5%	5,503	2.0%
Third Quintile (40-59)	587,327	19.8%	452,869	18.6%	49,352	8.4%	9,076	2.0%
Fourth Quintile (60-79)	587,325	19.8%	624,984	25.6%	50,064	8.5%	9,714	1.6%
Fifth Quintile (80-100)	587,325	19.8%	1,035,195	42.5%	47,525	8.1%	12,043	1.2%
Unknown	29,016	1.0%	0	0.0%	5,354	18.5%	703	Inf
Total	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-56 Primary Language at Home, Statewide Gas Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	92.8%	368,480	12.4%	326,919	13.4%	37,914	10.3%	4,466	1.4%
Limited English	7.2%	148,001	5.0%	110,209	4.5%	7,541	5.1%	4,087	3.7%
Unknown	0.0%	2,449,160	82.6%	2,001,604	82.1%	187,236	7.6%	29,992	1.5%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-57 Household Income, Statewide Gas Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< \$20,000	12.6%	278,048	9.4%	171,986	7.1%	13,350	4.8%	6,338	3.7%
\$20,000 to \$29,999	7.6%	181,964	6.1%	119,331	4.9%	10,566	5.8%	3,610	3.0%
\$30,000 to \$39,999	7.1%	178,955	6.0%	120,348	4.9%	11,037	6.2%	2,970	2.5%
\$40,000 to \$49,999	6.6%	161,254	5.4%	113,090	4.6%	11,019	6.8%	2,297	2.0%
\$50,000 to \$59,999	6.3%	157,845	5.3%	114,772	4.7%	11,564	7.3%	2,237	2.0%
\$60,000 to \$99,999	21.0%	529,036	17.8%	415,882	17.1%	43,304	8.2%	6,025	1.5%
\$100,000 to \$124,999	9.9%	246,724	8.3%	218,195	9.0%	24,551	10.0%	2,392	1.1%
\$125,000 to \$149,999	7.3%	183,113	6.2%	180,924	7.4%	19,654	10.7%	1,641	0.9%
\$150,000 to \$199,999	9.4%	218,624	7.4%	239,885	9.8%	26,727	12.2%	1,822	0.8%
>=\$200,000	12.2%	276,922	9.3%	402,281	16.5%	35,835	12.9%	1,964	0.5%
Unknown	0.0%	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-58 Home Built, Statewide Gas Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1939 or earlier	18.5%	263,787	8.9%	288,237	11.8%	17,180	6.5%	6,749	2.3%
1940-1949	7.6%	124,568	4.2%	116,836	4.8%	8,429	6.8%	2,350	2.0%
1950-1959	15.2%	360,663	12.2%	339,242	13.9%	26,759	7.4%	5,189	1.5%
1960-1969	13.5%	298,314	10.1%	291,107	11.9%	25,107	8.4%	3,322	1.1%
1970-1979	12.6%	223,517	7.5%	202,910	8.3%	21,684	9.7%	2,002	1.0%
1980-1989	11.8%	266,768	9.0%	222,421	9.1%	25,229	9.5%	1,980	0.9%
1990-1999	9.5%	185,309	6.3%	179,972	7.4%	21,060	11.4%	1,618	0.9%
2000-2009	9.4%	150,151	5.1%	155,213	6.4%	19,865	13.2%	1,296	0.8%
2010-2013	1.4%	15,664	0.5%	14,383	0.6%	1,671	10.7%	48	0.3%
2014 or later	0.6%	523,744	17.7%	286,373	11.7%	40,623	7.8%	6,742	2.4%
Unknown	0.0%	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-59 Number of Household Members, Statewide Gas Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
0	0.0%	11,029	0.4%	7,241	0.3%	592	5.4%	172	2.4%
1	25.9%	841,705	28.4%	548,057	22.5%	65,135	7.7%	8,770	1.6%
2	30.6%	482,540	16.3%	412,772	16.9%	39,964	8.3%	6,444	1.6%
3	17.7%	313,399	10.6%	297,591	12.2%	26,375	8.4%	4,443	1.5%
4	15.6%	238,358	8.0%	242,869	10.0%	21,636	9.1%	3,534	1.5%
5	6.6%	192,997	6.5%	206,468	8.5%	18,683	9.7%	2,896	1.4%
6	2.3%	151,798	5.1%	169,500	7.0%	15,573	10.3%	2,299	1.4%
7	1.4%	110,341	3.7%	128,234	5.3%	11,764	10.7%	1,699	1.3%
8	0.0%	70,318	2.4%	83,961	3.4%	7,885	11.2%	1,040	1.2%
Unknown	0.0%	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-60 Home Ownership Status, Statewide Gas Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Owner occupied	63.5%	1,905,707	64.3%	1,825,836	74.9%	170,532	9.0%	25,079	1.4%
Renter occupied	36.5%	506,778	17.1%	270,858	11.1%	37,075	7.3%	6,217	2.3%
Unknown	0.0%	553,156	18.7%	342,039	14.0%	25,084	4.5%	7,249	2.1%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

Table 5-61 Home Value, Statewide Gas Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<\$25,000	2.0%	1,400	0.1%	874	0.0%	61	4.4%	48	5.5%
\$25,000-\$49,999	1.1%	8,511	0.3%	5,388	0.2%	289	3.4%	413	7.7%
\$50,000-\$99,999	3.1%	56,556	1.9%	35,431	1.5%	2,047	3.6%	2,368	6.7%
\$100,000-\$124,999	2.8%	43,000	1.5%	26,158	1.1%	2,050	4.8%	882	3.4%
\$125,000-\$149,999	3.2%	65,452	2.2%	40,841	1.7%	3,804	5.8%	1,308	3.2%
\$150,000-\$174,999	5.4%	88,764	3.0%	57,235	2.4%	5,928	6.7%	1,665	2.9%
\$175,000-\$199,999	4.9%	104,507	3.5%	68,821	2.8%	7,595	7.3%	1,934	2.8%
\$200,000-\$249,999	11.3%	238,211	8.0%	168,091	6.9%	18,419	7.7%	3,902	2.3%
\$250,000-\$299,999	12.2%	257,184	8.7%	197,159	8.1%	21,335	8.3%	3,996	2.0%
\$300,000-\$399,999	20.6%	458,393	15.5%	386,537	15.9%	38,833	8.5%	5,782	1.5%
\$400,000-\$499,999	12.3%	300,606	10.1%	286,309	11.7%	28,974	9.6%	2,680	0.9%
\$500,000-\$999,999	18.0%	456,952	15.4%	546,332	22.4%	49,289	10.8%	3,419	0.6%
>=\$1,000,000	3.3%	89,035	3.0%	170,293	7.0%	7,546	8.5%	421	0.3%
Unknown	0.0%	797,070	26.9%	449,265	18.4%	46,521	5.8%	9,727	2.2%
Total	100.0%	2,965,641	100.0%	2,438,732	100.0%	232,691	7.9%	38,545	1.6%

5.4.2 Commercial Metrics

All statewide commercial gas metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

The C&I primary space heating fuel data comes from CBECS, which reports data at a regional level. The distribution will be the same for all utilities as for the statewide level reported in Table 5-62. Therefore, the table appears only in the statewide section.

Table 5-62 Primary Space Heating Fuel, Statewide Gas Commercial

Primary Space Heating Fuel	Percent of C&I Buildings
Electricity	20%
Natural gas	51%
Fuel oil	20%
District heat	2%
Propane	7%

Table 5-63 Primary Language at Business, Statewide Gas Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	8,769	3.5%	27,823	1.6%	217	2.5%	32	0.1%
Limited English	3,525	1.4%	10,413	0.6%	44	1.3%	14	0.1%
Unknown	240,270	95.1%	1,753,097	97.9%	8,423	3.5%	9,655	0.6%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-64 Business Opened, Statewide Gas Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	19,737	7.8%	127,488	7.1%	995	5.0%	1,915	1.5%
1990 to 1999	19,703	7.8%	106,995	6.0%	711	3.6%	554	0.5%
2000 to 2009	41,197	16.3%	396,696	22.2%	1,598	3.9%	1,303	0.3%
2010 to 2013	40,332	16.0%	206,088	11.5%	1,183	2.9%	695	0.3%
2014 or later	62,854	24.9%	427,906	23.9%	2,314	3.7%	1,696	0.4%
Unknown	68,741	27.2%	526,161	29.4%	1,883	2.7%	3,539	0.7%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-65 Number of Employees, Statewide Gas Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	93,710	37.1%	403,636	22.5%	2,579	2.8%	2,041	0.5%
5 to 9	40,114	15.9%	213,155	11.9%	1,470	3.7%	631	0.3%
10 to 19	17,912	7.1%	119,201	6.7%	840	4.7%	514	0.4%
20 to 49	10,651	4.2%	248,708	13.9%	728	6.8%	921	0.4%
50 to 99	3,513	1.4%	64,901	3.6%	409	11.6%	828	1.3%
100 to 249	1,889	0.8%	64,939	3.6%	194	10.3%	760	1.2%
250 to 499	278	0.1%	15,599	0.9%	18	6.5%	67	0.4%
500 to 999	75	0.0%	6,259	0.4%	9	12.0%	0	0.0%
1,000 to 4,999	28	0.0%	3,193	0.2%	4	14.3%	0	0.0%
Unknown	84,394	33.4%	651,741	36.4%	2,433	2.9%	3,939	0.6%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-66 Business Ownership Status, Statewide Gas Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	167,008	66.1%	1,126,178	62.9%	5,824	3.5%	5,574	0.5%
Branch	16,197	6.4%	122,166	6.8%	940	5.8%	576	0.5%
Headquarters	354	0.1%	7,084	0.4%	19	5.4%	10	0.1%
Subsidiary	264	0.1%	9,744	0.5%	18	6.8%	2	0.0%
Unknown	68,741	27.2%	526,161	29.4%	1,883	2.7%	3,539	0.7%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-67 LEED Certification, Statewide Gas Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Gold or Platinum	28	0.0%	856	0.0%	3	10.7	0	0.0%
Silver	24	0.0%	511	0.0%	3	12.5%	25	4.9%
Certified	39	0.0%	2,048	0.1%	5	12.8%	10	0.5%
Incomplete	69	0.0%	5,698	0.3%	6	8.7%	11	0.2%
Not Certified	252,404	99.9%	1,782,221	99.5%	8,667	3.4%	9,656	0.5%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-68 Gas Consumption, Statewide Gas Commercial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,250 therms	129,603	51.3%	59,902	3.3%	2,688	2.1%	282	0.5%
1,250 to 4,999 therms	69,352	27.5%	176,437	9.9%	2,331	3.4%	713	0.4%
5,000 to 12,499 therms	27,710	11.0%	217,947	12.2%	1,428	5.2%	1,165	0.5%
12,500 to 39,999 therms	16,206	6.4%	350,820	19.6%	1,338	8.3%	2,175	0.6%
>=40,000 therms	5,876	2.3%	986,227	55.1%	684	11.6%	4,266	0.4%
Unknown	3,817	1.5%	0	0.0%	215	5.6%	1,101	Inf
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-69 Woman/Minority Owned Status, Statewide Gas Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman business owner	1,224	0.5%	4,900	0.3%	38	3.1%	18	0.4%
Minority business owner	16,780	6.6%	68,269	3.8%	407	2.4%	282	0.4%
Woman-minority business owner	279	0.1%	1,294	0.1%	9	3.2%	12	0.9%
Not woman or minority business owner	25,451	10.1%	84,277	4.7%	617	2.4%	263	0.3%
Unknown	208,830	82.7%	1,632,594	91.1%	7,613	3.7%	9,127	0.6%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-70 Number of Tenants in Structure, Statewide Gas Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	32,069	12.7%	364,970	20.4%	1,083	3.4%	1,722	0.5%
2 to 5	18.6%	43,845	17.4%	308,719	17.2%	1,871	4.3%	1,746	0.6%
6 to 10	2.4%	13,073	5.2%	62,455	3.5%	517	4.0%	269	0.4%
11 to 20	1.0%	11,592	4.6%	47,710	2.7%	489	4.2%	134	0.3%
>20	0.4%	11,540	4.6%	82,609	4.6%	735	6.4%	888	1.1%
Unknown	0.0%	140,445	55.6%	924,870	51.6%	3,989	2.8%	4,943	0.5%
Total²⁸	97.0%	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

²⁸ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-71 Square Footage of Business, Statewide Gas Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Less than 1,499	65,472	25.9%	299,966	16.8%	1,583	2.4%	1,253	0.4%
1,500 to 2,499	43,458	17.2%	195,972	10.9%	1,208	2.8%	277	0.1%
2,500 to 4,999	32,466	12.9%	171,053	9.6%	1,216	3.8%	825	0.5%
5,000 to 9,999	13,508	5.4%	86,195	4.8%	781	5.8%	744	0.9%
10,000 to 19,999	8,753	3.5%	70,753	4.0%	584	6.7%	365	0.5%
20,000 to 39,999	6,581	2.6%	74,365	4.2%	460	7.0%	544	0.7%
40,000 to 99,999	5,474	2.2%	235,459	13.1%	475	8.7%	726	0.3%
100,000 or more	2,766	1.1%	84,670	4.7%	366	13.2%	1,049	1.2%
Unknown	74,086	29.3%	572,900	32.0%	2,011	2.7%	3,919	0.7%
Total	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

Table 5-72 Two-digit NAICS Classification, Statewide Gas Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Ag & Forestry	0.3%	314	0.1%	3,382	0.2%	5	1.6%	0	0.0%
Mining	0.0%	72	0.0%	147	0.0%	2	2.8%	0	0.0%
Utilities	0.1%	124	0.1%	156,637	8.7%	4	3.2%	5	0.0%
Construction	10.1%	9,032	3.6%	49,156	2.7%	223	2.5%	247	0.5%
Manufacturing	0.0%	6,871	2.7%	67,519	3.8%	235	3.4%	82	0.1%
Wholesale Trade	3.7%	5,696	2.3%	51,029	2.9%	230	4.0%	160	0.3%
Retail Trade	0.0%	26,968	10.7%	105,958	5.9%	1,026	3.8%	202	0.2%
Trans. and Warehousing	0.0%	3,911	1.6%	29,830	1.7%	136	3.5%	90	0.3%
Information	1.9%	3,105	1.2%	14,792	0.8%	95	3.1%	42	0.3%
Finance and Insurance	4.6%	6,287	2.5%	20,869	1.2%	215	3.4%	151	0.7%
Real Estate	14.7%	8,616	3.4%	67,307	3.8%	617	7.2%	945	1.4%
Prof., Sci., & Tech.	19.2%	11,965	4.7%	55,094	3.1%	444	3.7%	-266	-0.5%
Management of Companies and Enterprises	0.0%	465	0.2%	9,759	0.5%	13	2.8%	1	0.0%
Admin, Support, & Waste Svcs.	7.8%	4,647	1.8%	26,546	1.5%	231	5.0%	235	0.9%
Educational Services	3.8%	5,297	2.1%	67,328	3.8%	523	9.9%	1,629	2.4%
Health Care and Social Assistance	10.7%	21,311	8.4%	136,563	7.6%	574	2.7%	1,169	0.9%
Arts, Ent. & Rec.	5.6%	3,641	1.4%	22,176	1.2%	146	4.0%	120	0.5%
Accommodation and Food Services	4.2%	21,012	8.3%	130,894	7.3%	580	2.8%	391	0.3%
Other Services	13.3%	25,609	10.1%	95,295	5.3%	717	2.8%	390	0.4%
Public Administration	0.0%	18,880	7.5%	154,890	8.7%	785	4.2%	569	0.4%
Unknown	0.0%	68,741	27.2%	526,161	29.4%	1,883	2.7%	3,539	0.7%
Total	100.0%	252,564	100.0%	1,791,333	100.0%	8,684	3.4%	9,702	0.5%

5.4.3 Industrial Metrics

This section presents statewide industrial gas population analysis. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-73 Primary Language at Business, Statewide Gas Industrial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	241	2.9%	1,296	0.1%	11	4.6%	3	0.2%
Limited English	155	1.8%	1,044	0.1%	4	2.6%	0	0.0%
Unknown	8,044	95.3%	1,245,502	99.8%	335	4.2%	322	0.0%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-74 Business Opened, Statewide Gas Industrial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	906	10.7%	57,117	4.6%	49	5.4%	25	0.0%
1990 to 1999	686	8.1%	86,642	6.9%	29	4.2%	12	0.0%
2000 to 2009	1,344	15.9%	278,195	22.3%	60	4.5%	33	0.0%
2010 to 2013	1,329	15.8%	425,582	34.1%	49	3.7%	34	0.0%
2014 or later	1,887	22.4%	63,534	5.1%	89	4.7%	36	0.1%
Unknown	2,288	27.1%	336,771	27.0%	74	3.2%	185	0.1%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-75 Number of Employees, Statewide Gas Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	2,610	30.9%	289,766	23.2%	94	3.6%	48	0.0%
5 to 9	1,360	16.1%	26,998	2.2%	52	3.8%	21	0.1%
10 to 19	673	8.0%	84,305	6.8%	34	5.1%	17	0.0%
20 to 49	514	6.1%	33,087	2.7%	34	6.6%	31	0.1%
50 to 99	199	2.4%	394,534	31.6%	17	8.5%	9	0.0%
100 to 249	137	1.6%	29,184	2.3%	8	5.8%	3	0.0%
250 to 499	26	0.3%	12,360	1.0%	2	7.7%	0	0.0%
Unknown	2,907	34.4%	357,920	28.7%	105	3.6%	195	0.1%
Masked Categories	14	0.2%	19,688	1.6%	4	28.6%	0	0.0%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-76 Business Ownership Status, Statewide Gas Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	5,772	68.4%	857,384	68.7%	253	4.4%	122	0.0%
Branch	309	3.7%	42,737	3.4%	16	5.2%	17	0.0%
Headquarters	43	0.5%	6,594	0.5%	3	7.0%	1	0.0%
Subsidiary	28	0.3%	4,355	0.4%	4	14.3%	0	0.0%
Unknown	2,288	27.1%	336,771	27.0%	74	3.2%	185	0.1%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-77 LEED Certification, Statewide Gas Industrial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	8,431	99.9%	633,632	50.8%	348	4.1%	325	0.1%
Masked Categories	9	0.1%	614,209	49.2%	2	22.2%	0	0.0%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-78 Gas Consumption, Statewide Gas Industrial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
4,999 therms or less	6,070	71.9%	8,654	0.7%	181	3.0%	26	0.3%
5,000 to 12,499 therms	1,065	12.6%	8,519	0.7%	60	5.6%	57	0.7%
12,500 to 39,999 therms	744	8.8%	16,516	1.3%	61	8.2%	61	0.4%
40,000 to 149,999 therms	332	3.9%	24,360	2.0%	31	9.3%	181	0.7%
150,000 therms or more	228	2.7%	1,189,792	95.4%	17	7.5%	0	0.0%
Unknown	1	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-79 Woman/Minority Owned Status, Statewide Gas Industrial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman or woman-minority business owner	40	0.5%	443	0.0%	0	0.0%	0	0.0%
Minority business owner	536	6.4%	4,113	0.3%	16	3.0%	6	0.2%
Not woman or minority business owner	891	10.6%	7,634	0.6%	41	4.6%	13	0.2%
Unknown or masked	6,973	82.6%	1,235,652	99.0%	293	4.2%	305	0.0%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-80 Number of Tenants in Structure, Statewide Gas Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	1,421	16.8%	76,611	6.1%	66	4.6%	35	0.1%
2 to 5	18.6%	1,608	19.1%	671,707	53.8%	63	3.9%	32	0.0%
6 to 10	2.4%	285	3.4%	7,206	0.6%	15	5.3%	15	0.2%
11 to 20	1.0%	122	1.5%	1,044	0.1%	10	8.2%	1	0.1%
>20	0.4%	139	1.7%	7,891	0.6%	39	28.1%	0	0.0%
Unknown	0.0%	4,865	57.6%	483,383	38.7%	157	3.2%	241	0.1%
Total²⁹	97.0%	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-81 Square Footage of Business, Statewide Gas Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< 1,499	2,055	24.4%	35,385	2.8%	55	2.7%	24	0.1%
1,500-2,499	1,336	15.8%	274,634	22.0%	50	3.7%	30	0.0%
2,500-4,999	970	11.5%	22,596	1.8%	45	4.6%	34	0.2%
5,000-9,999	493	5.8%	80,897	6.5%	39	7.9%	13	0.0%
10,000-19,999	357	4.2%	12,996	1.0%	23	6.4%	4	0.0%
20,000-39,999	327	3.9%	12,661	1.0%	26	8.0%	5	0.0%
40,000-99,999	311	3.7%	29,740	2.4%	16	5.1%	11	0.0%
>=100,000	187	2.2%	441,838	35.4%	19	10.2%	8	0.0%
Unknown	2,404	28.5%	337,096	27.0%	77	3.2%	195	0.1%
Total	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%

Table 5-82 Two-digit NAICS Classification, Statewide Gas Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Construction	10.1%	437	5.2%	8,269	0.7%	14	3.2%	1	0.0%
Manufacturing	0.0%	829	9.8%	67,290	5.4%	56	6.8%	14	0.0%
Wholesale Trade	3.7%	511	6.1%	16,997	1.4%	20	3.9%	2	0.0%
Retail Trade	0.0%	783	9.3%	15,101	1.2%	49	6.3%	17	0.1%

²⁹ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Transportation & Warehousing	0.0%	183	2.2%	73,713	5.9%	8	4.4%	5	0.0%
Information	1.9%	81	1.0%	2,518	0.2%	4	4.9%	0	0.0%
Finance and Insurance	4.6%	133	1.6%	236,967	19.0%	3	2.3%	12	0.0%
Real Estate	14.7%	213	2.5%	16,776	1.3%	5	2.4%	7	0.0%
Prof., Sci., & Tech.	19.2%	502	6.0%	28,004	2.2%	21	4.2%	8	0.0%
Management of Companies and Enterprises	0.0%	21	0.3%	745	0.1%	3	14.3%	4	0.5%
Administrative, Support and Waste Management and Remediation Services	7.8%	195	2.3%	1,997	0.2%	2	1.0%	0	0.0%
Educational Services	3.8%	111	1.3%	1,209	0.1%	6	5.4%	10	0.8%
Health Care and Social Assistance	10.7%	483	5.7%	7,387	0.6%	10	2.1%	11	0.1%
Arts, Ent. & Rec.	5.6%	68	0.8%	486	0.0%	3	4.4%	3	0.6%
Accommodation and Food Services	4.2%	294	3.5%	10,598	0.9%	9	3.1%	10	0.1%
Other Services	13.3%	603	7.1%	4,450	0.4%	27	4.5%	23	0.5%
Public Administration	0.0%	680	8.1%	34,625	2.8%	34	5.0%	12	0.0%
Unknown	0.0%	2,288	27.1%	336,771	27.0%	74	3.2%	185	0.1%
Masked Categories	0.4%	25	0.3%	383,940	30.8%	2	8.0%	0	0.0%
Total	100.0%	8,440	100.0%	1,247,842	100.0%	350	4.2%	325	0.0%



5.5 Atlantic City Electric

5.5.1 Key Findings and Recommendations

5.5.1.1 Residential Key Findings ACE

Table 5-83 lists the statewide and utility residential electric programs and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. The remaining programs are for the general population.

Table 5-84 presents the results of the residential participation analysis for ACE for key population subgroups identified in the barriers analysis. These subgroups include low income, and customers whose primary language is not English. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-83 Programs and Barriers: ACE Residential


Organi zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – WARMAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■		■ ■	■	■ ■	■ ■
ACE	Quick Home Energy Check Up	■	■	■ ■	■	■	■ ■
ACE	Energy Wise Rewards	■		■ ■			■ ■
ACE	Home Energy Report (Behavior)			■	■	■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-84 Barriers to Participation: ACE Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ³⁰	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	38%	17.4%	18.7%	No
Moderate income (250% to 400% FPL)		22%	18.0%	18.7%	No
Multi-family	Split incentives, complex buying process	10%	27.0%	17.0%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	16%	12.7%	21.0%	Yes
Renters	Split incentives	16%	20.4%	17.6%	No
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	5%	21.9%	17.7%	No
Hispanic households	Non-minority culture groups	7%	18.4%	17.7%	No
Younger households	Head of household 30 to 65	5%	18.9%	17.9%	No
Lower consuming households	2nd to 5th quintiles	11%	13.3%	16.5%	Yes
Smaller homes	1500+ sq ft	38%	15.8%	20.6%	Yes

³⁰Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).



Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Low- and moderate-income households are critical segments. While the difference was small, the participation analysis showed lower participation rates for low-income and moderate-income customers households for ACE. Even with Comfort Partners, barriers remain in limited income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis shows lower participation for renters overall in the state, but these patterns were not seen for ACE. Multi-family homes were not found to participate at lower rates for ACE or statewide.

Limited English

Limited English exacerbates lack of awareness of program availability and benefits of energy efficiency and as makes participation more challenging. Primary language in the household is identified for only a small fraction of households in the data base. The available data do indicate lower participation rates for households with a primary language other than English for ACE as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Households with younger heads of household tend to have lower participation rates statewide. However, this trend was not observed for ACE.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for ACE. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

Minority Cultural Groups

Lower participation rates were not found among minority households in general for ACE, nor for African American or Hispanic households in particular.

Behavioral Programs

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in any other program. Accordingly, these programs are given special attention here. ACE already delivers a behavioral program. As of mid-Q4 2019, ACE had analyzed data for and communicated with over 320,000 treatment customers. ACE's behavioral program is an important ongoing tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the ACE

residential customer base. ACE may choose to select treatment groups, and properly matched random control, within subpopulations it observes in the future participating at relatively low rates.

5.5.1.2 Residential Recommendations ACE

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
4. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
5. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.5.1.3 Non-Residential Key Findings ACE

Table 5-85 lists the programs for ACE non-residential customers and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation. The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-86 presents key results of the commercial participation analysis by customer category. The data indicate that commercial small businesses participate at a lower rate than the rest of the commercial population. The other customer segments did not exhibit evidence of barriers for ACE commercial.

Table 5-87 presents the key results of the industrial participation analysis by customer category. There were few industrial customers from ACE, and very few participants. None of these customer segments exhibited evidence of barriers for ACE commercial.

Table 5-85 Programs and Barriers: ACE Commercial and Industrial

Organization	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureaucratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
ACE	Online Energy Management			■	■		■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-86 Barriers to Participation: ACE Commercial

Description	Subpopulation Common barriers affecting	Relative size ³¹	Participation Rate		Subpopulation Barrier(s) Indicated?
			Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	98%	3.9%	21.5%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	11%	1.9%	1.7%	No
Multi-tenant	Split incentives, complex buying process	68%	8.1%	4.5%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	23%	6.4%	5.3%	No
Health care		10%	5.3%	5.3%	No

³¹Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-87 Barriers to Participation: ACE Industrial

Subpopulation		Participation Rate		Subpopulation Barrier(s) Indicated?	
Description	Common barriers affecting	Relative size	Subpopulation		Rest of Pop.
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Demand data not available			
Primary language non-English	Lack of awareness, skepticism, complex buying process	Demand data not available			
Multi-tenant	Split incentives, complex buying process	56%	8.0%	8.0%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	13%	9.3%	5.1%	No
Health care		4%	13.3%	5.1%	No

Table 5-88 provides participation rate analysis for additional customer categories. Additional customer categories with lower participation rates for commercial were minority/women-owned businesses and customers with smaller facilities, fewer employees, and single locations. Industrial customers with smaller facilities and fewer employees also had relatively low participation rates. In addition to increasing with facility size and number of employees, ACE commercial participation rates also steadily increased from higher to lower consumption quintiles, although population savings rates decreased with increasing consumption. Participation rates and population savings rates did not show a consistent trend across demand tiers.

Table 5-88 Additional Participation Analysis: ACE Commercial and Industrial³²

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	50%	5.9%	5.3%	N
Minority/women-owned	21%	2.5%	3.0%	Y
Minority-owned	17%	1.7%	3.0%	Y
Smaller floorspace facilities (<5,000 sq ft)	80%	4.7%	9.3%	Y
Fewer employees (<20)	89%	4.8%	11.5%	Y
Single-location customers	91%	5.1%	9.9%	Y
Industrial				
Newer business (later than 2010)	38%	7.8%	4.4%	N
Minority/women-owned	0%	*	*	*
Minority-owned	0%	*	*	*
Smaller floorspace facilities (<5,000 sq ft)	62%	5.2%	6.5%	Y
Fewer employees (<20)	76%	4.6%	9.8%	Y
Single-location customers	91%	5.8%	5.7%	N

*Insufficient data available.

³² Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

5.5.1.4 Non-Residential Recommendations ACE

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
3. To mitigate high upfront costs and lack of capital, provide small businesses with higher incentive amounts than large business. Also offer utility on-bill repayment to cover the full cost of projects upfront.
4. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit. Use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
5. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
6. Create measure buckets targeted to the different NAICs classifications indicated in the detailed metrics tables to have high barriers. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
7. High-consuming electric commercial customers have been active participants but have relatively low population savings for electric measures.³³ Further analysis should be conducted to determine if and how electricity measures could be expanded for high consumption participants.

³³ Statewide this trend also held for industrial customers – this could not be confirmed for ACE due to lack of consumption data.

5.5.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-89 Home Heating Fuel, ACE Residential³⁴

Heating Fuel	ACS Distribution
Utility gas	69.0%
Bottled, tank, or LP gas	3.1%
Electricity	13.5%
Fuel oil, kerosene, etc.	12.1%
Coal or coke	0.1%
Wood	1.2%
Solar energy	0.1%
Other fuel	0.7%
No fuel used	0.3%
Total	100%

Table 5-90 Square Footage of Home, ACE Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<500	560	0.1%	2,378	0.1%	65	11.6%	7	0.3%
500 to 999	14,775	3.0%	85,024	2.4%	1,929	13.1%	229	0.3%
1,000 to 1,499	42,325	8.6%	292,321	8.2%	7,116	16.8%	1,056	0.4%
1,500 to 1,999	40,685	8.2%	317,946	8.9%	8,050	19.8%	1,251	0.4%
2,000 to 2,499	25,505	5.2%	223,705	6.3%	5,482	21.5%	939	0.4%
2,500 to 2,999	13,312	2.7%	133,626	3.7%	2,960	22.2%	515	0.4%
3,000 to 3,999	9,836	2.0%	116,304	3.3%	2,065	21.0%	396	0.3%
>=4,000	3,028	0.6%	47,176	1.3%	515	17.0%	138	0.3%
Unknown	344,879	69.7%	2,354,945	65.9%	51,713	15.0%	9,222	0.4%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

³⁴ The table lists the percent of households in block groups that receive electricity from ACE. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-91 Type of Home, ACE Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	315,625	63.8%	2,547,866	71.3%	53,661	17.0%	9,974	0.4%
Multifamily	35,832	7.2%	180,182	5.0%	9,672	27.0%	1,371	0.8%
Mobile home	346	0.1%	2,282	0.1%	113	32.7%	3	0.1%
Group home	1,237	0.3%	4,699	0.1%	301	24.3%	73	1.6%
Unknown	141,865	28.7%	838,397	23.5%	16,148	11.4%	2,333	0.3%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-92 Household Income Status, ACE Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	133,684	27.0%	915,309	25.6%	23,213	17.4%	4,320	0.5%
251 - 400% FPL	77,685	15.7%	599,485	16.8%	13,974	18.0%	2,387	0.4%
>400% FPL	141,673	28.6%	1,220,253	34.2%	26,560	18.8%	4,714	0.4%
Unknown	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-93 Household Cultural Group, ACE Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
African American	15,742	3.2%	106,783	3.0%	3,452	21.9%	832	0.8%
Central and Southwest Asian	359	0.1%	2,646	0.1%	45	12.5%	8	0.3%
Eastern European	14,465	2.9%	109,412	3.1%	2,525	17.5%	430	0.4%
Far Eastern	4,605	0.9%	30,790	0.9%	954	20.7%	218	0.7%
Hispanic	23,886	4.8%	175,221	4.9%	4,396	18.4%	930	0.5%
Middle Eastern	2,524	0.5%	17,628	0.5%	562	22.3%	112	0.6%
Jewish	11,949	2.4%	93,810	2.6%	2,080	17.4%	282	0.3%
Mediterranean	48,966	9.9%	388,171	10.9%	8,677	17.7%	1,464	0.4%
Native American	105	0.0%	759	0.0%	21	20.0%	3	0.4%
Pacific Islander	982	0.2%	7,181	0.2%	199	20.3%	31	0.4%
Scandinavian	4,537	0.9%	35,220	1.0%	758	16.7%	154	0.4%
South Asian	2,451	0.5%	16,621	0.5%	672	27.4%	98	0.6%
Western European	197,975	40.0%	1,558,287	43.6%	35,016	17.7%	6,130	0.4%
Unknown	166,351	33.6%	1,030,850	28.9%	20,537	12.4%	3,063	0.3%
Miscellaneous Other	8	0.0%	48	0.0%	1	12.5%	0	0.0%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-94 Head of Household Age, ACE Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	5,974	1.2%	44,155	1.2%	1,091	18.3%	205	0.5%
25 to 29	11,868	2.4%	83,833	2.4%	2,286	19.3%	484	0.6%
30 to 34	18,827	3.8%	139,635	3.9%	3,608	19.2%	734	0.5%
35 to 44	48,591	9.8%	388,232	10.9%	9,256	19.1%	1,780	0.5%
45 to 54	64,148	13.0%	546,557	15.3%	11,448	17.9%	2,168	0.4%
55 to 64	79,910	16.2%	638,750	17.9%	13,641	17.1%	2,322	0.4%
65 and over	123,724	25.0%	893,885	25.0%	22,417	18.1%	3,728	0.4%
Unknown	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-95 Home Rate Code, ACE Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	12,991	2.6%	0	0.0%	1,930	14.9%	286	Inf
ANRS_RS	481,670	97.3%	3,571,151	99.9%	77,916	16.2%	13,463	0.4%
ANRS_RTUO	196	0.0%	2,089	0.1%	44	22.5%	5	0.2%
Masked Categories	48	0.0%	187	0.0%	5	10.4%	0	0.0%
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-96 LEED Certification, ACE Residential

This table has been redacted to protect confidentiality.

Table 5-97 Electric Consumption, ACE Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	51,346	10.4%	48,924	1.4%	6,853	13.4%	1,178	2.4%
Second Quintile (20-39)	92,193	18.6%	290,702	8.1%	14,766	16.0%	2,700	0.9%
Third Quintile (40-59)	111,644	22.6%	614,065	17.2%	18,949	17.0%	3,022	0.5%
Fourth Quintile (60-79)	118,103	23.9%	998,912	28.0%	20,113	17.0%	3,422	0.3%
Fifth Quintile (80-100)	108,628	22.0%	1,620,824	45.4%	17,284	15.9%	3,146	0.2%
Unknown	12,991	2.6%	0	0.0%	1,930	14.9%	286	Inf
Total	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-98 Primary Language at Home, ACE Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	96.9%	29,200	5.9%	211,707	5.9%	6,130	21.0%	1,127	0.5%
Limited English	3.1%	5,433	1.1%	37,184	1.0%	692	12.7%	266	0.7%
Unknown	0.0%	460,272	93.0%	3,324,536	93.0%	73,073	15.9%	12,361	0.4%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-99 Household Income, ACE Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	12.9%	49,563	10.0%	302,856	8.5%	8,348	16.8%	1,841	0.6%
\$20,000-\$29,999	8.2%	31,488	6.4%	200,380	5.6%	5,571	17.7%	911	0.5%
\$30,000-\$39,999	7.8%	33,101	6.7%	222,742	6.2%	5,738	17.3%	1,071	0.5%
\$40,000-\$49,999	7.2%	28,251	5.7%	196,315	5.5%	4,636	16.4%	719	0.4%
\$50,000-\$59,999	7.1%	24,927	5.0%	181,048	5.1%	4,148	16.6%	750	0.4%
\$60,000-\$99,999	22.8%	82,148	16.6%	637,053	17.8%	14,688	17.9%	2,418	0.4%
\$100,000-\$124,999	10.6%	32,857	6.6%	278,725	7.8%	6,418	19.5%	1,141	0.4%
\$125,000-\$149,999	7.6%	23,221	4.7%	211,627	5.9%	4,607	19.8%	768	0.4%
\$150,000-\$199,999	8.1%	24,518	5.0%	239,289	6.7%	5,160	21.1%	1,027	0.4%
>=\$200,000	7.8%	22,968	4.6%	265,012	7.4%	4,433	19.3%	777	0.3%
Unknown	0.0%	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-100 Home Built, ACE Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=1939	11.9%	24,648	5.0%	182,002	5.1%	2,320	9.4%	397	0.2%
1940-1949	4.5%	10,370	2.1%	77,909	2.2%	1,042	10.1%	159	0.2%
1950-1959	10.9%	34,611	7.0%	251,052	7.0%	4,547	13.1%	666	0.3%
1960-1969	11.7%	41,297	8.3%	321,914	9.0%	5,926	14.4%	962	0.3%
1970-1979	17.0%	60,281	12.2%	512,208	14.3%	10,801	17.9%	1,996	0.4%
1980-1989	16.1%	53,422	10.8%	431,477	12.1%	10,592	19.8%	1,746	0.4%
1990-1999	11.6%	31,357	6.3%	269,715	7.6%	6,974	22.2%	1,204	0.5%
2000-2009	14.0%	35,417	7.2%	304,954	8.5%	9,032	25.5%	1,346	0.4%
2010-2013	1.6%	3,173	0.6%	24,550	0.7%	574	18.1%	50	0.2%
>=2014	0.7%	58,466	11.8%	359,265	10.1%	11,939	20.4%	2,895	0.8%
Unknown	0.0%	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-101 Number of Household Members, ACE Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
0	0.0%	2,185	0.4%	11,799	0.3%	386	17.7%	42	0.4%
1	25.7%	124,637	25.2%	811,549	22.7%	21,127	17.0%	3,934	0.5%
2	33.3%	74,994	15.2%	557,479	15.6%	13,123	17.5%	2,309	0.4%
3	16.6%	46,189	9.3%	370,845	10.4%	8,426	18.2%	1,386	0.4%
4	14.4%	33,890	6.9%	292,393	8.2%	6,402	18.9%	1,060	0.4%
5	6.4%	26,393	5.3%	241,486	6.8%	5,133	19.5%	967	0.4%
6	2.3%	20,199	4.1%	196,615	5.5%	4,097	20.3%	715	0.4%
7	1.3%	14,920	3.0%	151,781	4.3%	3,025	20.3%	576	0.4%
8	0.0%	9,635	2.0%	101,098	2.8%	2,028	21.1%	432	0.4%
Unknown	0.0%	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-102 Home Ownership Status, ACE Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	74.9%	297,858	60.2%	2,400,276	67.2%	52,496	17.6%	9,201	0.4%
Renter occupied	25.1%	55,184	11.2%	334,770	9.4%	11,251	20.4%	2,221	0.7%
Unknown	0.0%	141,863	28.7%	838,380	23.5%	16,148	11.4%	2,333	0.3%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

Table 5-103 Home Value, ACE Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<\$25,000	2.9%	247	0.1%	1,819	0.1%	18	7.3%	9	0.5%
\$25,000 to \$49,999	1.4%	1,545	0.3%	10,302	0.3%	236	15.3%	48	0.5%
\$50,000 to \$99,999	5.7%	16,488	3.3%	116,719	3.3%	2,174	13.2%	393	0.3%
\$100,000 to \$124,999	5.7%	16,498	3.3%	115,436	3.2%	2,397	14.5%	371	0.3%
\$125,000 to \$149,999	6.5%	23,304	4.7%	166,387	4.7%	3,770	16.2%	548	0.3%
\$150,000 to \$174,999	10.5%	31,077	6.3%	228,919	6.4%	5,197	16.7%	898	0.4%
\$175,000 to \$199,999	9.5%	34,792	7.0%	262,384	7.3%	6,296	18.1%	1,105	0.4%
\$200,000 to \$249,999	16.4%	61,249	12.4%	479,518	13.4%	11,736	19.2%	2,048	0.4%
\$250,000 to \$299,999	13.8%	42,278	8.5%	344,624	9.6%	8,709	20.6%	1,636	0.5%
\$300,000 to \$399,999	14.8%	45,277	9.2%	381,835	10.7%	8,679	19.2%	1,862	0.5%
\$400,000 to \$499,999	5.3%	19,477	3.9%	174,193	4.9%	3,440	17.7%	628	0.4%
\$500,000 to \$999,999	6.1%	25,867	5.2%	234,275	6.6%	3,345	12.9%	534	0.2%
\$1,000,000 or more	1.5%	7,761	1.6%	87,144	2.4%	692	8.9%	65	0.1%
Unknown	0.0%	169,045	34.2%	969,871	27.1%	23,206	13.7%	3,608	0.4%
Total	100.0%	494,905	100.0%	3,573,427	100.0%	79,895	16.1%	13,754	0.4%

5.5.3 Commercial Metrics

All commercial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-104 Primary Language at Business, ACE Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	864	1.3%	34,368	1.0%	15	1.7%	186	0.5%
Limited English	107	0.2%	5,091	0.1%	2	1.9%	0	0.0%
Unknown	64,070	98.5%	3,517,344	98.9%	2,524	3.9%	58,808	1.7%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-105 Business Opened, ACE Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	4,403	6.8%	217,555	6.1%	259	5.9%	5,114	2.4%
1990 to 1999	4,191	6.4%	305,068	8.6%	201	4.8%	6,523	2.1%
2000 to 2009	7,209	11.1%	454,730	12.8%	372	5.2%	10,099	2.2%
2010 to 2013	6,695	10.3%	399,221	11.2%	319	4.8%	5,784	1.5%
2014 or later	9,229	14.2%	624,769	17.6%	617	6.7%	14,907	2.4%
Unknown	33,314	51.2%	1,555,460	43.7%	773	2.3%	16,567	1.1%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-106 Number of Employees, ACE Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	15,633	24.0%	710,824	20.0%	808	5.2%	10,257	1.4%
5 to 9	6,863	10.6%	345,882	9.7%	330	4.8%	5,597	1.6%
10 to 19	3,789	5.8%	241,816	6.8%	129	3.4%	4,127	1.7%
20 to 49	2,158	3.3%	257,894	7.3%	207	9.6%	6,500	2.5%
50 to 99	666	1.0%	138,111	3.9%	106	15.9%	4,347	3.2%
100 to 249	282	0.4%	116,762	3.3%	45	16.0%	4,525	3.9%
250 to 499	63	0.1%	25,026	0.7%	6	9.5%	838	3.4%
500+	16	0.0%	34,245	1.0%	3	18.8%	2,198	6.4%
Unknown	35,571	54.7%	1,686,242	47.4%	907	2.6%	20,604	1.2%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-107 Business Ownership Status, ACE Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	28,882	44.4%	1,536,812	43.2%	1,485	5.1%	27,877	1.8%
Branch	2,769	4.3%	436,986	12.3%	280	10.1%	13,688	3.1%
Headquarters	51	0.1%	10,550	0.3%	2	3.9%	115	1.1%
Subsidiary	25	0.0%	16,995	0.5%	1	4.0%	747	4.4%
Unknown	33,314	51.2%	1,555,460	43.7%	773	2.3%	16,567	1.1%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-108 Business Rate Code, ACE Commercial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	2,083	3.2%	0	0.0%	62	3.0%	954	Inf
ANAG_AGSP	96	0.2%	336,833	9.5%	11	11.5%	1,660	0.5%
ANAG_AGSS	2,986	4.6%	1,401,506	39.4%	454	15.2%	26,592	1.9%
ANAG_TGST	35	0.1%	493,665	13.9%	13	37.1%	7,258	1.5%
ANEL_SPL	4,841	7.4%	20,509	0.6%	98	2.0%	876	4.3%
ANEO_DDC	852	1.3%	12,604	0.4%	9	1.1%	2	0.0%
ANMG_MGSP	95	0.2%	28,166	0.8%	4	4.2%	406	1.4%
ANMG_MGSS	52,845	81.3%	1,140,455	32.1%	1,867	3.5%	20,491	1.8%
ANMG_UMGSS	467	0.7%	4,018	0.1%	3	0.6%	0	0.0%
ANRS_RS	55	0.1%	360	0.0%	4	7.3%	0	0.1%
Streetlight	683	1.1%	0	0.0%	15	2.2%	756	Inf
Masked Categories	3	0.0%	118,685	3.3%	1	33.3%	0	0.0%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-109 LEED Certification, ACE Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Silver	18	0.0%	20,482	0.6%	4	22.2%	705	3.4%
Not Certified	65,005	99.9%	3,524,148	99.1%	2,536	3.9%	58,289	1.7%
Masked Categories	18	0.0%	12,174	0.3%	1	5.6%	1	0.0%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-110 Electric Consumption, ACE Commercial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	14,650	22.5%	6,316	0.2%	381	2.6%	1,068	16.9%
Second Quintile (20-39)	11,924	18.3%	31,502	0.9%	367	3.1%	1,187	3.8%
Third Quintile (40-59)	12,254	18.8%	90,590	2.6%	426	3.5%	1,778	2.0%
Fourth Quintile (60-79)	12,631	19.4%	258,370	7.3%	404	3.2%	4,158	1.6%
Fifth Quintile (80-100)	10,816	16.6%	3,170,025	89.1%	886	8.2%	49,093	1.6%
Unknown	2,766	4.3%	0	0.0%	77	2.8%	1,710	Inf
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-111 Electric Demand, ACE Commercial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	49,102	75.5%	1,160,715	32.6%	1,851	3.8%	21,674	1.9%
101 to 200 kw	1,172	1.8%	392,511	11.0%	126	10.8%	6,705	1.7%
201 to 399 kw	536	0.8%	388,149	10.9%	102	19.0%	8,890	2.3%
>=400 kw	395	0.6%	1,575,500	44.3%	98	24.8%	18,676	1.2%
Unknown	13,836	21.3%	39,928	1.1%	364	2.6%	3,049	7.6%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-112 Woman/Minority Owned Status, ACE Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	346	0.5%	12,726	0.4%	20	5.8%	157	1.2%
Minority business owner	1,285	2.0%	47,128	1.3%	21	1.6%	209	0.4%
Woman-minority business owner	21	0.0%	1,466	0.0%	1	4.8%	28	1.9%
Not woman or minority business owner	6,092	9.4%	160,091	4.5%	181	3.0%	3,178	2.0%
Unknown	57,297	88.1%	3,335,393	93.8%	2,318	4.1%	55,423	1.7%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-113 Number of Tenants in Structure, ACE Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	5,413	8.3%	346,409	9.7%	243	4.5%	6,530	1.9%
2 to 5	18.6%	6,949	10.7%	527,557	14.8%	511	7.4%	11,696	2.2%
6 to 10	2.4%	1,696	2.6%	109,456	3.1%	69	4.1%	2,223	2.0%
11 to 20	1.0%	1,404	2.2%	192,014	5.4%	88	6.3%	4,686	2.4%
>20	0.4%	1,237	1.9%	136,613	3.8%	247	20.0%	5,726	4.2%
Unknown	0.0%	48,342	74.3%	2,244,755	63.1%	1,383	2.9%	28,132	1.3%
Total³⁵	97.0%	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

³⁵ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-114 Square Footage of Business, ACE Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	11,366	17.5%	404,581	11.4%	427	3.8%	7,274	1.8%
1,500 to 2,499	7,679	11.8%	360,010	10.1%	424	5.5%	5,089	1.4%
2,500 to 4,999	5,522	8.5%	260,371	7.3%	304	5.5%	6,515	2.5%
5,000 to 9,999	2,259	3.5%	286,803	8.1%	189	8.4%	4,749	1.7%
10,000 to 19,999	1,596	2.5%	118,692	3.3%	134	8.4%	2,088	1.8%
20,000 to 39,999	1,027	1.6%	120,647	3.4%	76	7.4%	3,929	3.3%
40,000 to 99,999	958	1.5%	147,166	4.1%	81	8.5%	3,511	2.4%
100,000 or more	465	0.7%	174,045	4.9%	104	22.4%	6,576	3.8%
Unknown	34,169	52.5%	1,684,489	47.4%	802	2.4%	19,263	1.1%
Total	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%

Table 5-115 Two-digit NAICS Classification, ACE Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag, Forestry & Mining	0.7%	289	0.4%	14,484	0.4%	1	0.4%	0	0.0%
Utilities	0.1%	36	0.1%	1,083	0.0%	1	2.8%	0	0.0%
Construction	12.1%	1,843	2.8%	71,045	2.0%	106	5.8%	1,038	1.5%
Manufacturing	0.0%	820	1.3%	120,012	3.4%	27	3.3%	1,225	1.0%
Wholesale Trade	3.2%	953	1.5%	72,782	2.1%	34	3.6%	905	1.2%
Retail Trade	0.0%	4,926	7.6%	348,767	9.8%	348	7.1%	12,783	3.7%
Transportation and Warehousing	0.0%	589	0.9%	30,440	0.9%	16	2.7%	424	1.4%
Information	1.6%	429	0.7%	23,179	0.7%	43	10.0%	735	3.2%
Finance and Insurance	4.3%	871	1.3%	68,635	1.9%	36	4.1%	1,163	1.7%
Real Estate	15.4%	1,738	2.7%	70,501	2.0%	151	8.7%	1,269	1.8%
Prof., Sci., & Tech.	16.3%	1,743	2.7%	98,351	2.8%	56	3.2%	371	0.4%
Management of Companies and Enterprises	0.0%	28	0.0%	1,190	0.0%	0	0.0%	0	0.0%
Admin, Support, & Waste Svcs.	7.9%	937	1.4%	31,006	0.9%	49	5.2%	65	0.2%
Educational Services	3.9%	803	1.2%	149,647	4.2%	110	13.7%	5,128	3.4%
Health Care and Social Assistance	10.8%	3,277	5.0%	258,223	7.3%	173	5.3%	6,458	2.5%
Arts, Ent. & Rec.	5.7%	851	1.3%	38,483	1.1%	84	9.9%	785	2.0%
Accommodation and Food Services	4.7%	4,316	6.6%	305,519	8.6%	168	3.9%	3,863	1.3%
Other Services	13.3%	4,042	6.2%	90,310	2.5%	179	4.4%	3,180	3.5%
Public Administration	0.0%	3,236	5.0%	207,688	5.8%	186	5.8%	3,038	1.5%
Unknown	0.0%	33,314	51.2%	1,555,460	43.7%	773	2.3%	16,567	1.1%
Total	100.0%	65,041	100.0%	3,556,803	100.0%	2,541	3.9%	58,994	1.7%



5.5.4 Industrial Metrics

ACE Industrial customers were few and consumption in the linked data sets summed to 1 GWh. As a result, participation analysis is of limited value and metrics tables are not provided.

5.6 Butler Power & Light

5.6.1 Key Findings and Recommendations

Butler Power & Light has certain unique conditions that do not exist for the other utilities participating in this study. Butler does not have an item in their approved tariff to fund energy efficiency programs. In addition, Butler customers are most often not eligible to participate in BPU-sponsored programs. Observed participation should be understood and recommendations considered with these program eligibility limitations in mind.

5.6.1.1 Residential Key Findings Butler

Table 5-116 lists the statewide residential electric programs and which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. The remaining programs are for the general population.

Table 5-117 presents the results of the residential participation analysis for Butler for key population subgroups identified in the barriers analysis. These subgroups include low and moderate income and renters. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-116 Programs and Barriers: Residential Butler

Organi- zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – COOLAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■	■	■ ■	■	■ ■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-117 Barriers to Participation: Butler Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ³⁶	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	21%	1.2%	2.4%	Yes
Moderate income (250% to 400% FPL)		21%	1.1%	2.5%	Yes
Multi-family	Split incentives, complex buying process	8%	2.7%	1.9%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	Insufficient data			
Renters	Split incentives	15%	0.7%	2.1%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	Insufficient data			
Hispanic households	Non-minority culture groups	9%	2.2%	1.9%	No
Younger households	Head of household 30 to 65	5%	0.7%	2.3%	Yes
Lower consuming households	2nd to 5th quintiles	22%	1.1%	2.1%	Yes
Smaller homes	1500+ sq ft	33%	2.1%	2.9%	Yes

³⁶Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Limited income households are a critical segment. The participation analysis indicated barriers for low-income and moderate-income customers households for Butler. Even with Comfort Partners, barriers remain in low-income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis indicated barriers for renters do exist for Butler, as well as statewide.

Multi-family units do not show lower participation rates for Butler or statewide.

Limited English

There was insufficient data to assess this metric for Butler.

Minority Cultural Groups

The largest minority cultural group in the state, Hispanic, had low participation rates relative to non-minorities statewide but, for Butler, Hispanic households did not experience a lower participation rate than others. There was insufficient data to assess participation rates for African American households.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tend to have lower participation rates. This trend was observed also for Butler.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for Butler. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

5.6.1.2 Residential Recommendations Butler

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities,

community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.

3. For moderate-income customers, consider specific initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches, such as the weatherization programs offered to moderate-income customers by ETG and SJG. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. To address split incentives for renters, offer free installation of low cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
5. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
6. Further explore lower participation rates by younger households and consider targeted initiatives and marketing.
7. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.6.1.3 Non-Residential Key Findings Butler

Table 5-118 lists the statewide programs for non-residential customers and indicates which barriers the programs are designed to mitigate as well as the barriers affecting these programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-119 presents key results of the commercial participation analysis by customer category. Sufficient data were not available for small businesses, non-English primary language or multi-tenant customer categories. Other customer segments with commonly identified barriers do not show evidence of these barriers for Butler, including health care and the broader category of institutional customers.

Butler participation rates steadily increased from higher to lower consumption quintiles (population savings rates were not available). There was insufficient data to explore participation rates based on additional variables including demand tiers, age of business, facility square footage, number of employees, minority/women-owned business or single versus branch location.

Table 5-118 Programs and Barriers: Butler Non-Residential

Organization	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureaucratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Combined Heat & Power (CHP) - Fuel Cell	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-119 Barriers to Participation: Butler Non-residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Sub-population	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Demand data unavailable for Butler			
Primary language non-English	Lack of awareness, skepticism, complex buying process	Non-primary English data unavailable for Butler			
Multi-tenant	Split incentives, complex buying process	Insufficient data available.			
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	29%	1.0%	0.0%	No
Health care		4%	0.0%	0.0%	No



5.6.1.4 Non-Residential Recommendations Butler

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. There was limited data to assess whether any Butler non-residential customer categories could not fully access energy efficiency opportunities. The following recommendations focus on small business, the customer category which most consistently had low relative participation rates statewide and across the utilities.

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate high upfront costs and lack of capital, provide small business with higher incentive amounts than large business.
3. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
4. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Train distributors and retail outlets serving small commercial and industrial customers.

5.6.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-120 Home Heating Fuel, Butler Residential³⁷

Heating Fuel	ACS Distribution
Utility gas	67.2%
Bottled, tank, or LP gas	2.7%
Electricity	8.8%
Fuel oil, kerosene, etc.	19.6%
Coal or coke	0.4%
Wood	0.9%
Solar energy	0%
Other fuel	0.2%
No fuel used	0.2%
Total	100%

Table 5-121 Square Footage of Home, Butler Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<1,000	296	2.4%	1,571	1.7%	4	1.4%	0	0.0%
1,000 to 1,499	1,212	9.9%	8,183	8.8%	28	2.3%	3	0.0%
1,500 to 1,999	1,026	8.3%	8,048	8.7%	28	2.7%	2	0.0%
2,000 to 2,499	683	5.6%	6,408	6.9%	17	2.5%	2	0.0%
2,500 to 2,999	419	3.4%	4,990	5.4%	11	2.6%	1	0.0%
3,000 to 3,999	545	4.4%	8,053	8.7%	22	4.0%	2	0.0%
>=4,000	341	2.8%	7,521	8.1%	8	2.4%	2	0.0%
Unknown	7,781	63.2%	47,934	51.7%	112	1.4%	9	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

³⁷ The table lists the percent of households in block groups that receive electricity from Butler. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-122 Type of Home, Butler Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	10,121	82.3%	83,350	89.9%	189	1.9%	20	0.0%
Multifamily	844	6.9%	3,344	3.6%	23	2.7%	1	0.0%
Unknown	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Masked Categories	7	0.1%	15	0.0%	0	0.0%	0	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-123 Household Income Status, Butler Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	2,315	18.8%	12,810	13.8%	27	1.2%	2	0.0%
251 - 400% FPL	2,310	18.8%	14,756	15.9%	26	1.1%	2	0.0%
>400% FPL	6,347	51.6%	59,145	63.8%	159	2.5%	17	0.0%
Unknown	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-124 Household Cultural Group, Butler Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Eastern European	886	7.2%	7,106	7.7%	15	1.7%	1	0.0%
Far Eastern	183	1.5%	1,417	1.5%	1	0.6%	0	0.0%
Hispanic	902	7.3%	6,561	7.1%	20	2.2%	2	0.0%
Middle Eastern	176	1.4%	1,482	1.6%	0	0.0%	0	0.0%
Jewish	374	3.0%	3,636	3.9%	6	1.6%	1	0.0%
Mediterranean	2,024	16.5%	17,218	18.6%	45	2.2%	5	0.0%
Scandinavian	150	1.2%	1,321	1.4%	3	2.0%	0	0.0%
South Asian	170	1.4%	1,081	1.2%	4	2.4%	1	0.1%
Western European	5,066	41.2%	38,995	42.1%	98	1.9%	7	0.0%
Unknown	2,201	17.9%	12,596	13.6%	33	1.5%	3	0.0%
Masked Categories	171	1.4%	1,294	1.4%	5	2.9%	1	0.1%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-125 Head of Household Age, Butler Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	168	1.4%	810	0.9%	0	0.0%	0	0.0%
25 to 29	401	3.3%	1,414	1.5%	4	1.0%	0	0.0%
30 to 34	741	6.0%	3,310	3.6%	10	1.4%	1	0.0%
35 to 44	1,690	13.7%	12,039	13.0%	49	2.9%	3	0.0%
45 to 54	2,111	17.2%	19,723	21.3%	50	2.4%	4	0.0%
55 to 64	2,462	20.0%	22,690	24.5%	51	2.1%	4	0.0%
65 and over	3,399	27.6%	26,725	28.8%	48	1.4%	8	0.0%
Unknown	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-126 Home Rate Code, Butler Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	212	1.7%	0	0.0%	0	0.0%	0	Inf
E01	907	7.4%	0	0.0%	19	2.1%	1	HIGH
E09	11,182	90.9%	92,692	100.0%	210	1.9%	20	0.0%
Masked Categories	2	0.0%	16	0.0%	1	50.0%	0	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-127 LEED Certification, Butler Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not Certified	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-128 Electric Consumption, Butler Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	2,720	22.1%	1,044	1.1%	30	1.1%	1	0.1%
Second Quintile (20-39)	1,652	13.4%	5,212	5.6%	22	1.3%	1	0.0%
Third Quintile (40-59)	2,099	17.1%	11,548	12.5%	38	1.8%	4	0.0%
Fourth Quintile (60-79)	2,476	20.1%	21,031	22.7%	58	2.3%	6	0.0%
Fifth Quintile (80-100)	3,144	25.6%	53,873	58.1%	82	2.6%	9	0.0%
Unknown	212	1.7%	0	0.0%	0	0.0%	0	Inf
Total	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-129 Primary Language at Home, Butler Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	96.9%	1,454	11.8%	10,697	11.5%	26	1.8%	3	0.0%
Unknown	0.0%	10,817	87.9%	81,815	88.3%	202	1.9%	18	0.0%
Masked Categories	3.1%	32	0.3%	197	0.2%	2	6.3%	0	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-130 Household Income, Butler Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	5.7%	565	4.6%	2,314	2.5%	3	0.5%	0	0.0%
\$20,000 to \$29,999	5.4%	469	3.8%	2,094	2.3%	9	1.9%	0	0.0%
\$30,000 to \$39,999	5.0%	791	6.4%	3,564	3.8%	4	0.5%	0	0.0%
\$40,000 to \$49,999	4.2%	686	5.6%	3,338	3.6%	7	1.0%	1	0.0%
\$50,000 to \$59,999	3.6%	1,049	8.5%	4,922	5.3%	14	1.3%	0	0.0%
\$60,000 to \$99,999	21.6%	2,884	23.4%	17,569	19.0%	61	2.1%	5	0.0%
\$100,000 to \$124,999	13.2%	1,127	9.2%	9,074	9.8%	16	1.4%	2	0.0%
\$125,000 to \$149,999	8.6%	849	6.9%	7,837	8.5%	20	2.4%	3	0.0%
\$150,000 to \$199,999	14.0%	941	7.7%	10,191	11.0%	25	2.7%	3	0.0%
\$200,000+	18.7%	1,611	13.1%	25,807	27.8%	53	3.3%	7	0.0%
Unknown	0.0%	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-131 Home Built, Butler Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1939 or earlier	15.8%	1,097	8.9%	8,149	8.8%	23	2.1%	2	0.0%
1940 to 1949	5.8%	620	5.0%	4,115	4.4%	6	1.0%	0	0.0%
1950 to 1959	21.6%	1,739	14.1%	15,683	16.9%	28	1.6%	5	0.0%
1960 to 1969	14.5%	3,206	26.1%	23,355	25.2%	62	1.9%	7	0.0%
1970 to 1979	10.8%	1,061	8.6%	9,000	9.7%	13	1.2%	1	0.0%
1980 to 1989	7.2%	722	5.9%	9,636	10.4%	28	3.9%	3	0.0%
1990 to 1999	7.7%	297	2.4%	4,969	5.4%	14	4.7%	1	0.0%
2000 to 2009	14.3%	542	4.4%	5,853	6.3%	23	4.2%	2	0.0%
2010 or later	2.3%	1,688	13.8%	5,950	6.4%	15	0.9%	0	0.0%
Unknown	0.0%	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-132 Number of Household Members, Butler Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1	22.2%	3,503	28.5%	16,757	18.1%	49	1.4%	4	0.0%
2	32.9%	2,388	19.4%	16,950	18.3%	52	2.2%	6	0.0%
3	18.9%	1,363	11.1%	11,639	12.6%	33	2.4%	2	0.0%
4	17.7%	1,051	8.5%	10,606	11.4%	20	1.9%	2	0.0%
5	5.9%	965	7.8%	10,361	11.2%	19	2.0%	2	0.0%
6	1.0%	770	6.3%	9,241	10.0%	17	2.2%	2	0.0%
7	1.5%	552	4.5%	6,818	7.4%	14	2.5%	1	0.0%
8+	0.0%	380	3.1%	4,339	4.7%	8	2.1%	1	0.0%
Unknown	0.0%	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-133 Home Ownership Status, Butler Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	77.6%	9,363	76.1%	81,611	88.0%	201	2.2%	21	0.0%
Renter occupied	22.4%	1,609	13.1%	5,099	5.5%	11	0.7%	0	0.0%
Unknown	0.0%	1,331	10.8%	5,998	6.5%	18	1.4%	1	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

Table 5-134 Home Value, Butler Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$200,000	5.9%	178	1.5%	759	0.8%	2	1.1%	0	0.0%
\$200,000 to \$249,999	8.6%	392	3.2%	2,072	2.2%	2	0.5%	0	0.0%
\$250,000 to \$299,999	15.1%	1,069	8.7%	6,099	6.6%	17	1.6%	2	0.0%
\$300,000 to \$399,999	28.5%	3,121	25.4%	22,133	23.9%	68	2.2%	6	0.0%
\$400,000 to \$499,999	15.1%	1,799	14.6%	13,453	14.5%	43	2.4%	4	0.0%
\$500,000 to \$999,999	23.6%	3,403	27.7%	32,064	34.6%	65	1.9%	8	0.0%
\$1,000,000 or more	3.3%	361	2.9%	8,254	8.9%	11	3.1%	1	0.0%
Unknown	0.0%	1,980	16.1%	7,873	8.5%	22	1.1%	1	0.0%
Total	100.0%	12,303	100.0%	92,708	100.0%	230	1.9%	22	0.0%

5.6.3 Non-Residential Metrics

All non-residential data from Butler is reported in this section; Butler has only 2 industrial customers and as a result both Commercial and Industrial have been combined into this Non-Residential section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-135 Primary Language at Business, Butler Non-Residential

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	19	1.2%	409	0.8%	0	0.0%	0	0.0%
Unknown	1,582	98.8%	51,587	99.2%	13	0.8%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-136 Business Opened, Butler Non-Residential

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	66	4.1%	2,719	5.2%	2	3.0%	0	0.0%
1990 to 1999	88	5.5%	2,457	4.7%	0	0.0%	0	0.0%
2000 to 2009	151	9.4%	6,449	12.4%	0	0.0%	0	0.0%
2010 to 2013	187	11.7%	4,599	8.8%	0	0.0%	0	0.0%
2014 or later	174	10.9%	4,392	8.5%	0	0.0%	0	0.0%
Unknown	935	58.4%	31,379	60.4%	11	1.2%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-137 Number of Employees, Butler Non-Residential

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	320	20.0%	8,492	16.3%	0	0.0%	0	0.0%
5 to 9	213	13.3%	4,908	9.4%	2	0.9%	0	0.0%
10 to 19	53	3.3%	754	1.5%	0	0.0%	0	0.0%
20+	30	1.9%	1,939	5.7%	0	0.0%	0	0.0%

Unknown	985	61.5%	34,903	67.1%	11	1.1%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-138 Business Ownership Status, Butler Non-Residential

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	628	39.2%	18,582	35.7%	2	0.3%	0	0.0%
Branch	38	2.4%	2,034	3.9%	0	0.0%	0	0.0%
Unknown	935	58.4%	31,379	60.4%	11	1.2%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-139 Business Rate Code, Butler Non-Residential

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided or Masked	18	1.1%	163	0.3%	0	0.0%	0	0.0%
E01	1,583	98.9%	51,833	99.7%	13	0.8%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-140 LEED Certification, Butler Non-Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not Certified	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-141 Electric Consumption, Butler Non-Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	379	23.7%	107	0.2%	0	0.0%	0	0.0%
Second Quintile (20-39)	272	17.0%	770	1.5%	2	0.7%	0	0.0%
Third Quintile (40-59)	366	22.9%	2,594	5.0%	6	1.6%	0	0.0%
Fourth Quintile (60-79)	320	20.0%	6,351	12.2%	2	0.6%	0	0.0%
Fifth Quintile (80-100)	247	15.4%	42,173	81.1%	3	1.2%	38	0.1%
Unknown	17	1.1%	0	0.0%	0	0.0%	0	Inf
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-142 Electric Demand, Butler Non-Residential

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Unknown	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-143 Woman/Minority Owned Status, Butler Non-Residential

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not woman or minority business owner	111	6.9%	1,362	2.6%	0	0.0%	0	0.0%
Unknown	1,472	91.9%	50,247	96.6%	13	0.9%	38	0.1%
Masked Categories	18	1.1%	387	0.7%	0	0.0%	0	0.0%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-144 Number of Tenants in Structure, Butler Non-Residential

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	94	5.9%	2,666	5.1%	0	0.0%	0	0.0%
2 to 10	21.0%	161	10.1%	5,997	11.6%	2	1.3%	0	0.0%
11 to 20	1.0%	71	4.4%	5,226	10.1%	0	0.0%	0	0.0%
20+	0.4%	98	6.1%	2,843	5.5%	0	0.0%	0	0.0%
Unknown	0.0%	1,177	73.5%	35,265	67.8%	11	0.9%	38	0.1%
Total³⁸	97.0%	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

Table 5-145 Square Footage of Business, Butler Non-Residential

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	235	14.7%	3,144	6.1%	2	0.9%	0	0.0%
1,500 to 2,499	107	6.7%	4,823	9.3%	0	0.0%	0	0.0%
2,500 to 4,999	123	7.7%	3,108	6.0%	0	0.0%	0	0.0%
5,000 to 9,999	55	3.4%	1,167	2.2%	0	0.0%	0	0.0%
10,000 to 19,999	18	1.1%	814	1.6%	0	0.0%	0	0.0%
20,000 to 39,999	80	5.0%	3,124	6.0%	0	0.0%	0	0.0%
40,000+	24	1.5%	1,151	4.1%	0	0.0%	0	0.0%
Unknown	959	59.9%	33,665	64.8%	11	1.2%	38	0.1%
Total	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%

³⁸ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-146 Two-digit NAICS Classification, Butler Non-Residential

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Construction	10.7%	40	2.5%	500	1.0%	0	0.0%	0	0.0%
Manufacturing	0.0%	90	5.6%	2,879	5.5%	0	0.0%	0	0.0%
Retail Trade	0.0%	103	6.4%	1,802	3.5%	0	0.0%	0	0.0%
Finance and Insurance	4.9%	27	1.7%	551	1.1%	0	0.0%	0	0.0%
Real Estate	14.4%	18	1.1%	246	0.5%	0	0.0%	0	0.0%
Prof., Sci., & Tech.	19.4%	29	1.8%	955	1.8%	0	0.0%	0	0.0%
Educational Services	3.8%	18	1.1%	2,294	4.4%	2	11.1%	0	0.0%
Health Care and Social Assistance	10.4%	112	7.0%	4,217	8.1%	0	0.0%	0	0.0%
Accommodation and Food Services	3.9%	46	2.9%	1,166	2.2%	0	0.0%	0	0.0%
Other Services	13.3%	88	5.5%	1,355	2.6%	0	0.0%	0	0.0%
Public Administration	0.0%	65	4.1%	4,272	8.2%	0	0.0%	0	0.0%
Unknown	0.0%	935	58.4%	31,379	60.4%	11	1.2%	38	0.1%
Masked Categories	19.1%	30	1.9%	380	0.7%	0	0.0%	0	0.0%
Total	99.8%	1,601	100.0%	51,996	100.0%	13	0.8%	38	0.1%



5.7 Elizabethtown Gas

5.7.1 Key Findings and Recommendations

5.7.1.1 Residential Key Findings Elizabethtown

Table 5-147 lists the statewide and ETG residential gas programs and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. ETG also offers a weatherization program for moderate-income customers. The remaining programs are for the general population.

Table 5-148 presents the results of the residential participation analysis for ETG for key population subgroups identified in the barriers analysis. These subgroups include low and moderate income, renters, and customers whose primary language is not English. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-147 Programs and Barriers: Elizabethtown Residential


Organi zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC - WARMAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■		■ ■	■	■ ■	■ ■
ETG	High Efficiency Equipment Rebate Program	■ ■		■ ■	■	■	■ ■
ETG	Home Energy Assessment Program	■		■ ■	■ ■	■	■ ■
ETG	Home Energy Report Program			■	■	■	■ ■
ETG	Home Weatherization Program	■	■	■ ■	■	■ ■	■ ■
ETG	Behavioral			■	■	■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-148 Barriers to Participation: Elizabethtown Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ³⁹	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	33%	5.0%	8.4%	Yes
Moderate income (250% to 400% FPL)		20%	6.4%	8.4%	Yes
Multi-family	Split incentives, complex buying process	14%	7.7%	6.8%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	36%	4.4%	8.2%	Yes
Renters	Split incentives	23%	5.4%	7.4%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	6%	5.3%	7.1%	Yes
Hispanic households	Non-minority culture groups	20%	4.9%	7.1%	Yes
Younger households	Head of household 30 to 65	6%	5.8%	7.1%	Yes
Lower consuming households	2nd to 5th quintiles	23%	4.2%	6.6%	Yes
Smaller homes	1500+ sq ft	39%	6.8%	9.8%	Yes

³⁹Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).



Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Low- and moderate-income households are critical segments. The participation analysis indicated barriers for low-income and moderate-income households. Even with Comfort Partners, barriers remain in low-income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis indicated barriers do for renters exist in Elizabethtown Gas and statewide. Split incentives could be particularly relevant for gas heat, where landlords may be unwilling to invest in expensive envelope, furnace and boiler measures in cases where they don't pay the bills.

As was true statewide, Elizabethtown Gas customers in multi-family units do not show lower participation rates compared to other residential customers.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities for Elizabethtown Gas as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tend to have lower participation rates. This trend was observed also for Elizabethtown Gas.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for Elizabethtown Gas. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

Behavioral Programs

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in any other program. Accordingly, these programs are given special attention here. ETG already delivers a behavioral program. As of mid-Q4 2019, ETG had analyzed data for and communicated for 186,000 treatment customers. ETG's behavioral program is an important ongoing tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the ETG residential customer base. ETG may choose to select treatment groups, and properly matched random control, within subpopulations it observes in the future participating at relatively low rates.

5.7.1.2 Residential Recommendations Elizabethtown

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. Consider expanding ETG's existing initiatives for moderate-income customers, perhaps with targeted outreach and/or streamlined participation processes. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. To address split incentives for renters, offer free installation of low cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
5. For large multi-family buildings, e.g., four or more units, explore or expand outreach initiatives organized through commercial property owners and managers who already have the trust of their residents.
6. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
7. Further explore lower participation rates by younger households and consider targeted initiatives and marketing.
8. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.



5.7.1.3 Non-Residential Key Findings Elizabethtown

Table 5-149. lists the programs for non-residential ETG customers and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. Elizabethtown’s Team Trap Rebate program is directed at hospitals. The remaining programs are for the general population.

Table 5-150 presents key results of the ETG non-residential participation analysis by customer category. The data indicate that small businesses and Health Care participate at a lower rate than the rest of the non-residential population. However, other customer segments with commonly identified barriers do not show evidence of these barriers for ETG. These include non-English primary language, multi-tenant, and institutional customers as a whole.

Table 5-149. Programs and Barriers

Organi- zation	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skeptici- sm	Bureau- cratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
ETG	Steam Trap Rebate Program	■ ■	■ ■	■ ■		■ ■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-150 Barriers to Participation: Elizabethtown Non-Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	90%	2.1%	5.6%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	32%	1.1%	0.8%	No
Multi-tenant	Split incentives, complex buying process	66%	2.8%	2.4%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	23%	3.6%	2.1%	No
Health care		10%	1.6%	2.1%	Yes

The table below provides participation rate analysis for additional customer categories. Other customer categories with lower participation rates were minority/women-owned businesses and customers with smaller facilities, fewer employees, and single locations. In addition to increasing with facility size and number of employees, ETG participation rates also steadily increased from higher to lower consumption tiers, while population savings rates were varied. At the highest consumption tier for ETG, population savings rates were lower than the average. In the statewide findings, industrial but not commercial population savings rates were lower in the highest tier. While it is not discernible for ETG as industrial is not broken out, industrial could be driving down population savings rates in the highest tier for ETG.

Table 5-151 Additional Participation Analysis: ETG Non-Residential⁴⁰

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Newer business (later than 2010)	53%	5.0%	5.3%	N
Minority/women-owned	25%	0.0%	4.2%	Y
Minority-owned	20%	0.0%	4.2%	Y
Smaller floorspace facilities (<5,000 sq ft)	79%	1.8%	5.3%	Y
Fewer employees (<20)	88%	4.0%	11.9%	Y
Single-location customers	91%	5.1%	6.1%	Y

⁴⁰ Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

5.7.1.4 Non-Residential Recommendations Elizabethtown

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for ETG non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
3. To mitigate lack of information for small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small companies.
4. To mitigate high upfront costs and lack of capital, provide small business and Health care with higher incentive amounts than general large businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
5. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
6. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
7. Create measure buckets targeted to the different NAICs classifications with lower participation rates indicated in the detailed metrics tables. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
8. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small non-residential customers.
9. High-consuming gas customers had high participation rates, but population savings rates were somewhat lower in the highest tier. Based on statewide and utility results where the industrial sector was broken out, this trend may be driven by the industrial sector. Further analysis should be conducted to assess potential for added gas savings in the highest tier of consumption, particularly for industrial customers.

5.7.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-152 Home Heating Fuel, Elizabethtown Residential⁴¹

Heating Fuel	ACS Distribution
Utility gas	68.8%
Bottled, tank, or LP gas	3.3%
Electricity	8.9%
Fuel oil, kerosene, etc.	17.1%
Coal or coke	0.1%
Wood	0.9%
Solar energy	0.1%
Other fuel	0.5%
No fuel used	0.5%
Total	100%

Table 5-153 Square Footage of Home, Elizabethtown Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,000	5,043	1.8%	3,199	1.5%	277	5.5%	6	0.2%
1,000 to 1,499	17,215	6.2%	13,358	6.4%	1,244	7.2%	34	0.3%
1,500 to 1,999	14,953	5.4%	13,791	6.6%	1,255	8.4%	41	0.3%
2,000 to 2,499	8,719	3.2%	9,758	4.7%	926	10.6%	34	0.4%
2,500 to 2,999	4,940	1.8%	6,343	3.0%	570	11.5%	24	0.4%
3,000 to 3,999	3,873	1.4%	5,872	2.8%	446	11.5%	20	0.3%
>=4,000	2,209	0.8%	3,471	1.7%	220	10.0%	14	0.4%
Unknown	220,276	79.5%	154,123	73.4%	11,641	5.3%	523	0.3%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

⁴¹ The table lists the percent of households in block groups that receive gas from Elizabethtown. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-154 Type of Home, Elizabethtown Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single family	173,405	62.6%	158,380	75.5%	11,769	6.8%	485	0.3%
Multifamily	28,367	10.2%	9,827	4.7%	2,194	7.7%	87	0.9%
Unknown	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Masked Categories	20	0.0%	11	0.0%	0	0.0%	0	0.0%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-155 Household Income Status, Elizabethtown Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
250% FPL or less	65,846	23.8%	45,512	21.7%	3,313	5.0%	186	0.4%
251 - 400% FPL	40,798	14.7%	32,476	15.5%	2,631	6.5%	102	0.3%
>400% FPL	95,148	34.3%	90,230	43.0%	8,019	8.4%	284	0.3%
Unknown	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-156 Household Cultural Group, Elizabethtown Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
African American	10,843	3.9%	8,384	4.0%	570	5.3%	38	0.5%
Eastern European	13,194	4.8%	10,997	5.2%	908	6.9%	33	0.3%
Far Eastern	5,548	2.0%	4,833	2.3%	482	8.7%	15	0.3%
Hispanic	37,804	13.6%	29,615	14.1%	1,834	4.9%	75	0.3%
Middle Eastern	3,248	1.2%	2,683	1.3%	258	7.9%	19	0.7%
Jewish	6,385	2.3%	5,970	2.8%	539	8.4%	12	0.2%
Mediterranean	23,002	8.3%	20,568	9.8%	1,650	7.2%	53	0.3%
Pacific Islander	1,207	0.4%	1,027	0.5%	65	5.4%	1	0.1%
Scandinavian	2,361	0.9%	2,026	1.0%	172	7.3%	8	0.4%
South Asian	11,913	4.3%	9,569	4.6%	1,431	12.0%	69	0.7%
Western European	71,007	25.6%	59,810	28.5%	4,962	7.0%	215	0.4%
Other Minority	293	0.1%	259	0.1%	20	6.8%	1	0.4%
Unknown	90,423	32.6%	54,177	25.8%	3,688	4.1%	155	0.3%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-157 Head of Household Age, Elizabethtown Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
18 to 24	4,277	1.5%	2,276	1.1%	245	5.7%	12	0.5%
25 to 29	8,379	3.0%	4,566	2.2%	488	5.8%	22	0.5%
30 to 34	13,299	4.8%	8,317	4.0%	852	6.4%	32	0.4%
35 to 44	33,771	12.2%	25,911	12.3%	2,475	7.3%	91	0.4%
45 to 54	41,244	14.9%	36,661	17.5%	3,011	7.3%	132	0.4%
55 to 64	44,337	16.0%	39,915	19.0%	3,115	7.0%	127	0.3%
65 and over	56,485	20.4%	50,572	24.1%	3,777	6.7%	156	0.3%
Unknown	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-158 Home Rate Code, Elizabethtown Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not provided	6,924	2.5%	0	0.0%	191	2.8%	3	Inf
ET-RDS	270,267	97.5%	209,878	100.0%	16,385	6.1%	693	0.3%
Masked Categories	37	0.0%	39	0.0%	3	8.1%	0	0.0%
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-159 LEED Certification, Elizabethtown Residential

This table has been removed to protect confidentiality.

Table 5-160 Gas Consumption, Elizabethtown Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
First Quintile (0-19)	63,418	22.9%	5,008	2.4%	2,673	4.2%	109	2.2%
Second Quintile (20-39)	47,824	17.3%	21,928	10.5%	2,414	5.1%	82	0.4%
Third Quintile (40-59)	51,929	18.7%	40,216	19.2%	3,400	6.6%	146	0.4%
Fourth Quintile (60-79)	57,334	20.7%	61,107	29.1%	4,046	7.1%	182	0.3%
Fifth Quintile (80-100)	49,799	18.0%	81,658	38.9%	3,855	7.7%	175	0.2%
Unknown	6,924	2.5%	0	0.0%	191	2.8%	3	Inf
Total	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-161 Primary Language at Home, Elizabethtown Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	91.7%	38,133	13.8%	32,724	15.6%	3,131	8.2%	130	0.4%
Limited English	8.3%	21,740	7.8%	15,130	7.2%	952	4.4%	50	0.3%
Unknown	0.0%	217,355	78.4%	162,063	77.2%	12,496	5.8%	516	0.3%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-162 Household Income, Elizabethtown Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< \$20,000	10.1%	23,574	8.5%	13,085	6.2%	1,073	4.6%	62	0.5%
\$20,000 to \$29,999	7.0%	15,804	5.7%	10,110	4.8%	745	4.7%	44	0.4%
\$30,000 to \$39,999	6.9%	15,341	5.5%	10,259	4.9%	808	5.3%	38	0.4%
\$40,000 to \$49,999	6.3%	14,079	5.1%	10,091	4.8%	781	5.6%	48	0.5%
\$50,000 to \$59,999	6.0%	13,342	4.8%	9,988	4.8%	748	5.6%	37	0.4%
\$60,000 to \$99,999	22.6%	45,536	16.4%	36,164	17.2%	2,823	6.2%	95	0.3%
\$100,000 to \$124,999	10.4%	21,719	7.8%	18,691	8.9%	1,731	8.0%	56	0.3%
\$125,000 to \$149,999	7.5%	14,130	5.1%	13,504	6.4%	1,239	8.8%	32	0.2%
\$150,000 to \$199,999	10.5%	16,792	6.1%	17,731	8.5%	1,683	10.0%	60	0.3%
>=\$200,000	12.8%	21,475	7.8%	28,595	13.6%	2,332	10.9%	100	0.4%
Unknown	0.0%	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-163 Home Built, Elizabethtown Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1939 or earlier	19.8%	30,097	10.9%	30,538	14.6%	1,780	5.9%	77	0.3%
1940 to 1949	9.8%	20,082	7.2%	17,561	8.4%	1,338	6.7%	56	0.3%
1950 to 1959	17.3%	41,779	15.1%	37,478	17.9%	2,762	6.6%	100	0.3%
1960 to 1969	13.0%	18,090	6.5%	18,136	8.6%	1,460	8.1%	62	0.3%
1970 to 1979	10.5%	8,719	3.2%	8,441	4.0%	792	9.1%	32	0.4%
1980 to 1989	11.3%	18,281	6.6%	15,016	7.2%	1,505	8.2%	49	0.3%
1990 to 1999	8.4%	10,230	3.7%	10,560	5.0%	999	9.8%	41	0.4%
2000 to 2009	8.1%	7,514	2.7%	8,807	4.2%	705	9.4%	27	0.3%
2010 to 2013	1.2%	542	0.2%	580	0.3%	61	11.3%	3	0.6%
2014 or later	0.5%	46,458	16.8%	21,101	10.1%	2,561	5.5%	124	0.6%
Unknown	0.0%	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-164 Number of Household Members, Elizabethtown Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
0	0.0%	761	0.3%	425	0.2%	24	3.2%	1	0.2%
1	23.8%	69,529	25.1%	42,920	20.5%	4,074	5.9%	171	0.4%
2	29.7%	40,133	14.5%	33,080	15.8%	2,757	6.9%	115	0.4%
3	18.9%	26,390	9.5%	24,053	11.5%	1,893	7.2%	76	0.3%
4	17.1%	20,218	7.3%	19,816	9.4%	1,553	7.7%	59	0.3%
5	6.9%	16,292	5.9%	16,805	8.0%	1,275	7.8%	49	0.3%
6	2.3%	12,994	4.7%	13,807	6.6%	1,059	8.2%	43	0.3%
7	1.3%	9,440	3.4%	10,422	5.0%	797	8.4%	30	0.3%
8	0.0%	6,035	2.2%	6,891	3.3%	531	8.8%	28	0.4%
Unknown	0.0%	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-165 Home Ownership Status, Elizabethtown Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Owner occupied	64.9%	155,953	56.3%	147,807	70.4%	11,492	7.4%	450	0.3%
Renter occupied	35.2%	45,839	16.5%	20,412	9.7%	2,471	5.4%	122	0.6%
Unknown	0.0%	75,436	27.2%	41,698	19.9%	2,616	3.5%	124	0.3%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

Table 5-166 Home Value, Elizabethtown Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<\$25,000	1.7%	115	0.0%	64	0.0%	3	2.6%	0	0.0%
\$25,000 to \$49,999	0.7%	290	0.1%	170	0.1%	10	3.5%	1	0.4%
\$50,000 to \$99,999	1.5%	2,443	0.9%	1,260	0.6%	67	2.7%	6	0.5%
\$100,000 to \$124,999	1.8%	2,117	0.8%	1,303	0.6%	88	4.2%	4	0.3%
\$125,000 to \$149,999	1.9%	3,058	1.1%	1,817	0.9%	112	3.7%	5	0.3%
\$150,000 to \$174,999	4.3%	4,476	1.6%	2,759	1.3%	217	4.9%	5	0.2%
\$175,000 to \$199,999	4.5%	6,714	2.4%	4,388	2.1%	322	4.8%	15	0.3%
\$200,000 to \$249,999	12.1%	23,402	8.4%	16,990	8.1%	1,182	5.1%	39	0.2%
\$250,000 to \$299,999	14.7%	30,323	10.9%	24,190	11.5%	1,758	5.8%	80	0.3%
\$300,000 to \$399,999	24.9%	44,896	16.2%	39,685	18.9%	2,888	6.4%	116	0.3%
\$400,000 to \$499,999	13.1%	24,898	9.0%	23,698	11.3%	2,099	8.4%	73	0.3%
\$500,000 to \$999,999	16.7%	27,661	10.0%	33,498	16.0%	3,014	10.9%	125	0.4%
\$1,000,000 or more	2.1%	8,325	3.0%	11,547	5.5%	708	8.5%	24	0.2%
Unknown	0.0%	98,510	35.5%	48,549	23.1%	4,111	4.2%	202	0.4%
Total	100.0%	277,228	100.0%	209,917	100.0%	16,579	6.0%	696	0.3%

5.7.3 Non-Residential Metrics

All non-residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-167 Gas Consumption, Elizabethtown Non-Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,250 therms	10,706	47.5%	4,816	3.7%	185	1.7%	17	0.4%
1,250 to 4,999 therms	6,233	27.7%	16,419	12.6%	137	2.2%	82	0.5%
5,000 to 12,499 therms	2,811	12.5%	22,146	17.0%	122	4.3%	159	0.7%
12,500 to 39,999 therms	1,695	7.5%	37,457	28.7%	114	6.7%	143	0.4%
>=40,000 therms	560	2.5%	49,745	38.1%	37	6.6%	143	0.3%
Unknown	524	2.3%	0	0.0%	5	1.0%	0	Inf
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-168 LEED Certification, Elizabethtown Non-Residential

This table has been removed to protect confidentiality.

Table 5-169 Square Footage of Business, Elizabethtown Non-Residential

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Less than 1,499	5,548	24.6%	20,167	15.4%	88	1.6%	33	0.2%
1,500 to 2,499	3,534	15.7%	15,434	11.8%	64	1.8%	20	0.1%
2,500 to 4,999	2,568	11.4%	12,332	9.4%	52	2.0%	110	0.9%
5,000 to 9,999	1,051	4.7%	6,871	5.3%	34	3.2%	23	0.3%
10,000 to 19,999	721	3.2%	5,500	4.2%	49	6.8%	15	0.3%
20,000 to 39,999	522	2.3%	5,598	4.3%	27	5.2%	11	0.2%
40,000 to 99,999	516	2.3%	8,818	6.8%	37	7.2%	76	0.9%
100,000 or more	245	1.1%	6,907	5.3%	14	5.7%	48	0.7%
Unknown	7,824	34.7%	48,955	37.5%	235	3.0%	210	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-170 Two-digit NAICS Classification, Elizabethtown Non-Residential

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Ag & Forestry	0.3%	38	0.2%	249	0.2%	1	2.6%	0	0.0%
Mining & Utilities	0.1%	31	0.1%	52	0.0%	0	0.0%	0	0.0%
Construction	10.5%	733	3.3%	3,402	2.6%	26	3.6%	7	0.2%
Manufacturing	0.0%	770	3.4%	7,322	5.6%	11	1.4%	5	0.1%
Wholesale Trade	3.7%	575	2.6%	5,276	4.0%	13	2.3%	5	0.1%
Retail Trade	0.0%	2,157	9.6%	7,640	5.9%	40	1.9%	25	0.3%
Transportation and Warehousing	0.0%	403	1.8%	3,469	2.7%	7	1.7%	6	0.2%
Information	1.9%	202	0.9%	577	0.4%	6	3.0%	2	0.4%
Finance and Insurance	4.3%	495	2.2%	1,570	1.2%	10	2.0%	6	0.4%
Real Estate	13.4%	587	2.6%	4,621	3.5%	27	4.6%	90	1.9%
Prof., Sci., & Tech.	21.0%	977	4.3%	4,169	3.2%	20	2.1%	15	0.4%
Management of Companies and Enterprises	0.0%	26	0.1%	87	0.1%	0	0.0%	0	0.0%
Admin, Support, & Waste Svcs.	8.3%	380	1.7%	1,487	1.1%	21	5.5%	1	0.1%
Educational Services	4.0%	415	1.8%	5,303	4.1%	43	10.4%	102	1.9%
Health Care and Social Assistance	9.9%	1,510	6.7%	7,406	5.7%	24	1.6%	11	0.2%
Arts, Ent. & Rec.	5.3%	273	1.2%	1,263	1.0%	3	1.1%	0	0.0%
Accommodation and Food Services	4.1%	1,773	7.9%	9,603	7.4%	25	1.4%	35	0.4%
Other Services	13.1%	2,189	9.7%	8,510	6.5%	35	1.6%	12	0.1%
Public Administration	0.0%	1,565	7.0%	11,335	8.7%	59	3.8%	13	0.1%
Unknown	0.0%	7,430	33.0%	47,243	36.2%	229	3.1%	208	0.4%
Total	100.0%	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-171 Number of Employees, Elizabethtown Non-Residential

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	7,593	33.7%	26,875	20.6%	125	1.7%	42	0.2%
5 to 9	3,244	14.4%	16,777	12.9%	70	2.2%	106	0.6%
10 to 19	1,598	7.1%	8,846	6.8%	63	3.9%	17	0.2%
20 to 49	892	4.0%	10,413	8.0%	39	4.4%	62	0.6%
50 to 99	313	1.4%	5,776	4.4%	27	8.6%	52	0.9%
100 to 249	208	0.9%	6,436	4.9%	14	6.7%	50	0.8%
250+	28	0.1%	892	0.7%	1	3.5%	0	0.0%
Unknown	8,653	38.4%	54,566	41.8%	261	3.0%	214	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-172 Business Ownership Status, Elizabethtown Non-Residential

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	13,736	61.0%	71,826	55.0%	327	2.4%	289	0.4%
Branch	1,305	5.8%	9,544	7.3%	39	3.0%	44	0.5%
Headquarters	36	0.2%	699	0.5%	2	5.6%	3	0.4%
Subsidiary	22	0.1%	1,271	1.0%	3	13.6%	0	0.0%
Unknown	7,430	33.0%	47,243	36.2%	229	3.1%	208	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-173 Business Rate Code, Elizabethtown Non-Residential

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not provided	524	2.3%	0	0.0%	5	1.0%	0	Inf
ET-GDS	6,534	29.0%	107,336	82.2%	297	4.6%	465	0.4%
ET-GDSTE	42	0.2%	1,228	0.9%	0	0.0%	0	0.0%
ET-SGS	15,370	68.2%	19,021	14.6%	298	1.9%	79	0.4%
ET-SGSTE	33	0.2%	80	0.1%	0	0.0%	0	0.0%
Masked	26	0.1%	2,918	2.2%	0	0.0%	0	0.0%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-174 Business Opened, Elizabethtown Non-Residential

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	1,881	8.4%	12,473	9.6%	44	2.3%	64	0.5%
1990 to 1999	1,818	8.1%	9,907	7.6%	60	3.3%	102	1.0%
2000 to 2009	3,391	15.1%	18,230	14.0%	61	1.8%	23	0.1%
2010 to 2013	3,141	13.9%	15,739	12.1%	73	2.3%	37	0.2%
2014 or later	4,868	21.6%	26,990	20.7%	133	2.7%	109	0.4%
Unknown	7,430	33.0%	47,243	36.2%	229	3.1%	208	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-175 Number of Tenants in Structure, Elizabethtown Non-Residential

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	3,175	14.1%	20,719	15.9%	76	2.4%	181	0.9%
2 to 5	18.6%	3,906	17.3%	26,271	20.1%	131	3.4%	62	0.2%
6 to 10	2.4%	925	4.1%	2,616	2.0%	19	2.1%	6	0.2%
11 to 20	1.0%	779	3.5%	3,614	2.8%	18	2.3%	9	0.3%
>20	0.4%	578	2.6%	2,247	1.7%	5	0.9%	0	0.0%
Unknown	0.0%	13,166	58.4%	75,115	57.5%	351	2.7%	285	0.4%
Total⁴²	97.0%	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

⁴² "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-176 Woman/Minority Owned Status, Elizabethtown Non-Residential

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman business owner	73	0.3%	390	0.3%	5	6.9%	1	0.2%
Minority business owner	1,198	5.3%	3,406	2.6%	12	1.0%	4	0.1%
Woman-minority business owner	27	0.1%	62	0.1%	4	14.8%	0	0.0%
Not woman or minority business owner	2,152	9.6%	7,712	5.9%	25	1.2%	15	0.2%
Unknown	19,079	84.7%	119,013	91.1%	554	2.9%	524	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%

Table 5-177 Primary Language at Business, Elizabethtown Non-Residential

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	791	3.5%	2,294	1.8%	6	0.8%	1	0.1%
Limited English	374	1.7%	1,004	0.8%	4	1.1%	3	0.3%
Unknown	21,364	94.8%	127,285	97.5%	590	2.8%	540	0.4%
Total	22,529	100.0%	130,583	100.0%	600	2.7%	544	0.4%



5.8 Jersey Central Power & Light

5.8.1 Key Findings and Recommendations

5.8.1.1 Residential Key Findings JCPL

Table 5-178 lists the statewide residential electric programs and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. The remaining programs are for the general population.

Table 5-179 presents the results of the residential participation analysis for JCPL for key population subgroups. These subgroups include low and moderate income, renters, and customers whose primary language is not English.

Table 5-178 Programs and Barriers: JCPL Residential


Organi zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – COOLAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■	■	■ ■	■	■ ■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-179 Barriers to Participation: JCP&L Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁴³	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	32%	6.2%	8.6%	Yes
Moderate income (250% to 400% FPL)		19%	7.4%	8.6%	Yes
Multi-family	Split incentives, complex buying process	13%	12.7%	6.9%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	9%	5.8%	8.1%	Yes
Renters	Split incentives	17%	8.3%	7.5%	No
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	1%	5.2%	7.6%	Yes
Hispanic households	Non-minority culture groups	9%	6.3%	7.6%	Yes
Younger households	Head of household 30 to 65	5%	8.1%	8.0%	No
Lower consuming households	2nd to 5th quintiles	15%	5.4%	6.9%	Yes
Smaller homes	1500+ sq ft	36%	6.6%	9.5%	Yes

⁴³Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).



Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics for JCPL.

Limited Income Households

Low- and moderate-income households are critical segments. The participation analysis indicated barriers for low-income and moderate-income customers households for JCPL. Even with Comfort Partners, barriers remain in low-income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis shows lower participation for renters overall in the state, but these patterns were not seen for JCPL. Multi-family units also did not exhibit lower participation rates, for JCPL or statewide.

Limited English

Limited English exacerbates lack of awareness of program availability and benefits of energy efficiency and as makes participation more challenging. Primary language in the household is identified for only a small fraction of households in the data base. The available data do indicate lower participation rates for households with a primary language other than English for JCPL as well as statewide.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities for JCPL as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tended to have lower participation rates, but this pattern was not evident for JCPL.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for JCPL. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

5.8.1.2 Residential Recommendations JCPL

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.

2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. For moderate-income customers, consider specific initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches, such as the weatherization programs offered to moderate-income customers by ETG and SJG. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
6. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.8.1.3 Non-Residential Key Findings JCPL

Table 5-180 lists the programs for non-residential JCPL customers and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-181 presents key results of the commercial participation analysis and Table 5-182 presents the industrial participation analysis by customer category. The data indicate that commercial and industrial small businesses participate at a relatively low rate. Health care customers were found to participate at lower rates in the commercial but not the industrial sector.

Table 5-180 Programs and Barriers: JCPL Non-Residential

Organi- zation	Program Name	Barriers						Bureau- cratic
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Combined Heat & Power (CHP) - Fuel Cell	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-181 Barriers to Participation: JCPL Commercial

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	97%	3.6%	17.6%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	7%	4.4%	3.1%	No
Multi-tenant	Split incentives, complex buying process	76%	4.9%	5.1%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	27%	5.5%	4.3%	No
Health care		13%	2.8%	4.3%	Yes

Table 5-182 Barriers to Participation: JCPL Industrial

Subpopulation		Participation Rate		Subpopulation Barrier(s) Indicated?	
Description	Common barriers affecting	Relative size	Subpopulation		Rest of Pop.
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	80%	3.5%	11.9%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	6%	0.0%	0.0%	Yes
Multi-tenant	Split incentives, complex buying process	66%	8.0%	7.7%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	18%	10.2%	6.2%	No
Health care		3%	6.8%	6.2%	No

Table 5-183 provides participation rate analysis for additional customer categories. Additional commercial and industrial categories with lower participation rates were customers with smaller facilities, fewer employees, and single locations. Industrial customers that had newer business also had relatively low participation rates. Industrial customers also had relatively lower rates for newer businesses, although this was based on a small number of participants with data. In addition to increasing with facility size and number of employees, JCPL commercial and industrial participation rates also steadily increased from higher to lower consumption quintiles and demand tiers, although population savings rates decreased with increasing consumption and demand.

Table 5-183 Additional Participation Analysis: JCPL Commercial and Industrial⁴⁴

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	53%	4.4%	4.9%	N
Minority/women-owned	21%	3.0%	2.9%	N
Minority-owned	18%	3.1%	2.9%	N
Smaller floorspace facilities (<5,000 sq ft)	78%	3.7%	8.3%	Y
Fewer employees (<20)	90%	3.9%	10.8%	Y
Single-location customers	92%	4.4%	7.2%	Y
Industrial				
Newer business (later than 2010)	44%	5.8%	7.8%	Y
Minority/women-owned	6%	Insufficient data.		
Minority-owned	6%			
Smaller floorspace facilities (<5,000 sq ft)	46%	3.9%	9.2%	Y
Fewer employees (<20)	74%	4.9%	11.7%	Y
Single-location customers	93%	6.8%	8.8%	Y

⁴⁴ Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

5.8.1.4 Non-Residential Recommendations JCPL

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for non-residential JCPL customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for newer business owners, particularly for JCPL industrial customers, and small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small and starting companies.
3. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
4. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
5. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
6. Create measure buckets targeted to the different NAICs classifications with lower participation rates indicated in the detailed metrics tables. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
7. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
8. High-consuming electric commercial and industrial JCPL customers have been active participants but have relatively low population savings for electric measures. Further analysis should be conducted to determine if and how electricity measures could be expanded for high consumption participants.

5.8.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-184 Home Heating Fuel, JCPL Residential⁴⁵

Heating Fuel	ACS Distribution
Utility gas	70.1%
Bottled, tank, or LP gas	2.5%
Electricity	11.7%
Fuel oil, kerosene, etc.	14.1%
Coal or coke	0.1%
Wood	0.8%
Solar energy	0.1%
Other fuel	0.5%
No fuel used	0.3%
Total	100%

Table 5-185 Square Footage of Home, JCP&L Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<500	709	0.1%	3,843	0.0%	34	4.8%	6	0.2%
500 to 999	36,138	3.1%	245,774	2.5%	2,171	6.0%	557	0.2%
1,000 to 1,499	118,702	10.3%	948,484	9.5%	8,045	6.8%	2,548	0.3%
1,500 to 1,999	111,873	9.7%	1,031,812	10.3%	9,603	8.6%	2,664	0.3%
2,000 to 2,499	72,095	6.2%	783,923	7.8%	7,205	10.0%	2,029	0.3%
2,500 to 2,999	40,147	3.5%	503,834	5.0%	4,134	10.3%	1,183	0.2%
3,000 to 3,999	34,228	3.0%	506,824	5.1%	3,719	10.9%	1,116	0.2%
>=4,000	17,194	1.5%	346,072	3.5%	1,605	9.3%	432	0.1%
Unknown	724,374	62.7%	5,623,631	56.3%	40,579	5.6%	9,656	0.2%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

⁴⁵ The table lists the percent of households in block groups that receive electricity from JCPL. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-186 Type of Home, JCP&L Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	807,994	69.9%	7,783,710	77.9%	55,753	6.9%	17,312	0.2%
Multifamily	116,055	10.0%	557,097	5.6%	14,796	12.8%	911	0.2%
Mobile home	1,050	0.1%	7,395	0.1%	228	21.7%	9	0.1%
Group home	1,664	0.1%	5,963	0.1%	14	0.8%	2	0.0%
Unknown	228,697	19.8%	1,640,030	16.4%	6,304	2.8%	1,955	0.1%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-187 Household Income Status, JCP&L Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	292,347	25.3%	2,105,183	21.1%	18,160	6.2%	4,865	0.2%
251 - 400% FPL	179,817	15.6%	1,514,302	15.2%	13,390	7.5%	3,268	0.2%
>400% FPL	454,603	39.3%	4,734,780	47.4%	39,241	8.6%	10,100	0.2%
Unknown	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-188 Household Cultural Group, JCP&L Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
African American	11,888	1.0%	87,157	0.9%	618	5.2%	156	0.2%
Central and Southwest Asian	1,817	0.2%	16,927	0.2%	146	8.0%	27	0.2%
Eastern European	61,905	5.4%	553,807	5.5%	4,828	7.8%	1,373	0.3%
Far Eastern	20,888	1.8%	156,274	1.6%	2,028	9.7%	433	0.3%
Hispanic	77,895	6.7%	632,249	6.3%	4,872	6.3%	1,246	0.2%
Middle Eastern	10,526	0.9%	89,917	0.9%	879	8.4%	221	0.3%
Jewish	45,395	3.9%	471,476	4.7%	4,755	10.5%	1,064	0.2%
Mediterranean	153,392	13.3%	1,433,596	14.3%	11,956	7.8%	3,290	0.2%
Native American	317	0.0%	2,790	0.0%	25	7.9%	13	0.5%
Pacific Islander	2,910	0.3%	25,035	0.3%	217	7.5%	54	0.2%
Scandinavian	14,870	1.3%	136,946	1.4%	1,070	7.2%	294	0.2%
South Asian	18,189	1.6%	137,366	1.4%	2,232	12.3%	437	0.3%
Western European	435,003	37.7%	3,966,255	39.7%	31,605	7.3%	8,170	0.2%
Unknown	300,396	26.0%	2,283,862	22.9%	11,856	4.0%	3,410	0.2%
Masked Categories	69	0.0%	537	0.0%	8	11.6%	1	0.2%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-189 Head of Household Age, JCP&L Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	14,173	1.2%	84,359	0.8%	1,040	7.3%	132	0.2%
25 to 29	32,518	2.8%	200,644	2.0%	2,744	8.4%	417	0.2%
30 to 34	52,667	4.6%	368,689	3.7%	4,394	8.3%	904	0.3%
35 to 44	130,714	11.3%	1,110,825	11.1%	11,071	8.5%	2,616	0.2%
45 to 54	172,386	14.9%	1,744,900	17.5%	13,537	7.9%	3,357	0.2%
55 to 64	211,407	18.3%	2,057,588	20.6%	16,404	7.8%	4,326	0.2%
65 and over	312,902	27.1%	2,787,260	27.9%	21,601	6.9%	6,482	0.2%
Unknown	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-190 Home Rate Code, JCP&L Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
JC_GS1_01F	170	0.0%	1,649	0.0%	5	2.9%	1	0.1%
JC_OLS_01D	1,478	0.1%	1,042	0.0%	48	3.3%	12	1.1%
JC_RGT_01D	573	0.1%	16,924	0.2%	60	10.5%	66	0.4%
JC_RS_01D	1,039,945	90.0%	8,616,886	86.2%	69,193	6.7%	17,262	0.2%
JC_RS_02D	2,684	0.2%	50,340	0.5%	99	3.7%	31	0.1%
JC_RS_03D	3,753	0.3%	68,798	0.7%	140	3.7%	44	0.1%
JC_RS_05D	91,361	7.9%	1,011,413	10.1%	6,485	7.1%	2,344	0.2%
JC_RS_07D	209	0.0%	6,473	0.1%	11	5.3%	6	0.1%
JC_RT_01D	9,395	0.8%	121,745	1.2%	667	7.1%	196	0.2%
JC_RT_03D	5,124	0.4%	81,967	0.8%	329	6.4%	187	0.2%
JC_RT_05D	337	0.0%	10,302	0.1%	35	10.4%	30	0.3%
Masked Categories	431	0.0%	6,652	0.1%	23	5.3%	11	0.2%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-191 LEED Certification, JCP&L Residential

Table has been removed to protect confidentiality.

Table 5-192 Electric Consumption, JCP&L Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	175,739	15.2%	131,149	1.3%	9,478	5.4%	1,629	1.2%
Second Quintile (20-39)	172,592	14.9%	540,721	5.4%	10,344	6.0%	2,012	0.4%
Third Quintile (40-59)	206,983	17.9%	1,141,582	11.4%	12,999	6.3%	3,198	0.3%
Fourth Quintile (60-79)	248,815	21.5%	2,116,883	21.2%	17,843	7.2%	4,923	0.2%
Fifth Quintile (80-100)	351,235	30.4%	6,063,860	60.7%	26,428	7.5%	8,427	0.1%
Unknown	96	0.0%	0	0.0%	3	3.1%	1	0.0%
Total	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-193 Primary Language at Home, JCP&L Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	96.5%	119,048	10.3%	966,791	9.7%	9,604	8.1%	2,280	0.2%
Limited English	3.5%	12,319	1.1%	81,738	0.8%	715	5.8%	123	0.2%
Unknown	0.0%	1,024,093	88.6%	8,945,666	89.5%	66,776	6.5%	17,787	0.2%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-194 Household Income, JCP&L Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	8.6%	108,155	9.4%	668,251	6.7%	6,570	6.1%	1,726	0.3%
\$20,000 to \$29,999	6.5%	77,184	6.7%	512,740	5.1%	4,646	6.0%	1,147	0.2%
\$30,000 to \$39,999	6.2%	66,976	5.8%	462,964	4.6%	4,361	6.5%	1,039	0.2%
\$40,000 to \$49,999	5.7%	64,755	5.6%	469,682	4.7%	4,516	7.0%	971	0.2%
\$50,000 to \$59,999	5.8%	57,283	5.0%	432,680	4.3%	3,751	6.6%	884	0.2%
\$60,000 to \$99,999	20.3%	192,945	16.7%	1,591,632	15.9%	13,345	6.9%	3,405	0.2%
\$100,000 to \$124,999	10.6%	89,733	7.8%	846,035	8.5%	7,346	8.2%	2,011	0.2%
\$125,000 to \$149,999	8.1%	71,353	6.2%	735,072	7.4%	6,221	8.7%	1,655	0.2%
\$150,000 to \$199,999	11.4%	87,802	7.6%	997,722	10.0%	8,578	9.8%	2,374	0.2%
>=\$200,000	16.8%	110,581	9.6%	1,637,487	16.4%	11,457	10.4%	3,022	0.2%
Unknown	0.0%	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-195 Home Built, JCP&L Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1939 or earlier	11.7%	68,860	6.0%	654,057	6.5%	3,691	5.4%	957	0.2%
1940 to 1949	4.5%	31,133	2.7%	281,081	2.8%	1,845	5.9%	447	0.2%
1950 to 1959	12.9%	112,766	9.8%	1,049,720	10.5%	7,299	6.5%	1,961	0.2%
1960 to 1969	14.6%	147,765	12.8%	1,432,836	14.3%	10,658	7.2%	3,156	0.2%
1970 to 1979	15.7%	145,407	12.6%	1,531,040	15.3%	10,994	7.6%	3,916	0.3%
1980 to 1989	15.4%	146,798	12.7%	1,371,520	13.7%	11,907	8.1%	3,538	0.3%
1990 to 1999	12.8%	82,860	7.2%	849,900	8.5%	7,963	9.6%	2,188	0.3%
2000 to 2009	10.4%	25,841	2.2%	299,164	3.0%	2,607	10.1%	554	0.2%
2010 to 2013	1.5%	2,331	0.2%	30,545	0.3%	142	6.1%	13	0.0%
>=2014	0.6%	163,006	14.1%	854,401	8.6%	13,685	8.4%	1,503	0.2%
Unknown	0.0%	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-196 Number of Household Members, JCP&L Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
0	0.0%	4,643	0.4%	26,088	0.3%	384	8.3%	61	0.2%
1	25.1%	318,319	27.6%	2,100,124	21.0%	22,071	6.9%	4,780	0.2%
2	32.8%	189,767	16.4%	1,640,217	16.4%	14,025	7.4%	3,693	0.2%
3	16.8%	120,899	10.5%	1,163,865	11.7%	8,836	7.3%	2,436	0.2%
4	15.7%	91,693	7.9%	967,526	9.7%	7,307	8.0%	2,034	0.2%
5	6.4%	74,056	6.4%	846,297	8.5%	6,331	8.6%	1,813	0.2%
6	2.0%	59,110	5.1%	721,687	7.2%	5,412	9.2%	1,546	0.2%
7	1.4%	42,270	3.7%	540,500	5.4%	3,877	9.2%	1,131	0.2%
8	0.0%	26,010	2.3%	347,959	3.5%	2,548	9.8%	741	0.2%
Unknown	0.0%	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-197 Home Ownership Status, JCP&L Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	77.2%	766,525	66.3%	7,531,543	75.4%	57,462	7.5%	16,931	0.2%
Renter occupied	22.8%	160,242	13.9%	822,722	8.2%	13,329	8.3%	1,303	0.2%
Unknown	0.0%	228,693	19.8%	1,639,930	16.4%	6,304	2.8%	1,955	0.1%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

Table 5-198 Home Value, JCP&L Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<\$25,000	1.8%	601	0.1%	4,277	0.0%	35	5.8%	9	0.2%
\$25,000 to \$49,999	1.2%	2,963	0.3%	25,763	0.3%	120	4.1%	136	0.5%
\$50,000 to \$99,999	2.4%	14,672	1.3%	123,456	1.2%	534	3.6%	546	0.4%
\$100,000 to \$124,999	1.8%	13,962	1.2%	107,346	1.1%	560	4.0%	363	0.3%
\$125,000 to \$149,999	2.4%	21,525	1.9%	156,522	1.6%	998	4.6%	487	0.3%
\$150,000 to \$174,999	3.7%	25,317	2.2%	189,675	1.9%	1,176	4.7%	525	0.3%
\$175,000 to \$199,999	3.5%	31,944	2.8%	239,234	2.4%	1,575	4.9%	554	0.2%
\$200,000 to \$249,999	9.5%	83,774	7.3%	630,357	6.3%	4,619	5.5%	1,320	0.2%
\$250,000 to \$299,999	11.4%	101,083	8.8%	818,000	8.2%	6,114	6.1%	1,697	0.2%
\$300,000 to \$399,999	21.2%	188,780	16.3%	1,611,465	16.1%	13,422	7.1%	3,559	0.2%
\$400,000 to \$499,999	14.3%	130,496	11.3%	1,250,677	12.5%	11,308	8.7%	3,036	0.2%
\$500,000 to \$999,999	22.5%	186,550	16.2%	2,194,026	22.0%	18,255	9.8%	4,824	0.2%
>=\$1,000,000	4.2%	32,749	2.8%	628,590	6.3%	2,559	7.8%	530	0.1%
Unknown	0.0%	321,044	27.8%	2,014,807	20.2%	15,820	4.9%	2,603	0.1%
Total	100.0%	1,155,460	100.0%	9,994,195	100.0%	77,095	6.7%	20,189	0.2%

5.8.3 Commercial Metrics

All commercial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-199 Primary Language at Business, JCP&L Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	2,873	2.0%	157,841	1.2%	89	3.1%	1,836	1.2%
Limited English	228	0.2%	7,684	0.1%	10	4.4%	1	0.0%
Unknown	142,835	97.9%	13,094,104	98.8%	5,355	3.8%	177,078	1.4%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-200 Business Opened, JCP&L Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	9,030	6.2%	975,571	7.4%	605	6.7%	19,072	2.0%
1990 to 1999	8,847	6.1%	764,799	5.8%	369	4.2%	12,839	1.7%
2000 to 2009	16,999	11.7%	1,947,521	14.7%	734	4.3%	20,491	1.1%
2010 to 2013	16,236	11.1%	1,429,875	10.8%	657	4.1%	20,613	1.4%
2014 or later	23,040	15.8%	3,429,306	25.9%	1,075	4.7%	38,374	1.1%
Unknown	71,784	49.2%	4,712,556	35.5%	2,014	2.8%	67,526	1.4%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-201 Number of Employees, JCP&L Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	37,366	25.6%	3,102,981	23.4%	1,230	3.3%	29,015	0.9%
5 to 9	16,885	11.6%	1,526,158	11.5%	732	4.3%	18,556	1.2%
10 to 19	6,910	4.7%	1,006,213	7.6%	444	6.4%	15,299	1.5%
20 to 49	4,433	3.0%	968,830	7.3%	400	9.0%	15,777	1.6%
50 to 99	1,605	1.1%	592,243	4.5%	219	13.6%	11,350	1.9%
100 to 249	981	0.7%	602,469	4.5%	146	14.9%	11,648	1.9%
250 to 499	78	0.1%	126,094	1.0%	3	3.9%	9	0.0%
500+	44	0.0%	121,035	0.9%	6	13.6%	3,552	2.9%
Unknown	77,634	53.2%	5,213,604	39.3%	2,274	2.9%	73,709	1.4%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-202 Business Ownership Status, JCP&L Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	68,164	46.7%	6,720,547	50.7%	3,011	4.4%	81,121	1.2%
Branch	5,788	4.0%	1,568,883	11.8%	420	7.3%	26,928	1.7%
Headquarters	113	0.1%	69,187	0.5%	4	3.5%	348	0.5%
Subsidiary	87	0.1%	188,456	1.4%	5	5.8%	2,993	1.6%
Unknown	71,784	49.2%	4,712,556	35.5%	2,014	2.8%	67,526	1.4%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-203 Business Rate Code, JCP&L Commercial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
JC_CU_01F	215	0.2%	266,076	2.0%	1	0.5%	0	0.0%
JC_GP_01D	212	0.2%	1,847,231	13.9%	32	15.1%	8,079	0.4%
JC_GP_01F	72	0.1%	239,970	1.8%	8	11.1%	1,433	0.6%
JC_GS1_01D	21,790	14.9%	499,925	3.8%	931	4.3%	7,775	1.6%
JC_GS1_01F	51,212	35.1%	554,386	4.2%	1,311	2.6%	4,731	0.9%
JC_GS1_02D	50	0.0%	6,297	0.1%	2	4.0%	39	0.6%
JC_GS1_02F	51	0.0%	3,008	0.0%	4	7.8%	123	4.1%
JC_GS1_03D	83	0.1%	3,677	0.0%	4	4.8%	184	5.0%
JC_GS1_03F	133	0.1%	2,076	0.0%	2	1.5%	0	0.0%
JC_GS1_04D	1,081	0.7%	4,362	0.0%	2	0.2%	0	0.0%
JC_GS1_04F	1,033	0.7%	3,160	0.0%	1	0.1%	0	0.0%
JC_GS1_05D	21	0.0%	1,171	0.0%	0	0.0%	0	0.0%
JC_GS1_05F	43	0.0%	929	0.0%	1	2.3%	0	0.0%
JC_GS1_06D	41	0.0%	1,092	0.0%	4	9.8%	0	0.0%
JC_GS1_06F	77	0.1%	1,099	0.0%	4	5.2%	18	1.6%
JC_GS1_08D	124	0.1%	3,942	0.0%	8	6.5%	119	3.0%
JC_GS1_08F	460	0.3%	7,005	0.1%	10	2.2%	40	0.6%
JC_GS1_09F	19	0.0%	436	0.0%	1	5.3%	17	3.8%
JC_GS1_16D	3,232	2.2%	12,796	0.1%	20	0.6%	5	0.0%
JC_GS1_16F	796	0.6%	2,831	0.0%	4	0.5%	33	1.2%
JC_GS1_17D	16	0.0%	49	0.0%	0	0.0%	0	0.0%
JC_GS1F01D	613	0.4%	11,402	0.1%	0	0.0%	0	0.0%
JC_GS1F01F	439	0.3%	2,872	0.0%	2	0.5%	2	0.1%
JC_GS1F02F	25	0.0%	98	0.0%	0	0.0%	0	0.0%
JC_GS1G01D	112	0.1%	2,786	0.0%	0	0.0%	0	0.0%
JC_GS1G01F	213	0.2%	5,060	0.0%	3	1.4%	0	0.0%
JC_GS3_01D	17,823	12.2%	4,246,600	32.0%	1,441	8.1%	82,598	2.0%
JC_GS3_01F	34,923	23.9%	1,873,570	14.1%	904	2.6%	21,812	1.2%
JC_GS3_02D	690	0.5%	532,291	4.0%	99	14.4%	6,599	1.2%
JC_GS3_02F	495	0.3%	101,698	0.8%	23	4.7%	1,059	1.0%
JC_GS3_03D	187	0.1%	66,944	0.5%	20	10.7%	999	1.5%
JC_GS3_03F	184	0.1%	18,812	0.1%	9	4.9%	233	1.2%
JC_GS3_08D	180	0.1%	25,720	0.2%	23	12.8%	1,521	5.9%
JC_GS3_08F	258	0.2%	16,821	0.1%	18	7.0%	410	2.4%
JC_GS3_09D	84	0.1%	12,030	0.1%	14	16.7%	620	5.2%
JC_GS3_09F	122	0.1%	7,725	0.1%	10	8.2%	570	7.4%

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
JC_GS3_13D	32	0.0%	14,822	0.1%	5	15.6%	208	1.4%
JC_GS3_16F	55	0.0%	42	0.0%	0	0.0%	0	0.0%
JC_GS3F01D	204	0.1%	113,795	0.9%	1	0.5%	111	0.1%
JC_GS3F01F	61	0.0%	4,882	0.0%	0	0.0%	0	0.0%
JC_GS3G01D	143	0.1%	45,771	0.4%	0	0.0%	0	0.0%
JC_GS3G01F	206	0.1%	16,247	0.1%	1	0.5%	17	0.1%
JC_GST_01D	139	0.1%	601,878	4.5%	35	25.2%	7,809	1.3%
JC_GST_01F	48	0.0%	112,744	0.9%	3	6.3%	633	0.6%
JC_GT_01D	74	0.1%	1,402,933	10.6%	12	16.2%	15,919	1.1%
JC_GT_01F	23	0.0%	140,056	1.1%	3	13.0%	347	0.3%
JC_OLS_01D	955	0.7%	2,439	0.0%	49	5.1%	594	24.4%
JC_OLS_02D	6,082	4.2%	19,940	0.2%	381	6.3%	11,754	HIGH
JC_OLS_03D	36	0.0%	850	0.0%	0	0.0%	0	0.0%
JC_OLSF02D	23	0.0%	77	0.0%	0	0.0%	0	0.0%
JC_OLSG02D	83	0.1%	615	0.0%	1	1.2%	17	2.8%
JC_RS_01D	154	0.1%	671	0.0%	7	4.6%	2	0.3%
JC_SREC_01	208	0.1%	45,901	0.4%	31	14.9%	2,098	4.6%
JC_SVW_01D	60	0.0%	431	0.0%	0	0.0%	0	0.0%
Masked Categories	241	0.1%	349,586	2.6%	9	3.7%	387	0.1%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-204 LEED Certification, JCP&L Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Gold or Platinum	12	0.0%	40,639	0.3%	6	50.0%	700	1.7%
Silver	19	0.0%	70,963	0.5%	3	15.8%	281	0.4%
Certified	24	0.0%	37,881	0.3%	4	16.7%	3,802	10.0%
Incomplete	24	0.0%	72,310	0.6%	5	20.8%	506	0.7%
Not Certified	145,857	100.0%	13,037,835	98.3%	5,436	3.7%	173,627	1.3%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-205 Electric Consumption, JCP&L Commercial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	27,466	18.8%	12,208	0.1%	588	2.1%	4,142	33.9%
Second Quintile (20-39)	29,260	20.1%	84,407	0.6%	891	3.1%	6,611	7.8%
Third Quintile (40-59)	28,343	19.4%	209,144	1.6%	801	2.8%	7,843	3.8%
Fourth Quintile (60-79)	29,564	20.3%	607,594	4.6%	856	2.9%	9,569	1.6%
Fifth Quintile (80-100)	31,293	21.4%	12,346,277	93.1%	2,317	7.4%	150,747	1.2%
Unknown	10	0.0%	0	0.0%	1	10.0%	3	0.0%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-206 Electric Demand, JCP&L Commercial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<= 100 kw	83,534	57.2%	3,130,354	23.6%	2,750	3.3%	48,922	1.6%
101 to 200 kw	3,127	2.1%	1,096,602	8.3%	379	12.1%	23,765	2.2%
201 to 399 kw	1,608	1.1%	1,261,982	9.5%	249	15.5%	17,312	1.4%
>= 400 kw	1,465	1.0%	7,270,334	54.8%	291	19.9%	71,174	1.0%
Unknown	56,202	38.5%	500,356	3.8%	1,785	3.2%	17,743	3.6%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-207 Woman/Minority Owned Status, JCP&L Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	569	0.4%	38,743	0.3%	15	2.6%	481	1.2%
Minority business owner	3,050	2.1%	151,952	1.2%	95	3.1%	1,627	1.1%
Woman-minority business owner	87	0.1%	11,735	0.1%	2	2.3%	121	1.0%
Not woman or minority business owner	13,630	9.3%	523,955	4.0%	391	2.9%	6,601	1.3%
Unknown	128,600	88.1%	12,533,243	94.5%	4,951	3.9%	170,084	1.4%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-208 Number of Tenants in Structure, JCP&L Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	11,323	7.8%	1,711,541	12.9%	582	5.1%	23,977	1.4%
2 to 5	18.6%	18,177	12.5%	2,724,035	20.5%	928	5.1%	38,879	1.4%
6 to 10	2.4%	6,142	4.2%	638,779	4.8%	281	4.6%	12,549	2.0%
11 to 20	1.0%	5,750	3.9%	630,254	4.8%	294	5.1%	8,762	1.4%
>20	0.4%	5,295	3.6%	995,574	7.5%	232	4.4%	8,936	0.9%
Unknown	0.0%	99,249	68.0%	6,559,445	49.5%	3,137	3.2%	85,813	1.3%
Total⁴⁶	97.0%	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

Table 5-209 Square Footage of Business, JCP&L Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	24,546	16.8%	1,171,750	8.8%	756	3.1%	17,403	1.5%
1,500 to 2,499	17,791	12.2%	1,570,111	11.8%	693	3.9%	12,818	0.8%
2,500 to 4,999	13,178	9.0%	1,685,243	12.7%	583	4.4%	14,711	0.9%
5,000 to 9,999	5,737	3.9%	596,657	4.5%	337	5.9%	6,209	1.0%
10,000 to 19,999	3,531	2.4%	766,175	5.8%	237	6.7%	9,437	1.2%
20,000 to 39,999	2,916	2.0%	480,668	3.6%	263	9.0%	8,587	1.8%
40,000 to 99,999	2,603	1.8%	873,324	6.6%	299	11.5%	12,383	1.4%
100,000 or more	1,266	0.9%	890,025	6.7%	201	15.9%	19,350	2.2%
Unknown	74,368	51.0%	5,225,675	39.4%	2,085	2.8%	78,018	1.5%
Total	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

⁴⁶ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-210 Two-digit NAICS Classification, JCP&L Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag & Forestry	0.3%	489	0.3%	24,985	0.2%	17	3.5%	162	0.7%
Mining	0.0%	38	0.0%	2,312	0.0%	0	0.0%	0	0.0%
Utilities	0.1%	91	0.1%	86,258	0.7%	3	3.3%	25	0.0%
Construction	10.4%	4,327	3.0%	279,323	2.1%	127	2.9%	3,182	1.1%
Manufacturing	0.0%	2,374	1.6%	425,423	3.2%	100	4.2%	4,128	1.0%
Wholesale Trade	3.5%	2,317	1.6%	368,185	2.8%	104	4.5%	5,303	1.4%
Retail Trade	0.0%	9,972	6.8%	1,081,017	8.2%	472	4.7%	17,033	1.6%
Transportation and Warehousing	0.0%	1,348	0.9%	107,983	0.8%	71	5.3%	863	0.8%
Information	1.9%	1,066	0.7%	274,339	2.1%	77	7.2%	5,278	1.9%
Finance and Insurance	4.7%	2,877	2.0%	414,772	3.1%	97	3.4%	6,234	1.5%
Real Estate	14.4%	3,477	2.4%	279,349	2.1%	276	7.9%	4,266	1.5%
Prof., Sci., & Tech.	19.8%	5,439	3.7%	650,238	4.9%	199	3.7%	2,743	0.4%
Management of Companies and Enterprises	0.0%	167	0.1%	14,193	0.1%	5	3.0%	117	0.8%
Admin, Support, & Waste Svcs.	7.9%	1,928	1.3%	193,070	1.5%	78	4.1%	1,031	0.5%
Educational Services	4.0%	2,648	1.8%	593,751	4.5%	448	16.9%	19,578	3.3%
Health Care and Social Assistance	10.7%	9,772	6.7%	1,667,919	12.6%	278	2.8%	17,761	1.1%
Arts, Ent. & Rec.	5.5%	2,046	1.4%	166,389	1.3%	65	3.2%	1,912	1.2%
Accommodation and Food Services	4.0%	6,935	4.8%	722,868	5.5%	272	3.9%	6,930	1.0%
Other Services	12.8%	9,217	6.3%	472,885	3.6%	376	4.1%	6,413	1.4%
Public Administration	0.0%	7,624	5.2%	721,816	5.4%	375	4.9%	8,430	1.2%
Unknown	0.0%	71,784	49.2%	4,712,556	35.5%	2,014	2.8%	67,526	1.4%
Total	100.0%	145,936	100.0%	13,259,628	100.0%	5,454	3.7%	178,915	1.4%

5.8.4 Industrial Metrics

All industrial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-211 Primary Language at Business, JCP&L Industrial

This table has been removed to protect confidentiality.

Table 5-212 Business Opened, JCP&L Industrial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	266	10.3%	2,353,777	42.8%	12	4.5%	981	0.0%
1990 to 1999	184	7.2%	170,518	3.1%	24	13.0%	420	0.3%
2000 to 2009	295	11.5%	577,216	10.5%	22	7.5%	1,872	0.3%
2010 to 2013	245	9.5%	457,104	8.3%	18	7.4%	1,949	0.4%
2014 or later	337	13.1%	656,638	11.9%	16	4.8%	1,867	0.3%
Unknown	1,245	48.4%	1,290,719	23.4%	31	2.5%	7,488	0.6%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-213 Number of Employees, JCP&L Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	404	15.7%	358,967	6.5%	11	2.7%	942	0.3%
5 to 9	281	10.9%	421,112	7.7%	23	8.2%	1,992	0.5%
10 to 19	184	7.2%	477,694	8.7%	9	4.9%	819	0.2%
20 to 49	192	7.5%	308,170	5.6%	32	16.7%	1,302	0.4%
50 to 99	72	2.8%	117,334	2.1%	4	5.6%	205	0.2%
100 to 249	43	1.7%	505,147	9.2%	0	0.0%	0	0.0%
250+	15	0.6%	1,854,046	33.7%	6	40.0%	1,072	0.1%
Unknown	1,381	53.7%	1,463,502	26.6%	38	2.8%	8,244	0.6%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-214 Business Ownership Status, JCP&L Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location or Headquarters	1,236	48.1%	3,748,159	68.1%	84	6.8%	5,548	0.2%
Branch	76	3.0%	362,503	6.6%	7	9.2%	1,370	0.4%
Subsidiary	15	0.6%	104,592	1.9%	1	6.7%	170	0.2%
Unknown	1,245	48.4%	1,290,719	23.4%	31	2.5%	7,488	0.6%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-215 Business Rate Code, JCP&L Industrial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
JC_GP_01D	92	3.6%	945,149	17.2%	12	13.0%	2,344	0.3%
JC_GP_01F	38	1.5%	91,786	1.7%	4	10.5%	237	0.3%
JC_GS1_01D	164	6.4%	2,615	0.1%	1	0.6%	7	0.3%
JC_GS1_01F	165	6.4%	1,838	0.0%	3	1.8%	0	0.0%
JC_GS1F01D	43	1.7%	548	0.0%	0	0.0%	0	0.0%
JC_GS1F01F	29	1.1%	177	0.0%	0	0.0%	0	0.0%
JC_GS3_01D	721	28.0%	246,454	4.5%	31	4.3%	2,306	0.9%
JC_GS3_01F	772	30.0%	107,777	2.0%	28	3.6%	756	0.7%
JC_GS3_02D	50	1.9%	46,817	0.9%	11	22.0%	654	1.4%
JC_GS3_02F	30	1.2%	21,301	0.4%	4	13.3%	267	1.3%
JC_GS3F01D	67	2.6%	16,141	0.3%	1	1.5%	1,197	7.4%
JC_GS3F01F	22	0.9%	4,153	0.1%	0	0.0%	0	0.0%
JC_GS3F02D	26	1.0%	12,420	0.2%	0	0.0%	0	0.0%
JC_GST_01D	16	0.6%	108,833	2.0%	3	18.8%	721	0.7%
JC_GT_01D	45	1.8%	1,083,788	19.7%	8	17.8%	4,655	0.4%
JC_OLS_02D	167	6.5%	527	0.0%	12	7.2%	1,045	HIGH
JC_OLSF02D	16	0.6%	29	0.0%	0	0.0%	0	0.0%
Masked Categories	109	4.3%	2,815,622	51.1%	5	4.6%	386	0.0%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-216 LEED Certification, JCP&L Industrial

This table has been removed to protect confidentiality.

Table 5-217 Electric Consumption, JCP&L Industrial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	428	16.6%	397	0.0%	12	2.8%	744	HIGH
Second Quintile (20-39)	377	14.7%	2,274	0.0%	10	2.7%	308	13.6%
Third Quintile (40-59)	420	16.3%	8,332	0.2%	8	1.9%	151	1.8%
Fourth Quintile (60-79)	557	21.7%	38,129	0.7%	17	3.1%	337	0.9%
Fifth Quintile (80-100)	789	30.7%	5,456,840	99.1%	76	9.6%	13,036	0.2%
Unknown	1	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-218 Electric Demand, JCP&L Industrial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	1,443	56.1%	86,270	1.6%	43	3.0%	2,454	2.8%
101 to 200 kw	224	8.7%	83,811	1.5%	16	7.1%	1,118	1.3%
201 to 399 kw	141	5.5%	123,023	2.2%	12	8.5%	987	0.8%
>=400 kw	263	10.2%	5,208,506	94.6%	36	13.7%	8,965	0.2%
Unknown	501	19.5%	4,363	0.1%	16	3.2%	1,052	24.1%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-219 Woman/Minority Owned Status, JCP&L Industrial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Minority business owner	15	0.6%	1,007	0.0%	0	0.0%	0	0.0%
Not woman or minority business owner	236	9.2%	40,774	0.7%	10	4.2%	399	1.0%
Unknown	2,305	89.6%	5,453,805	99.1%	112	4.9%	14,129	0.3%
Masked Categories	16	0.6%	10,386	0.2%	1	6.3%	48	0.5%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-220 Number of Tenants in Structure, JCP&L Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	274	10.7%	2,128,664	38.7%	21	7.7%	2,137	0.1%
2 to 5	18.6%	382	14.9%	1,071,953	19.5%	26	6.8%	2,577	0.2%
6 to 10	2.4%	73	2.8%	61,583	1.1%	3	4.1%	160	0.3%
11 to 20	1.0%	49	1.9%	6,872	0.1%	12	24.5%	0	0.0%
>20	0.4%	33	1.3%	32,844	0.6%	2	6.1%	52	0.2%
Unknown	0.0%	1,761	68.5%	2,204,057	40.0%	59	3.4%	9,650	0.4%
Total⁴⁷	97.0%	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

⁴⁷ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-221 Square Footage of Business, JCP&L Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	316	12.3%	358,050	6.5%	7	2.2%	639	0.2%
1,500 to 2,499	253	9.8%	246,022	4.5%	15	5.9%	1,786	0.7%
2,500 to 4,999	178	6.9%	321,973	5.9%	11	6.2%	602	0.2%
5,000 to 9,999	158	6.1%	226,302	4.1%	11	7.0%	1,138	0.5%
10,000 to 19,999	102	4.0%	250,258	4.6%	12	11.8%	560	0.2%
20,000 to 39,999	123	4.8%	312,324	5.7%	8	6.5%	498	0.2%
40,000 to 99,999	116	4.5%	512,549	9.3%	20	17.2%	784	0.2%
100,000 or more	71	2.8%	1,985,657	36.1%	8	11.3%	1,083	0.1%
Unknown	1,255	48.8%	1,292,838	23.5%	31	2.5%	7,488	0.6%
Total	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

Table 5-222 Two-digit NAICS Classification, JCP&L Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Utilities	0.1%	16	0.6%	33,447	0.6%	0	0.0%	0	0.0%
Construction	10.4%	121	4.7%	189,955	3.5%	6	5.0%	433	0.2%
Manufacturing	0.0%	310	12.1%	2,328,966	42.3%	22	7.1%	1,891	0.1%
Wholesale Trade	3.5%	127	4.9%	162,256	3.0%	7	5.5%	1,033	0.6%
Retail Trade	0.0%	137	5.3%	268,849	4.9%	3	2.2%	311	0.1%
Transportation and Warehousing	0.0%	26	1.0%	43,749	0.8%	1	3.9%	169	0.4%
Finance and Insurance	4.7%	19	0.7%	37,014	0.7%	0	0.0%	0	0.0%
Real Estate	14.4%	25	1.0%	35,837	0.7%	2	8.0%	59	0.2%
Prof., Sci., &	19.8%	94	3.7%	78,688	1.4%	6	6.4%	981	1.3%

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Tech.									
Admin, Support, & Waste Svcs.	7.9%	49	1.9%	28,341	0.5%	14	28.6%	147	0.5%
Educational Services	4.0%	15	0.6%	2,936	0.1%	6	40.0%	323	11.0%
Health Care and Social Assistance	10.7%	44	1.7%	152,477	2.8%	3	6.8%	411	0.3%
Arts, Ent. & Rec.	5.5%	39	1.5%	8,631	0.2%	1	2.6%	7	0.1%
Accommodation and Food Services	4.0%	18	0.7%	110,342	2.0%	0	0.0%	0	0.0%
Other Services	12.8%	76	3.0%	30,080	0.6%	4	5.3%	416	1.4%
Public Administration	0.0%	186	7.2%	668,857	12.2%	16	8.6%	873	0.1%
Unknown	0.0%	1,245	48.4%	1,290,719	23.4%	31	2.5%	7,488	0.6%
Masked Categories	2.2%	25	1.0%	34,828	0.6%	1	4.0%	34	0.1%
Total	100.0%	2,572	100.0%	5,505,973	100.0%	123	4.8%	14,576	0.3%

5.7 New Jersey Natural Gas

5.7.1 Key Findings and Recommendations

5.7.1.1 Residential Key Findings NJNG

Table 5-223 lists the statewide and utility residential gas programs and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners and the NJNG Food Bank Kits are designed to mitigate barriers for low-income households and Residential New Construction is for new builds. NJNG has additional programs targeted to moderate to low income customers. The remaining programs are for the general population.

Table 5-224 presents the residential participation analysis for NJNG for key population subgroups identified in the barriers analysis. These subgroups include low and moderate income, renters, and customers whose primary language is not English. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-223 Barriers to Participation: NJNG Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁴⁸	Subpopulation	Rest of Pop.	
Low income (\leq 250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	32%	6.4%	9.1%	Yes
Moderate income (250% to 400% FPL)		21%	7.2%	9.1%	Yes
Multi-family	Split incentives, complex buying process	7%	14.1%	7.3%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	13%	3.3%	8.3%	Yes
Renters	Split incentives	14%	9.7%	7.5%	No
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	2%	6.6%	7.9%	Yes
Hispanic households	Non-minority culture groups	9%	7.0%	7.9%	Yes
Younger households	Head of household 30 to 65	5%	11.3%	8.2%	No
Lower consuming households	2nd to 5th quintiles	16%	6.9%	7.8%	Yes
Smaller homes	1500+ sq ft	33%	5.7%	9.4%	Yes

⁴⁸Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-224 Programs and Barriers: NJNG Residential

Organi- zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■	■	■	■	■	■
BPU	Energy Efficient Products	■		■	■	■	■
BPU	Energy Efficient Products - Retail Products Platform	■		■	■	■	■
BPU	Home Performance with ENERGY STAR	■	■	■		■	■
BPU	WARMAvantage	■	■	■	■		■
BPU	New Construction	■	■	■	■	■	■
NJNG	Home Energy Assessment			■	■	■	■
NJNG	Market Place - Thermostats OBRP	■		■	■	■	■
NJNG	Combo Water Heater & Heat	■	■	■	■	■	■
NJNG	Boiler/Furnace	■	■	■	■	■	■
NJNG	RGGI 5 Furnace -Boiler Enhanced Rebate	■	■	■	■	■	■
NJNG	A/C if Coupled with Gas Appliance	■	■	■	■	■	■
NJNG	Power Vented Water Heater	■	■	■	■	■	■
NJNG	Tankless Water Heater	■	■	■	■	■	■
NJNG	Water Heater Rebate/Enhanced Rebate	■	■	■	■	■	■
NJNG	Non-Home Performance	■	■	■	■	■	■
NJNG	Moderate to Low Income Rebate Furnace/Boiler	■	■	■	■	■	■
NJNG	Moderate to Low Income Rebate Water Heater	■	■	■	■	■	■
NJNG	Food Bank Kits	■	■	■	■	■	■
NJNG	NJShares-PAGE No Cost Audit	■	■	■			■
NJNG	Behavioral			■	■	■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Low- and moderate-income households are critical segments. The participation analysis indicated barriers for low-income and moderate-income customers households for NJNG. Even with Comfort Partners, barriers remain in low-income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis shows lower participation for renters overall in the state, but these patterns were not seen for NJNG. Lower participation was also not observed for multi-family units in NJNG or statewide.

Limited English

Limited English exacerbates lack of awareness of program availability and benefits of energy efficiency and as makes participation more challenging. Primary language in the household is identified for only a small fraction of households in the data base. The available data do indicate lower participation rates for households with a primary language other than English for NJNG as well as statewide.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities for NJNG as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tend to have lower participation rates. However, this trend was not observed for NJNG.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for NJNG. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

Behavioral Programs

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in any other program. Accordingly, these programs are given special attention here. NJNG already delivers a behavioral program. As of mid-Q4 2019, NJNG had analyzed data for and communicated with over 275,000 treatment customers. NJNG's behavioral program is an important ongoing tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the NJNG

residential customer base. NJNG had a carve out for low-income in the Behavioral program and may be able to similarly target subpopulations it observes in the future participating at relatively low rates.

5.7.1.2 Residential Recommendations NJNG

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:


1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. Consider expanding NJNG's existing initiatives for moderate-income customers, perhaps by expanding the measures offered to moderate-income customers with greater rebates, looking for opportunities to streamline participation processes and/or taking a whole house approach.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
6. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest gas consumption levels.

5.7.1.3 Non-Residential Key Findings NJNG

Table 5-213 lists the programs for non-residential NJNG customers and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation. The statewide and NJNG Direct Install programs are designed to mitigate barriers for small and medium commercial and industrial customers as well as local government. The no-cost audit program is aimed at businesses with low consumption. The statewide Local Government program is designed to address barriers for municipalities. The New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-214 presents key results of the non-residential participation analysis by customer category. The data indicate that non-residential small businesses, health care and those with non-English primary language participate at a relatively low rate.

Table 5-227 provides participation rate analysis for additional customer categories. Other non-residential categories with lower participation rates were newer businesses, minority/women-owned businesses and customers with smaller facilities and fewer employees. In addition to increasing with facility size and number of employees, participation rates steadily increased from higher to lower consumption tiers. At the highest consumption tier for NJNG, population savings rates were lower than the average. In the statewide findings,



industrial but not commercial population savings rates were lower in the highest tier. While it is not discernible for NJNG as industrial is not broken out, industrial could be driving down population savings rates in the highest tier for NJNG.

Table 5-225 Programs and Barriers: NJNG Non-Residential

Organi- zation	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureau- cratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Large Energy Users Program	■ ■	■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
NJNG	Engineered Solutions	■	■	■ ■		■ ■	■ ■	■
NJNG	Commercial Direct Install	■	■	■ ■		■	■ ■	■
NJNG	Commercial Smart Start	■ ■	■	■ ■		■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-226 Barriers to Participation: NJNG Non-Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	89%	2.7%	7.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	9%	0.9%	1.3%	Yes
Multi-tenant	Split incentives, complex buying process	78%	3.5%	2.8%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	26%	3.4%	3.0%	No
Health care		13%	1.6%	3.0%	Yes

Table 5-227 Additional Participation Analysis: NJNG Non-Residential⁴⁹


Subpopulation	Subpop. Relative Size	Subpop. Participation Rate	Rest of Pop. Participation Rate	Lower Participation Rate for Subpop.?
Newer business (later than 2010)	58%	2.4%	3.9%	Y
Minority/women-owned	24%	1.6%	1.9%	Y
Minority-owned	20%	1.3%	1.9%	Y
Smaller facilities (<5,000 sq ft)	75%	2.4%	5.4%	Y
Fewer employees (<20)	89%	2.7%	7.3%	Y
Single-location customers	90%	3.1%	3.0%	N

5.7.1.4 Non-Residential Recommendations NJNG

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for businesses with non-English primary language, explore providing more outreach materials in Spanish and other languages. Even businesses with bilingual management that primarily use English might be more receptive to outreach in a native non-English language.
3. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
4. To mitigate lack of information for newer business owners and small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small and starting companies.
5. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
6. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
7. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
8. Create measure buckets targeted to the different NAICs classifications shown to have lower participation rates in the detailed metrics table. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
9. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure

⁴⁹ Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.



adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.

10. High-consuming gas customers had high participation rates, but population savings rates were somewhat lower in the highest tier. Based on statewide and utility results where the industrial sector was broken out, this trend may be driven by the industrial sector. Further analysis should be conducted to assess potential for added gas savings in the highest tier of consumption, particularly for industrial customers.

5.7.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-228 Home Heating Fuel, NJNG Residential⁵⁰

Heating Fuel	ACS Distribution
Utility gas	76.0%
Bottled, tank, or LP gas	1.4%
Electricity	12.1%
Fuel oil, kerosene, etc.	9.3%
Coal or coke	0.1%
Wood	0.4%
Solar energy	0.1%
Other fuel	0.4%
No fuel used	0.3%
Total	100%

Table 5-229 Square Footage of Home, NJNG Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<500	533	0.1%	214	0.0%	15	2.8%	1	0.4%
500 to 999	20,519	3.6%	11,464	2.4%	947	4.6%	51	0.4%
1,000 to 1,499	76,057	13.2%	55,044	11.3%	4,551	6.0%	336	0.6%
1,500 to 1,999	78,003	13.5%	68,366	14.0%	6,454	8.3%	435	0.6%
2,000 to 2,499	50,579	8.8%	52,440	10.8%	4,877	9.6%	313	0.6%
2,500 to 2,999	27,923	4.9%	33,162	6.8%	2,916	10.4%	188	0.6%
3,000 to 3,999	26,420	4.6%	36,764	7.5%	2,849	10.8%	186	0.5%
>=4,000	15,017	2.6%	27,165	5.6%	1,604	10.7%	114	0.4%
Unknown	281,227	48.8%	202,928	41.6%	19,357	6.9%	998	0.5%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

⁵⁰ The table lists the percent of households in block groups that receive gas from NJNG. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-230 Type of Home, NJNG Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single family	491,947	85.4%	447,128	91.7%	35,917	7.3%	2,414	0.5%
Multifamily	39,190	6.8%	17,755	3.6%	5,537	14.1%	109	0.6%
Mobile home	426	0.1%	160	0.0%	61	14.3%	3	2.0%
Group home	752	0.1%	238	0.1%	158	21.0%	0	0.0%
Unknown	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-231 Household Income Status, NJNG Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
250% FPL or less	171,236	29.7%	118,540	24.3%	10,876	6.4%	658	0.6%
251 - 400% FPL	111,965	19.4%	90,452	18.6%	8,116	7.3%	485	0.5%
>400% FPL	249,114	43.2%	256,289	52.6%	22,681	9.1%	1,383	0.5%
Unknown	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-232 Household Cultural Group, NJNG Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
African American	7,869	1.4%	6,122	1.3%	519	6.6%	27	0.4%
Central and Southwest Asian	1,051	0.2%	1,130	0.2%	70	6.7%	5	0.4%
Eastern European	33,092	5.7%	28,994	6.0%	2,581	7.8%	163	0.6%
Far Eastern	9,951	1.7%	9,488	2.0%	907	9.1%	47	0.5%
Hispanic	44,830	7.8%	35,504	7.3%	3,140	7.0%	178	0.5%
Middle Eastern	5,390	0.9%	5,531	1.1%	378	7.0%	27	0.5%
Jewish	30,363	5.3%	29,916	6.1%	3,355	11.1%	161	0.5%
Mediterranean	98,690	17.1%	89,518	18.4%	7,500	7.6%	491	0.6%
Native American	129	0.0%	121	0.0%	12	9.3%	1	0.7%
Pacific Islander	1,582	0.3%	1,401	0.3%	111	7.0%	9	0.6%
Scandinavian	8,463	1.5%	7,079	1.5%	609	7.2%	41	0.6%
South Asian	8,070	1.4%	9,110	1.9%	819	10.2%	50	0.6%
Western European	242,512	42.1%	205,914	42.2%	18,716	7.7%	1,153	0.6%
Unknown	84,248	14.6%	57,688	11.8%	4,848	5.8%	269	0.5%
Masked Categories	38	0.0%	30	0.0%	5	13.2%	0	0.0%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-233 Head of Household Age, NJNG Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
18 to 24	10,212	1.8%	4,964	1.0%	1,527	15.0%	55	1.1%
25 to 29	18,882	3.3%	11,061	2.3%	1,762	9.3%	72	0.7%
30 to 34	30,002	5.2%	20,773	4.3%	2,565	8.6%	133	0.6%
35 to 44	76,418	13.3%	61,115	12.5%	6,700	8.8%	359	0.6%
45 to 54	96,663	16.8%	90,571	18.6%	7,768	8.0%	477	0.5%
55 to 64	118,579	20.6%	109,020	22.4%	9,247	7.8%	555	0.5%
65 and over	181,559	31.5%	167,777	34.4%	12,104	6.7%	875	0.5%
Unknown	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-234 Home Rate Code, NJNG Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
001	13,300	2.3%	1,099	0.2%	657	4.9%	22	2.0%
001-GLOB	287	0.1%	1	0.0%	7	2.4%	0	17.2%
001RNN4G	847	0.2%	88	0.0%	16	1.9%	0	0.2%
003	502,955	87.3%	417,567	85.7%	38,852	7.7%	2,353	0.6%
003-GLOB	8,222	1.4%	4,898	1.0%	377	4.6%	10	0.2%
003RNN4G	22,290	3.9%	21,574	4.4%	1,315	5.9%	78	0.4%
003RNN4I	209	0.0%	206	0.0%	13	6.2%	0	0.1%
011	659	0.1%	84	0.0%	14	2.1%	1	1.0%
013	1,272	0.2%	621	0.1%	40	3.1%	2	0.4%
109	129	0.0%	77	0.0%	5	3.9%	0	0.4%
111	262	0.1%	135	0.0%	10	3.8%	1	0.6%
112	1,330	0.2%	456	0.1%	89	6.7%	1	0.3%
113	14,629	2.5%	23,598	4.8%	1,391	9.5%	91	0.4%
113-GLOB	103	0.0%	130	0.0%	7	6.8%	0	0.2%
113RNN4G	739	0.1%	1,254	0.3%	76	10.3%	5	0.4%
114	8,441	1.5%	14,943	3.1%	663	7.9%	53	0.4%
114RNN4G	294	0.1%	597	0.1%	27	9.2%	2	0.4%
Masked Categories	310	0.0%	216	0.0%	11	3.5%	1	0.5%
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-235 LEED Certification, NJNG Residential

This table has been removed to protect confidentiality.

Table 5-236 Gas Consumption, NJNG Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
First Quintile (0-19)	91,045	15.8%	9,432	1.9%	6,259	6.9%	189	2.0%
Second Quintile (20-39)	111,212	19.3%	51,557	10.6%	7,753	7.0%	523	1.0%
Third Quintile (40-59)	120,806	21.0%	93,297	19.1%	9,557	7.9%	738	0.8%
Fourth Quintile (60-79)	121,680	21.1%	129,324	26.5%	9,976	8.2%	641	0.5%
Fifth Quintile (80-100)	113,910	19.8%	203,936	41.8%	9,329	8.2%	517	0.3%
Unknown	17,625	3.1%	0	0.0%	696	4.0%	14	Inf
Total	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-237 Primary Language at Home, NJNG Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	96.6%	61,291	10.6%	54,388	11.2%	5,077	8.3%	302	0.6%
Limited English	3.4%	8,933	1.6%	7,088	1.5%	299	3.4%	10	0.2%
Unknown	0.0%	506,054	87.8%	426,071	87.4%	38,194	7.6%	2,309	0.5%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-238 Household Income, NJNG Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< \$20,000	9.8%	55,376	9.6%	33,161	6.8%	3,411	6.2%	182	0.6%
\$20,000 to \$29,999	7.4%	47,667	8.3%	29,781	6.1%	2,950	6.2%	175	0.6%
\$30,000 to \$39,999	6.9%	42,456	7.4%	28,048	5.8%	2,309	5.4%	148	0.5%
\$40,000 to \$49,999	6.3%	41,315	7.2%	29,296	6.0%	2,789	6.8%	178	0.6%
\$50,000 to \$59,999	6.2%	35,182	6.1%	26,252	5.4%	2,669	7.6%	137	0.5%
\$60,000 to \$99,999	21.1%	114,318	19.8%	93,170	19.1%	8,446	7.4%	508	0.6%
\$100,000 to \$124,999	10.5%	51,033	8.9%	46,955	9.6%	4,444	8.7%	261	0.6%
\$125,000 to \$149,999	7.9%	40,771	7.1%	41,221	8.5%	3,755	9.2%	247	0.6%
\$150,000 to \$199,999	10.4%	47,806	8.3%	54,114	11.1%	4,948	10.4%	298	0.6%
>=\$200,000	13.7%	56,391	9.8%	83,284	17.1%	5,952	10.6%	393	0.5%
Unknown	0.0%	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-239 Home Built, NJNG Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<=1939	9.9%	34,954	6.1%	35,114	7.2%	1,831	5.2%	100	0.3%
1940 to 1949	4.2%	15,219	2.6%	12,962	2.7%	847	5.6%	41	0.3%
1950 to 1959	12.1%	56,144	9.7%	49,291	10.1%	3,432	6.1%	214	0.4%
1960 to 1969	14.8%	79,867	13.9%	71,966	14.8%	5,517	6.9%	367	0.5%
1970 to 1979	16.8%	72,802	12.6%	64,195	13.2%	5,642	7.8%	394	0.6%
1980 to 1989	15.7%	83,107	14.4%	72,771	14.9%	6,116	7.4%	462	0.6%
1990 to 1999	12.7%	57,450	10.0%	59,445	12.2%	4,946	8.6%	316	0.5%
2000 to 2009	11.4%	45,303	7.9%	51,025	10.5%	4,657	10.3%	281	0.6%
2010 to 2013	1.6%	5,153	0.9%	4,882	1.0%	302	5.9%	12	0.2%
>=2014	0.9%	82,316	14.3%	43,630	9.0%	8,383	10.2%	339	0.8%
Unknown	0.0%	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-240 Number of Household Members, NJNG Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
0	0.0%	2,108	0.4%	1,356	0.3%	63	3.0%	5	0.4%
1	26.3%	180,664	31.4%	116,161	23.8%	12,944	7.2%	659	0.6%
2	32.8%	108,433	18.8%	93,326	19.1%	7,751	7.2%	527	0.6%
3	16.2%	69,175	12.0%	66,215	13.6%	5,284	7.6%	371	0.6%
4	14.7%	52,639	9.1%	53,836	11.0%	4,250	8.1%	271	0.5%
5	6.2%	43,097	7.5%	46,317	9.5%	3,899	9.1%	233	0.5%
6	2.1%	34,741	6.0%	38,866	8.0%	3,307	9.5%	216	0.6%
7	1.7%	25,175	4.4%	29,500	6.1%	2,483	9.9%	136	0.5%
8	0.0%	16,283	2.8%	19,705	4.0%	1,692	10.4%	108	0.6%
Unknown	0.0%	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-241 Home Ownership Status, NJNG Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Owner occupied	76.0%	456,156	79.2%	427,278	87.6%	34,253	7.5%	2,325	0.5%
Renter occupied	24.0%	76,159	13.2%	38,004	7.8%	7,420	9.7%	202	0.5%
Unknown	0.0%	43,963	7.6%	22,265	4.6%	1,897	4.3%	95	0.4%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

Table 5-242 Home Value, NJNG Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<\$25,000	2.0%	145	0.0%	85	0.0%	6	4.1%	1	0.6%
\$25,000 to \$49,999	1.6%	586	0.1%	310	0.1%	18	3.1%	2	0.7%
\$50,000 to \$99,999	2.7%	2,957	0.5%	1,471	0.3%	93	3.2%	10	0.7%
\$100,000 to \$124,999	1.9%	5,253	0.9%	3,106	0.6%	180	3.4%	21	0.7%
\$125,000 to \$149,999	2.7%	9,893	1.7%	6,244	1.3%	420	4.3%	62	1.0%
\$150,000 to \$174,999	4.1%	11,549	2.0%	6,838	1.4%	489	4.2%	59	0.9%
\$175,000 to \$199,999	3.7%	16,062	2.8%	9,798	2.0%	657	4.1%	53	0.5%
\$200,000 to \$249,999	10.4%	47,270	8.2%	31,554	6.5%	2,397	5.1%	206	0.7%
\$250,000 to \$299,999	12.4%	61,940	10.8%	44,556	9.1%	4,115	6.6%	268	0.6%
\$300,000 to \$399,999	22.3%	119,558	20.8%	96,739	19.8%	8,658	7.2%	556	0.6%
\$400,000 to \$499,999	14.0%	83,621	14.5%	78,009	16.0%	7,260	8.7%	405	0.5%
\$500,000 to \$999,999	19.3%	119,461	20.7%	137,907	28.3%	11,042	9.2%	698	0.5%
\$1,000,000 or more	3.0%	21,302	3.7%	36,747	7.5%	1,331	6.3%	97	0.3%
Unknown	0.0%	76,681	13.3%	34,182	7.0%	6,904	9.0%	186	0.5%
Total	100.0%	576,278	100.0%	487,546	100.0%	43,570	7.6%	2,622	0.5%

5.7.3 Non-Residential Metrics

Non-Residential data from NJNG is reported in this section. NJNG did not provided data divided into commercial and industrial. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-243 Primary Language at Business, NJNG Non-Residential

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	1,152	2.7%	2,890	0.8%	15	1.3%	6	0.2%
Limited English	115	0.3%	416	0.1%	1	0.9%	0	0.0%
Unknown	41,891	97.1%	364,798	99.1%	1,150	2.8%	2,000	0.6%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-244 Business Opened, NJNG Non-Residential

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	3,396	7.9%	23,460	6.4%	171	5.0%	652	2.8%
1990 to 1999	3,313	7.7%	17,214	4.7%	150	4.5%	131	0.8%
2000 to 2009	6,632	15.4%	190,134	51.7%	203	3.1%	316	0.2%
2010 to 2013	6,889	16.0%	27,343	7.4%	121	1.8%	120	0.4%
2014 or later	11,299	26.2%	54,569	14.8%	321	2.8%	469	0.9%
Unknown	11,629	27.0%	55,383	15.1%	200	1.7%	318	0.6%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-245 Number of Employees, NJNG Non-Residential

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	15,189	35.2%	66,894	18.2%	345	2.3%	668	1.0%
5 to 9	7,660	17.8%	29,132	7.9%	225	2.9%	100	0.3%
10 to 19	3,072	7.1%	17,023	4.6%	123	4.0%	141	0.8%
20 to 49	2,058	4.8%	161,652	43.9%	137	6.7%	221	0.1%
50 to 99	637	1.5%	11,793	3.2%	54	8.5%	226	1.9%
100 to 249	391	0.9%	15,846	4.3%	36	9.2%	266	1.7%
250+	63	0.1%	4,233	1.1%	2	3.2%	0	0.0%
Unknown	14,088	32.6%	61,532	16.7%	244	1.7%	383	0.6%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-246 Business Ownership Status, NJNG Non-Residential

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	28,443	65.9%	292,570	79.5%	872	3.1%	1,421	0.5%
Branch	3,030	7.0%	18,809	5.1%	92	3.0%	267	1.4%
Headquarters	26	0.1%	332	0.1%	2	7.7%	0	0.0%
Subsidiary	30	0.1%	1,010	0.3%	0	0.0%	0	0.0%
Unknown	11,629	27.0%	55,383	15.1%	200	1.7%	318	0.6%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-247 Business Rate Code, NJNG Non-Residential

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
004	1,255	2.9%	1,185	0.3%	27	2.2%	12	1.0%
004CNN2G	54	0.1%	1,349	0.4%	5	9.3%	42	3.2%
004CNN4G	67	0.2%	893	0.2%	4	6.0%	6	0.7%
004E	23	0.1%	4	0.0%	0	0.0%	0	0.0%
004M	178	0.4%	1,538	0.4%	5	2.8%	6	0.4%
004SNN2G	166	0.4%	99	0.0%	2	1.2%	1	0.8%
004SNN4G	187	0.4%	232	0.1%	6	3.2%	1	0.6%
004T	22	0.1%	68	0.0%	0	0.0%	0	0.0%
006	5,404	12.5%	7,318	2.0%	98	1.8%	35	0.5%

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
006CNN2	31	0.1%	446	0.1%	1	3.2%	1	0.2%
006CNN2G	372	0.9%	9,526	2.6%	29	7.8%	92	1.0%
006CNN2I	17	0.0%	418	0.1%	0	0.0%	0	0.0%
006CNN4G	608	1.4%	9,870	2.7%	47	7.7%	86	0.9%
006E	15	0.0%	32	0.0%	0	0.0%	0	0.0%
006M	1,721	4.0%	18,086	4.9%	59	3.4%	153	0.9%
006SNN2G	204	0.5%	422	0.1%	10	4.9%	0	0.1%
006SNN4G	865	2.0%	1,453	0.4%	24	2.8%	5	0.4%
006T	19	0.0%	388	0.1%	0	0.0%	0	0.0%
007	21,264	49.3%	19,122	5.2%	357	1.7%	78	0.4%
007CNN2E	55	0.1%	1,214	0.3%	0	0.0%	0	0.0%
007CNN2G	349	0.8%	6,298	1.7%	24	6.9%	27	0.4%
007CNN2I	22	0.1%	298	0.1%	0	0.0%	0	0.0%
007CNN4G	422	1.0%	5,429	1.5%	27	6.4%	61	1.1%
007E	56	0.1%	92	0.0%	0	0.0%	0	0.0%
007EM	44	0.1%	599	0.2%	0	0.0%	0	0.0%
007M	1,654	3.8%	17,778	4.8%	54	3.3%	77	0.4%
007SNN2E	96	0.2%	183	0.1%	1	1.0%	1	0.5%
007SNN2G	589	1.4%	1,094	0.3%	28	4.8%	8	0.7%
007SNN4G	2,843	6.6%	3,153	0.9%	67	2.4%	19	0.6%
007T	176	0.4%	3,400	0.9%	0	0.0%	0	0.0%
030	53	0.1%	77	0.0%	4	7.6%	0	0.0%
030M	15	0.0%	147	0.0%	0	0.0%	0	0.0%
053	57	0.1%	268	0.1%	3	5.3%	0	0.0%
053CNN2	25	0.1%	886	0.2%	1	4.0%	9	1.0%
053CNN2G	152	0.4%	3,203	0.9%	28	18.4%	11	0.4%
053CNN2I	32	0.1%	329	0.1%	0	0.0%	0	0.0%
053CNN4G	98	0.2%	1,482	0.4%	4	4.1%	1	0.1%
053M	201	0.5%	2,910	0.8%	14	7.0%	12	0.4%
053SNN2G	19	0.0%	273	0.1%	0	0.0%	0	0.0%
053SNN4G	30	0.1%	119	0.0%	0	0.0%	0	0.0%
053T	94	0.2%	2,750	0.8%	11	11.7%	13	0.5%
057	20	0.1%	51	0.0%	0	0.0%	0	0.0%
057CNN2G	247	0.6%	9,677	2.6%	69	27.9%	565	5.8%
057CNN4G	27	0.1%	758	0.2%	10	37.0%	40	5.3%
057M	105	0.2%	2,468	0.7%	24	22.9%	204	8.3%
204	314	0.7%	374	0.1%	8	2.6%	0	0.0%
204CNN2G	22	0.1%	287	0.1%	1	4.6%	4	1.5%

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
204CNN4G	92	0.2%	1,941	0.5%	1	1.1%	40	2.0%
204M	157	0.4%	1,568	0.4%	6	3.8%	0	0.0%
204SNN2G	29	0.1%	27	0.0%	1	3.5%	1	3.0%
204SNN4G	63	0.2%	85	0.0%	4	6.4%	0	0.0%
206	310	0.7%	556	0.2%	5	1.6%	2	0.3%
206CNN2G	57	0.1%	1,321	0.4%	2	3.5%	5	0.4%
206CNN4G	319	0.7%	4,544	1.2%	34	10.7%	84	1.9%
206M	449	1.0%	4,423	1.2%	7	1.6%	10	0.2%
206SNN4G	76	0.2%	173	0.1%	3	4.0%	1	0.6%
207	246	0.6%	348	0.1%	2	0.8%	0	0.1%
207CNN2G	18	0.0%	278	0.1%	0	0.0%	0	0.0%
207CNN4G	98	0.2%	1,166	0.3%	2	2.0%	0	0.0%
207M	219	0.5%	1,688	0.5%	4	1.8%	1	0.1%
207SNN4G	51	0.1%	95	0.0%	0	0.0%	0	0.0%
253	31	0.1%	152	0.0%	7	22.6%	1	0.7%
253SNN2G	31	0.1%	550	0.2%	0	0.0%	0	0.0%
253T	18	0.0%	289	0.1%	4	22.2%	4	1.5%
999	81	0.2%	0	0.0%	0	0.0%	0	Inf
Masked Categories	524	1.0%	210,857	57.3%	32	6.1%	283	0.1%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-248 LEED Certification, NJNG Non-Residential

This table has been removed to protect confidentiality.

Table 5-249 Gas Consumption, NJNG Non-Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,250 therms	22,152	51.3%	10,368	2.8%	354	1.6%	47	0.5%
1,250 to 4,999 therms	10,488	24.3%	26,352	7.2%	303	2.9%	139	0.5%
5,000 to 12,499 therms	4,387	10.2%	34,268	9.3%	190	4.3%	242	0.7%
12,500 to 39,999 therms	2,283	5.3%	48,711	13.2%	188	8.2%	623	1.3%
>=40,000 therms	717	1.7%	248,405	67.5%	83	11.6%	939	0.4%
Unknown	3,131	7.3%	0	0.0%	48	1.5%	15	Inf
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-250 Woman/Minority Owned Status, NJNG Non-Residential

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman business owner	265	0.6%	1,050	0.3%	8	3.0%	8	0.8%
Minority business owner	1,302	3.0%	3,441	0.9%	17	1.3%	4	0.1%
Woman-minority business owner	51	0.1%	153	0.0%	1	2.0%	3	2.2%
Not woman or minority business owner	5,057	11.7%	15,206	4.1%	98	1.9%	40	0.3%
Unknown	36,483	84.5%	348,254	94.6%	1,042	2.9%	1,950	0.6%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-251 Number of Tenants in Structure, NJNG Non-Residential

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	4,774	11.1%	178,530	48.5%	132	2.8%	492	0.3%
2 to 5	18.6%	7,950	18.4%	49,586	13.5%	279	3.5%	555	1.1%
6 to 10	2.4%	3,271	7.6%	11,665	3.2%	116	3.6%	71	0.6%
11 to 20	1.0%	2,996	6.9%	6,904	1.9%	101	3.4%	14	0.2%
>20	0.4%	2,965	6.9%	12,359	3.4%	105	3.5%	215	1.7%
Unknown	0.0%	21,202	49.1%	109,060	29.6%	433	2.0%	658	0.6%
Total⁵¹	97.0%	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

Table 5-252 Square Footage of Business, NJNG Non-Residential

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Less than 1,499	8,625	20.0%	35,053	9.5%	130	1.5%	233	0.7%
1,500 to 2,499	7,710	17.9%	33,763	9.2%	178	2.3%	205	0.6%
2,500 to 4,999	6,532	15.1%	24,036	6.5%	234	3.6%	132	0.6%
5,000 to 9,999	2,756	6.4%	10,794	2.9%	99	3.6%	232	2.2%
10,000 to 19,999	1,718	4.0%	12,516	3.4%	58	3.4%	49	0.4%
20,000 to 39,999	1,409	3.3%	9,344	2.5%	96	6.8%	203	2.2%
40,000 to 99,999	1,092	2.5%	164,421	44.7%	100	9.2%	234	0.1%
100,000 or more	517	1.2%	15,212	4.1%	55	10.6%	265	1.7%
Unknown	12,799	29.7%	62,964	17.1%	216	1.7%	452	0.7%
Total	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%

⁵¹ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-253 Two-digit NAICS Classification, NJNG Non-Residential

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Ag & Forestry	0.5%	43	0.1%	126	0.0%	1	2.3%	0	0.0%
Utilities & Mining	0.1%	42	0.1%	148,375	40.3%	0	0.0%	0	0.0%
Construction	11.2%	1,855	4.3%	12,682	3.5%	31	1.7%	99	0.8%
Manufacturing	0.0%	1,045	2.4%	10,549	2.9%	22	2.1%	4	0.0%
Wholesale Trade	3.4%	862	2.0%	5,093	1.4%	19	2.2%	15	0.3%
Retail Trade	0.0%	4,640	10.8%	13,252	3.6%	70	1.5%	50	0.4%
Transportation and Warehousing	0.0%	376	0.9%	4,320	1.2%	12	3.2%	-9	-0.2%
Information	1.8%	486	1.1%	2,535	0.7%	19	3.9%	23	0.9%
Finance and Insurance	5.4%	1,256	2.9%	2,907	0.8%	11	0.9%	2	0.1%
Real Estate	15.8%	1,659	3.8%	7,985	2.2%	90	5.4%	99	1.3%
Prof., Sci., & Tech.	19.7%	2,059	4.8%	6,429	1.8%	121	5.9%	18	0.3%
Management of Companies and Enterprises	0.0%	87	0.2%	7,906	2.2%	1	1.2%	0	0.0%
Admin, Support, & Waste Svcs.	7.5%	826	1.9%	4,830	1.3%	65	7.9%	173	3.6%
Educational Services	4.2%	870	2.0%	10,981	3.0%	118	13.6%	557	5.1%
Health Care and Social Assistance	9.9%	4,239	9.8%	22,456	6.1%	66	1.6%	221	1.0%
Arts, Ent. & Rec.	5.7%	908	2.1%	4,035	1.1%	36	4.0%	27	0.7%
Accommodation and Food Services	3.7%	3,501	8.1%	24,023	6.5%	76	2.2%	113	0.5%
Other Services	11.2%	3,641	8.4%	13,913	3.8%	115	3.2%	186	1.3%
Public Administration	0.0%	3,133	7.3%	10,323	2.8%	93	3.0%	109	1.1%
Unknown	0.0%	11,629	27.0%	55,383	15.1%	200	1.7%	318	0.6%
Total	100.0%	43,158	100.0%	368,104	100.0%	1,166	2.7%	2,006	0.5%



5.8 PSE&G Electric and Gas

5.8.1 Key Findings and Recommendations

5.8.1.1 Residential Key Findings PSE&G

Table 5-254 lists the statewide programs for residential customers (both electric and gas) and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. PSE&G also offers a multi-family program to property owners and managers of large residential properties that provides benefits to tenants without direct participation of the tenant. The remaining programs are for the general population.

For electric and gas, respectively, Table 5-255 and Table 5-256 present key results of the residential participation analysis for key subgroups identified in the barriers analysis. These subgroups include low and moderate income, renters, and customers whose primary language is not English. The lower portion of each table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-254 Programs and Barriers: PSE&G Electric and Gas Residential

Org.	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	HVAC WARMAdvantage			■	■		■ ■
BPU	New Construction	■ ■	■	■ ■		■ ■	■ ■
PSE&G	Smart Thermostats	■ ■		■ ■	■	■	■ ■
PSE&G	Behavioral			■	■	■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-255 Barriers to Participation: PSE&G Electric Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁵²	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	37%	5.1%	11.7%	Yes
Moderate income (250% to 400% FPL)		19%	7.3%	11.7%	Yes
Multi-family	Split incentives, complex buying process	32%	10.7%	7.4%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	40%	6.1%	10.7%	Yes
Renters	Split incentives	41%	7.5%	9.1%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	13%	4.7%	8.8%	Yes
Hispanic households	Non-minority culture groups	18%	5.5%	8.8%	Yes
Younger households	Head of household 30 to 65	9%	8.6%	8.8%	No
Lower consuming households	2nd to 5th quintiles	24%	5.4%	7.9%	Yes
Smaller homes	1500+ sq ft	39%	10.1%	11.4%	Yes

⁵²Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Table 5-256 Barriers to Participation: PSE&G Gas Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁵³	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	29%	5.4%	10.7%	Yes
Moderate income (250% to 400% FPL)		18%	7.5%	10.7%	Yes
Multi-family	Split incentives, complex buying process	17%	10.4%	8.2%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	31%	5.5%	11.0%	Yes
Renters	Split incentives	25%	7.2%	9.0%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	12%	4.9%	8.7%	Yes
Hispanic households	Non-minority culture groups	17%	6.0%	8.7%	Yes
Younger households	Head of household 30 to 65	7%	8.0%	9.1%	Yes
Lower consuming households	2nd to 5th quintiles	20%	6.4%	7.8%	Yes
Smaller homes	1500+ sq ft	32%	8.2%	10.9%	Yes

⁵³Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Limited Income Households

Low- and moderate-income households are critical segments in the PSE&G service territory, representing just over half of customers in the gas and in the electric demographic analysis, respectively. For both electric and gas measures, the participation analysis indicated dramatic barriers for low-income and less substantial but still meaningful barriers for moderate-income customers.

Renters and Multi-family Units

Renters are a smaller but still important market. There are a higher proportion of renters in PSE&G than in the state overall, at about 44% of electric and gas customers. This market typically has high barriers, with a particular barrier of split incentives. The analysis indicated high barriers do exist in the PSE&G service territories, with renters participating at about half the rate of owners for both electric and gas service territories. However, multi-family homes were not found to participate at lower rates for PSE&G electric or gas territories, nor statewide.

Limited English

Limited English exacerbates lack of awareness of program availability and benefits of energy efficiency and as makes participation more challenging. Primary language in the household is identified for only a small fraction of households in the data base. Like the state overall, the available data do indicate significantly lower participation rates for households with a primary language other than English for PSE&G electric and gas.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities for PSE&G electric and gas, as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: For PSE&G electric and gas, as well as statewide, households with younger heads of household tend to have lower participation rates. The difference was slight for PSE&G electric, and more pronounced for PSE&G gas.

Consumption level and home size: For PSE&G electric and gas, as well as statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

Behavioral Programs

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in any other program. Accordingly, these programs are given special attention here. PSE&G already delivers a behavioral

program. As of mid-Q4 2019, PSE&G had analyzed data for and communicated with over 420,000 treatment customers. PSE&G's behavioral program is an important ongoing tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the PSE&G residential customer base. PSE&G may choose to select treatment groups, and properly matched random control, within subpopulations it observes in the future participating at relatively low rates.

5.8.1.2 Residential Recommendations PSE&G

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including the utility, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. For moderate-income customers, consider specific initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches, such as the weatherization programs offered to moderate-income customers by ETG and SJG. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address split incentives for renters, offer free installation of low cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
6. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
7. Further explore lower participation rates by younger households and consider targeted initiatives and marketing.
8. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric and gas consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.8.1.3 Commercial and Industrial Key Findings PSE&G

Table 5-257 lists the programs for PSE&G commercial and industrial customers (both electric and gas) and indicates which barriers the programs are designed to mitigate as well as the barriers affecting these programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The statewide and PSE&G Direct Install programs are designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. PSE&G also offers programs targeted to hospitals and large multi-family customers. The remaining programs are for the general population.

Table 5-258 presents the results of the commercial participation analysis for electric and gas while Table 5-259 presents the industrial analysis for electric and gas. The tables indicate the non-residential customer categories shown to participate less in energy efficiency programs, thus indicating less access to energy efficiency. The commercial categories indicated to have less access to energy efficiency are small business, customers with limited English and, for gas only, Health Care. The industrial categories indicated to have less access to energy efficiency are small business, customers with limited English, Health Care and the broader group of institutional customers.

For electric and gas, respectively, Table 5-260 and Table 5-261, respectively provide participation rate analysis for additional electric and gas customer categories. For commercial and industrial electric and gas, additional categories with lower participation rates were customers with a single location, smaller facilities and fewer employees and, except for commercial gas, minority/women owned businesses. In addition to participation increasing with size of facility and employees, commercial and industrial participation rates also increased steadily with electric and gas consumption and with increasing demand. Population savings rates decline substantially with increasing electric consumption but are flat across gas consumption levels.

Table 5-257 Programs and Barriers: PSE&G Electric and Gas Non-Residential

Organization	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureau-cratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Combined Heat & Power (CHP) - Fuel Cell	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
PSE&G	Direct Install	■ ■		■ ■		■	■ ■	
PSE&G	Hospital	■	■	■ ■		■ ■	■ ■	■
PSE&G	Multi-Family	■ ■	■	■ ■	■ ■	■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-258 Barriers to Participation: PSE&G Commercial Electric and Gas

Subpopulation				Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Util. Type	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Elec	97%	3.3%	11.1%	Yes
		Gas	91%	3.7%	9.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	Elec	38%	1.6%	3.3%	Yes
		Gas	32%	1.3%	3.0%	Yes
Multi-tenant	Split incentives, complex buying process	Elec	70%	5.5%	3.7%	No
		Gas	70%	5.3%	3.8%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	Elec	25%	4.9%	4.2%	No
Health care		Gas	25%	4.5%	4.1%	No
		Elec	11%	3.8%	4.2%	No
Gas		11%	3.3%	4.1%	Yes	

Table 5-259 Barriers to Participation: PSE&G Industrial Electric and Gas

Subpopulation				Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Util. Type	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	Elec	88%	3.9%	11.8%	Yes
		Gas	85%	3.9%	7.8%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	Elec	40%	2.2%	5.3%	Yes
		Gas	39%	2.6%	4.6%	Yes
Multi-tenant	Split incentives, complex buying process	Elec	63%	7.4%	5.3%	No
		Gas	61%	5.9%	4.8%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	Elec	21%	4.0%	5.9%	Yes
Gas		21%	3.8%	4.8%	Yes	
Health care		Elec	8%	2.0%	5.9%	Yes
		Gas	8%	1.9%	4.8%	Yes

Table 5-260 Additional Participation Analysis: PSE&G Electric Commercial and Industrial⁵⁴

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	59%	4.2%	4.6%	N
Minority/women-owned	55%	2.4%	2.9%	Y
Minority-owned	53%	2.4%	2.9%	Y
Smaller floorspace facilities (<5,000 sq ft)	82%	3.5%	8.0%	Y
Fewer employees (<20)	92%	3.9%	9.2%	Y
Single-location customers	92%	4.1%	7.4%	Y
Industrial				
Newer business (later than 2010)	53%	5.6%	5.5%	N
Minority/women-owned	41%	3.1%	4.8%	Y
Minority-owned	39%	3.2%	4.8%	Y
Smaller floorspace facilities (<5,000 sq ft)	74%	3.9%	10.2%	Y
Fewer employees (<20)	86%	4.9%	9.8%	Y
Single-location customers	95%	5.3%	9.0%	Y

Table 5-261 Additional Participation Analysis: PSE&G Gas Commercial and Industrial⁵⁴

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	57%	3.9%	4.6%	Y
Minority/women-owned	49%	2.7%	2.9%	N
Minority-owned	46%	2.7%	2.9%	N
Smaller floorspace facilities (<5,000 sq ft)	81%	3.2%	8.5%	Y
Fewer employees (<20)	91%	3.7%	9.3%	Y
Single-location customers	91%	3.9%	7.5%	Y
Industrial				
Newer business (later than 2010)	53%	4.4%	4.8%	N
Minority/women-owned	40%	2.9%	4.6%	Y
Minority-owned	38%	3.0%	4.6%	Y
Smaller floorspace facilities (<5,000 sq ft)	73%	3.4%	7.8%	Y
Fewer employees (<20)	85%	3.9%	7.4%	Y
Single-location customers	94%	4.4%	6.5%	Y

⁵⁴ Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

5.8.1.4 Commercial and Industrial Recommendations PSE&G

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for non-residential PSE&G customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for businesses with non-English primary language, explore providing more outreach materials in Spanish and other languages. Even businesses with bilingual management that primarily use English might be more receptive to outreach in a native non-English language.
3. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
4. To mitigate lack of information for small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small companies.
5. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
6. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
7. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
8. Create measure buckets targeted to the different NAICs classifications with relatively low participation rates indicating high barriers. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process. PSE&G can build on the experience with its Hospital and Multi-family Programs as good examples of effective use of segment-targeted measures, delivery and messaging.
9. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
10. High-consuming electric commercial and industrial customers have been active participants but have relatively low population savings for electric measures. Further analysis should be conducted to determine if and how electricity measures could be expanded for high consumption participants.
11. High-consuming gas commercial customers also had high participation rates and high population savings rates. High-consuming industrial gas customers had low participation and population savings rates. Further analysis should be conducted to assess potential for added industrial gas savings in the highest consumption tier.

5.8.2 PSE&G Electric Metrics

5.8.2.1 Residential Metrics

All residential metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-262 Home Heating Type, PSE&G Electric Residential⁵⁵

Heating Fuel	ACS Distribution
Utility gas	78.3%
Bottled, tank, or LP gas	1.5%
Electricity	12.6%
Fuel oil, kerosene, etc.	6.6%
Coal or coke	0.1%
Wood	0.1%
Solar energy	0.1%
Other fuel	0.3%
No fuel used	0.5%
Total	100%

Table 5-263 Square Footage of Home, PSE&G Electric Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<500	683	0.0%	2,799	0.0%	110	16.1%	8	0.3%
500-999	38,919	1.6%	212,333	1.6%	5,011	12.9%	527	0.3%
1,000-1,499	146,672	6.2%	985,792	7.3%	13,716	9.4%	2,483	0.3%
1,500-1,999	134,225	5.6%	1,062,163	7.9%	13,692	10.2%	2,715	0.3%
2,000-2,499	76,369	3.2%	709,432	5.2%	8,960	11.7%	2,104	0.3%
2,500-2,999	39,632	1.7%	428,396	3.2%	5,299	13.4%	1,147	0.3%
3,000-3,999	28,094	1.2%	361,269	2.7%	3,750	13.4%	765	0.2%
>=4,000	12,501	0.5%	220,656	1.6%	1,355	10.8%	328	0.2%
Unknown	1,905,895	80.0%	9,551,237	70.6%	123,146	6.5%	22,005	0.2%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

⁵⁵ The table lists the percent of households in block groups that receive electricity from PSE&G. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-264 Type of Home, PSE&G Electric Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	1,179,192	49.5%	8,805,085	65.1%	86,644	7.4%	22,633	0.3%
Multifamily	563,352	23.6%	2,111,354	15.6%	60,529	10.7%	4,339	0.2%
Mobile home	1,286	0.1%	8,541	0.1%	381	29.6%	12	0.1%
Group home	4,715	0.2%	14,034	0.1%	327	6.9%	36	0.3%
Unknown	634,445	26.6%	2,595,063	19.2%	27,158	4.3%	5,062	0.2%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-265 Household Income Status, PSE&G Electric Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	641,687	26.9%	3,281,077	24.2%	32,814	5.1%	8,131	0.3%
251 - 400% FPL	330,148	13.9%	2,043,296	15.1%	24,012	7.3%	4,605	0.2%
>400% FPL	776,793	32.6%	5,615,165	41.5%	91,056	11.7%	14,284	0.3%
Unknown	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-266 Household Cultural Group, PSE&G Electric Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
African American	213,131	8.9%	1,029,627	7.6%	9,912	4.7%	3,087	0.3%
Central and Southwest Asian	3,933	0.2%	27,470	0.2%	419	10.7%	68	0.3%
Eastern European	88,414	3.7%	583,708	4.3%	7,920	9.0%	1,401	0.2%
Far Eastern	80,189	3.4%	428,365	3.2%	11,321	14.1%	1,346	0.3%
Hispanic	304,162	12.8%	1,640,062	12.1%	16,784	5.5%	3,536	0.2%
Middle Eastern	35,771	1.5%	204,283	1.5%	3,217	9.0%	587	0.3%
Jewish	62,731	2.6%	493,303	3.6%	7,019	11.2%	1,063	0.2%
Mediterranean	180,861	7.6%	1,303,227	9.6%	15,094	8.4%	2,733	0.2%
Native American	509	0.0%	3,166	0.0%	42	8.3%	5	0.2%
Pacific Islander	9,859	0.4%	57,999	0.4%	772	7.8%	115	0.2%
Scandinavian	17,552	0.7%	118,837	0.9%	1,342	7.7%	311	0.3%
South Asian	79,047	3.3%	422,177	3.1%	12,881	16.3%	1,635	0.4%
Western European	587,818	24.7%	3,985,786	29.5%	50,831	8.7%	9,511	0.2%
Miscellaneous other	140	0.0%	753	0.0%	19	13.6%	2	0.2%
Unknown	718,873	30.2%	3,235,314	23.9%	37,466	5.2%	6,681	0.2%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-267 Head of Household Age, PSE&G Electric Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	56,196	2.4%	235,812	1.7%	4,063	7.2%	630	0.3%
25 to 29	108,041	4.5%	447,775	3.3%	10,014	9.3%	1,300	0.3%
30 to 34	152,573	6.4%	695,770	5.1%	14,098	9.2%	1,989	0.3%
35 to 44	317,146	13.3%	1,810,106	13.4%	31,078	9.8%	4,944	0.3%
45 to 54	334,646	14.0%	2,341,790	17.3%	28,504	8.5%	5,274	0.2%
55 to 64	339,866	14.3%	2,424,409	17.9%	27,288	8.0%	5,709	0.2%
65 and over	440,160	18.5%	2,983,876	22.1%	32,837	7.5%	7,176	0.2%
Unknown	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-268 Home Rate Code, PSE&G Electric Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	1,023	0.0%	0	0.0%	1,023	100.0%	285	Inf
PEBRHS	7,489	0.3%	100,616	0.7%	1,078	14.4%	178	0.2%
PEBRHSC	744	0.0%	7,075	0.1%	41	5.5%	1	0.0%
PEBRLM	7,515	0.3%	126,440	0.9%	743	9.9%	212	0.2%
PEBRHS	2,069,537	86.9%	11,358,757	83.9%	142,550	6.9%	27,566	0.2%
PEBRSH	126,935	5.3%	783,399	5.8%	17,404	13.7%	1,249	0.2%
PETRHS	387	0.0%	5,374	0.0%	72	18.6%	21	0.4%
PETRLM	1,664	0.1%	25,815	0.2%	151	9.1%	61	0.2%
PETRS	161,934	6.8%	1,079,515	8.0%	11,330	7.0%	2,448	0.2%
PETRSH	5,679	0.2%	46,469	0.3%	645	11.4%	60	0.1%
Masked Categories	83	0.0%	616	0.0%	2	2.4%	0	0.0%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-269 LEED Certification, PSE&G Electric Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not Certified	2,382,906	100.0%	13,533,654	100.0%	175,015	7.3%	32,068	0.2%
Masked Categories	84	0.0%	422	0.0%	24	28.6%	13	3.1%
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-270 Electric Consumption, PSE&G Electric Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	581,530	24.4%	444,601	3.3%	31,459	5.4%	3,418	0.8%
Second Quintile (20-39)	539,506	22.6%	1,660,685	12.3%	34,670	6.4%	5,158	0.3%
Third Quintile (40-59)	483,146	20.3%	2,636,239	19.5%	37,606	7.8%	7,117	0.3%
Fourth Quintile (60-79)	435,513	18.3%	3,663,358	27.1%	38,369	8.8%	8,147	0.2%
Fifth Quintile (80-100)	342,272	14.4%	5,129,194	37.9%	31,912	9.3%	7,957	0.2%
Unknown	1,023	0.0%	0	0.0%	1,023	100.0%	285	Inf
Total	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-271 Primary Language at Home, PSE&G Electric Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	90.6%	309,736	13.0%	1,791,379	13.2%	33,091	10.7%	5,162	0.3%
Limited English	9.4%	203,088	8.5%	981,851	7.3%	12,289	6.1%	2,091	0.2%
Unknown	0.0%	1,870,166	78.5%	10,760,847	79.5%	129,659	6.9%	24,829	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-272 Household Income, PSE&G Electric Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	14.1%	287,505	12.1%	1,249,179	9.2%	11,830	4.1%	3,056	0.2%
\$20,000 to \$29,999	7.8%	158,914	6.7%	736,972	5.5%	8,503	5.4%	1,664	0.2%
\$30,000 to \$39,999	7.2%	146,705	6.2%	721,035	5.3%	8,873	6.1%	1,738	0.2%
\$40,000 to \$49,999	6.8%	120,744	5.1%	628,660	4.7%	7,369	6.1%	1,529	0.2%
\$50,000 to \$59,999	6.4%	123,073	5.2%	670,004	5.0%	8,154	6.6%	1,685	0.3%
\$60,000 to \$99,999	20.7%	369,053	15.5%	2,254,667	16.7%	30,511	8.3%	5,741	0.3%
\$100,000 to \$124,999	9.5%	158,532	6.7%	1,116,670	8.3%	15,877	10.0%	3,006	0.3%
\$125,000 to \$149,999	7.0%	105,679	4.4%	842,191	6.2%	12,012	11.4%	2,173	0.3%
\$150,000 to \$199,999	8.9%	129,512	5.4%	1,091,150	8.1%	18,336	14.2%	2,832	0.3%
>=\$200,000	11.6%	148,911	6.3%	1,629,009	12.0%	26,417	17.7%	3,595	0.2%
Unknown	0.0%	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-273 Home Built, PSE&G Electric Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<= 1939	22.8%	216,990	9.1%	1,624,252	12.0%	13,740	6.3%	3,394	0.2%
1940 to 1949	9.5%	104,458	4.4%	755,306	5.6%	7,035	6.7%	1,755	0.2%
1950 to 1959	17.0%	254,487	10.7%	1,965,616	14.5%	18,679	7.3%	4,487	0.2%
1960 to 1969	13.3%	144,410	6.1%	1,188,613	8.8%	13,527	9.4%	3,089	0.3%
1970 to 1979	10.4%	76,365	3.2%	674,129	5.0%	8,851	11.6%	1,957	0.3%
1980 to 1989	9.5%	102,257	4.3%	778,120	5.8%	12,067	11.8%	2,115	0.3%
1990 to 1999	7.7%	68,909	2.9%	578,408	4.3%	8,908	12.9%	1,911	0.3%
2000 to 2009	7.9%	52,714	2.2%	444,713	3.3%	9,164	17.4%	1,112	0.3%
2010 to 2013	1.4%	5,225	0.2%	46,847	0.4%	859	16.4%	42	0.1%
>2014	0.6%	722,813	30.3%	2,883,535	21.3%	55,052	7.6%	7,158	0.3%
Unknown	0.0%	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-274 Number of Household Members, PSE&G Electric Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
0	0.0%	12,290	0.5%	49,889	0.4%	997	8.1%	131	0.3%
1	25.9%	775,264	32.5%	3,511,920	26.0%	63,776	8.2%	8,723	0.3%
2	29.4%	332,374	14.0%	2,066,051	15.3%	27,554	8.3%	5,281	0.3%
3	18.4%	197,810	8.3%	1,415,069	10.5%	16,449	8.3%	3,455	0.2%
4	15.9%	141,712	6.0%	1,138,266	8.4%	11,937	8.4%	2,836	0.3%
5	6.7%	108,786	4.6%	963,496	7.1%	9,708	8.9%	2,365	0.3%
6	2.4%	83,041	3.5%	791,513	5.9%	7,719	9.3%	1,906	0.2%
7	1.4%	59,579	2.5%	603,140	4.5%	5,853	9.8%	1,421	0.2%
8	0.0%	37,772	1.6%	400,195	3.0%	3,889	10.3%	903	0.2%
Unknown	0.0%	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-275 Home Ownership Status, PSE&G Electric Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	56.1%	1,031,450	43.3%	8,105,360	59.9%	94,187	9.1%	20,637	0.3%
Renter occupied	43.9%	717,178	30.1%	2,834,178	20.9%	53,695	7.5%	6,383	0.2%
Unknown	0.0%	634,362	26.6%	2,594,539	19.2%	27,157	4.3%	5,061	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

Table 5-276 Home Value, PSE&G Electric Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<\$25,000	1.9%	1,320	0.1%	6,398	0.1%	206	15.6%	20	0.3%
\$25,000 to \$49,999	0.8%	7,690	0.3%	38,473	0.3%	354	4.6%	103	0.3%
\$50,000 to \$99,999	2.8%	46,858	2.0%	248,695	1.8%	1,751	3.7%	788	0.3%
\$100,000 to \$124,999	2.5%	26,467	1.1%	147,551	1.1%	1,190	4.5%	385	0.3%
\$125,000 to \$149,999	2.7%	37,306	1.6%	223,367	1.7%	1,731	4.6%	645	0.3%
\$150,000 to \$174,999	5.0%	50,836	2.1%	319,448	2.4%	2,881	5.7%	944	0.3%
\$175,000 to \$199,999	4.5%	59,512	2.5%	375,274	2.8%	3,710	6.2%	1,078	0.3%
\$200,000 to \$249,999	11.1%	142,774	6.0%	909,425	6.7%	9,737	6.8%	2,528	0.3%
\$250,000 to \$299,999	12.4%	162,716	6.8%	1,058,704	7.8%	12,194	7.5%	2,899	0.3%
\$300,000 to \$399,999	22.2%	292,977	12.3%	1,992,087	14.7%	24,157	8.3%	5,134	0.3%
\$400,000 to \$499,999	13.1%	173,405	7.3%	1,295,331	9.6%	18,123	10.5%	3,206	0.3%
\$500,000 to \$999,999	18.2%	231,316	9.7%	2,113,503	15.6%	30,182	13.1%	5,016	0.2%
\$1,000,000 or more	2.9%	37,612	1.6%	563,358	4.2%	4,592	12.2%	664	0.1%
Unknown	0.0%	1,112,201	46.7%	4,242,464	31.4%	64,231	5.8%	8,671	0.2%
Total	100.0%	2,382,990	100.0%	13,534,077	100.0%	175,039	7.4%	32,082	0.2%

5.8.2.2 Commercial Metrics

All commercial metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-277 Primary Language at Business, PSE&G Electric Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	8,756	3.0%	309,090	1.7%	292	3.3%	5,427	1.8%
Limited English	5,389	1.8%	140,116	0.8%	84	1.6%	823	0.6%
Unknown	280,138	95.2%	18,212,764	97.6%	10,376	3.7%	379,976	2.1%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-278 Business Opened, PSE&G Electric Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	16,811	5.7%	1,205,113	6.5%	944	5.6%	35,063	2.9%
1990 to 1999	16,744	5.7%	1,062,907	5.7%	608	3.6%	21,553	2.0%
2000 to 2009	38,549	13.1%	3,187,847	17.1%	1,729	4.5%	71,813	2.3%
2010 to 2013	41,278	14.0%	2,943,439	15.8%	1,561	3.8%	51,133	1.7%
2014 or later	63,946	21.7%	5,015,957	26.9%	2,857	4.5%	108,456	2.2%
Unknown	116,955	39.7%	5,246,706	28.1%	3,053	2.6%	98,208	1.9%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-279 Number of Employees, PSE&G Electric Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	93,717	31.9%	4,865,132	26.1%	3,141	3.4%	109,518	2.3%
5 to 9	36,688	12.5%	2,813,859	15.1%	1,657	4.5%	53,744	1.9%
10 to 19	15,636	5.3%	1,583,841	8.5%	868	5.6%	29,757	1.9%
20 to 49	8,453	2.9%	1,393,705	7.5%	580	6.9%	29,326	2.1%
50 to 99	2,866	1.0%	758,234	4.1%	430	15.0%	20,410	2.7%
100 to 249	1,584	0.5%	595,839	3.2%	169	10.7%	18,246	3.1%
250 to 499	231	0.1%	96,504	0.5%	17	7.4%	3,642	3.8%
500 to 999	63	0.0%	79,115	0.4%	14	22.2%	3,621	4.6%
1,000 to 4,999	19	0.0%	15,293	0.1%	2	10.5%	40	0.3%
Unknown	135,026	45.9%	6,460,450	34.6%	3,874	2.9%	117,922	1.8%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-280 Business Ownership Status, PSE&G Electric Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	163,766	55.7%	10,774,669	57.7%	6,689	4.1%	216,180	2.0%
Branch	13,034	4.4%	2,457,277	13.2%	967	7.4%	66,637	2.7%
Headquarters	301	0.1%	109,251	0.6%	23	7.6%	2,224	2.0%
Subsidiary	227	0.1%	74,068	0.4%	20	8.8%	2,977	4.0%
Unknown	116,955	39.7%	5,246,706	28.1%	3,053	2.6%	98,208	1.9%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-281 Business Rate Code, PSE&G Electric Commercial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	426	0.1%	0	0.0%	426	100.0%	55,396	Inf
PEBBPLPOFS	62	0.0%	13,133	0.1%	0	0.0%	0	0.0%
PEBBPLS	1,659	0.6%	176,856	1.0%	44	2.7%	1,512	0.9%
PEBBPLX	249	0.1%	6,750	0.0%	5	2.0%	324	4.8%
PEBGLPED	50,228	17.1%	112,624	0.6%	1,194	2.4%	1,265	1.1%
PEBGLPEDFL	327	0.1%	183	0.0%	4	1.2%	32	17.2%
PEBGLPEDRC	344	0.1%	1,879	0.0%	3	0.9%	0	0.0%
PEBGLPEDTS	168	0.1%	160	0.0%	2	1.2%	0	0.1%
PEBGLPMD	154,766	52.6%	4,063,534	21.8%	4,689	3.0%	60,791	1.5%
PEBGLPMDAD	119	0.0%	12,789	0.1%	6	5.0%	190	1.5%
PEBGLPMDFL	2,207	0.8%	9,897	0.1%	9	0.4%	153	1.6%
PEBGLPMDN	41	0.0%	11,593	0.1%	4	9.8%	85	0.7%
PEBGLPMDO	29	0.0%	667	0.0%	0	0.0%	0	0.0%
PEBGLPMDRC	1,749	0.6%	52,054	0.3%	63	3.6%	2,156	4.1%
PEBGLPMDTS	2,462	0.8%	15,716	0.1%	1	0.0%	0	0.0%
PEBHS	387	0.1%	9,062	0.1%	10	2.6%	63	0.7%
PEBHTSSUB	31	0.0%	465,061	2.5%	6	19.4%	2,761	0.6%
PEBLPLP	205	0.1%	545,464	2.9%	20	9.8%	7,663	1.4%
PEBLPLPAD	18	0.0%	37,983	0.2%	2	11.1%	107	0.3%
PEBLPLS	3,430	1.2%	2,054,697	11.0%	304	8.9%	34,477	1.7%
PEBLPLSAD	59	0.0%	41,795	0.2%	11	18.6%	994	2.4%
PEBLPLSH	230	0.1%	567,856	3.0%	26	11.3%	6,472	1.1%
PEBLPLSO	15	0.0%	8,988	0.1%	2	13.3%	520	5.8%
PEBPSALS	6,729	2.3%	73,060	0.4%	195	2.9%	3,463	4.7%
PEBPSALX	1,173	0.4%	11,240	0.1%	28	2.4%	3,317	29.5%
PETBPLPOFS	26	0.0%	622	0.0%	0	0.0%	0	0.0%
PETBPLS	829	0.3%	95,225	0.5%	15	1.8%	74	0.1%
PETBPLX	68	0.0%	1,778	0.0%	3	4.4%	0	0.0%
PETGLPED	5,700	1.9%	14,763	0.1%	156	2.7%	2,011	13.6%
PETGLPEDFL	422	0.1%	617	0.0%	1	0.2%	0	0.0%
PETGLPEDRC	28	0.0%	149	0.0%	1	3.6%	21	14.4%
PETGLPEDTS	332	0.1%	270	0.0%	1	0.3%	2	0.7%
PETGLPMD	44,735	15.2%	2,768,336	14.8%	2,792	6.2%	74,447	2.7%
PETGLPMDAD	49	0.0%	8,451	0.1%	5	10.2%	67	0.8%
PETGLPMDFL	7,079	2.4%	38,923	0.2%	6	0.1%	1	0.0%
PETGLPMDRC	542	0.2%	28,663	0.2%	44	8.1%	2,093	7.3%

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
PETGLPMDTS	2,999	1.0%	18,960	0.1%	1	0.0%	0	0.0%
PETHS	103	0.0%	3,300	0.0%	3	2.9%	24	0.7%
PETHTSSUB	68	0.0%	2,278,979	12.2%	18	26.5%	12,758	0.6%
PETLPLP	359	0.1%	1,825,457	9.8%	74	20.6%	32,843	1.8%
PETLPLPAD	17	0.0%	130,078	0.7%	0	0.0%	0	0.0%
PETLPLS	2,883	1.0%	2,627,126	14.1%	549	19.0%	74,310	2.8%
PETPSALS	823	0.3%	13,668	0.1%	21	2.6%	899	6.6%
PETPSALX	76	0.0%	1,198	0.0%	2	2.6%	28	2.3%
Masked	32	0.0%	512,367	2.7%	6	18.8%	4,905	1.0%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-282. LEED Certification, PSE&G Electric Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Gold or Platinum	38	0.0%	405,856	0.6%	5	13.2%	188	0.1%
Silver	28	0.0%	25,960	0.1%	4	14.3%	2	0.0%
Certified	26	0.0%	40,007	0.2%	4	15.4%	303	0.8%
Incomplete	74	0.0%	111,783	0.6%	8	10.8%	250	0.2%
Not Certified	294,117	99.9%	18,378,364	98.5%	10,731	3.7%	385,483	2.1%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-283 Electric Consumption, PSE&G Electric Commercial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	58,440	19.9%	25,918	0.1%	1,501	2.6%	8,183	31.6%
Second Quintile (20-39)	59,060	20.1%	155,107	0.8%	1,444	2.4%	6,077	3.9%
Third Quintile (40-59)	59,716	20.3%	439,224	2.4%	1,422	2.4%	6,282	1.4%
Fourth Quintile (60-79)	58,276	19.8%	1,189,095	6.4%	1,798	3.1%	30,641	2.6%
Fifth Quintile (80-100)	58,365	19.8%	16,852,626	90.3%	4,161	7.1%	279,647	1.7%
Unknown	426	0.1%	0	0.0%	426	100.0%	55,396	Inf
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-284 Electric Demand, PSE&G Electric Commercial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	255,069	86.7%	3,998,298	21.4%	7,453	2.9%	81,497	2.0%
101-200 kw	17,396	5.9%	3,002,737	16.1%	1,454	8.4%	71,875	2.4%
201-399 kw	7,275	2.5%	3,060,320	16.4%	712	9.8%	59,842	2.0%
>=400 kw	2,396	0.8%	8,145,009	43.6%	364	15.2%	107,201	1.3%
Unknown	12,147	4.1%	455,606	2.4%	769	6.3%	65,811	14.4%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-285 Woman/Minority Owned Status, PSE&G Electric Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	836	0.3%	38,583	0.2%	24	2.9%	825	2.1%
Minority business owner	25,066	8.5%	758,459	4.1%	603	2.4%	11,113	1.5%
Woman-minority business owner	301	0.1%	15,436	0.1%	11	3.7%	480	3.1%
Not woman or minority business owner	21,293	7.2%	990,654	5.3%	624	2.9%	12,915	1.3%
Unknown	246,787	83.9%	16,858,838	90.3%	9,490	3.9%	360,893	2.1%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-286 Number of Tenants in Structure, PSE&G Electric Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	29,924	10.2%	2,509,956	13.5%	1,110	3.7%	46,214	1.8%
2 to 5	18.6%	39,164	13.3%	3,173,472	17.0%	1,955	5.0%	74,674	2.4%
6 to 10	2.4%	10,825	3.7%	1,464,644	7.9%	626	5.8%	18,705	1.3%
11 to 20	1.0%	8,811	3.0%	1,051,447	5.6%	480	5.5%	26,779	2.6%
>20	0.4%	10,720	3.6%	1,585,672	8.5%	755	7.0%	46,962	3.0%
Unknown	0.0%	194,839	66.2%	8,876,778	47.6%	5,826	3.0%	172,891	2.0%
Total⁵⁶	97.0%	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

⁵⁶ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-287 Square Footage of Business, PSE&G Electric Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	70,080	23.8%	2,497,014	13.4%	2,131	3.0%	52,855	2.1%
1,500 to 2,499	41,819	14.2%	2,689,631	14.4%	1,405	3.4%	48,896	1.8%
2,500 to 4,999	28,804	9.8%	2,477,236	13.3%	1,452	5.0%	39,640	1.6%
5,000 to 9,999	11,885	4.0%	1,177,403	6.3%	819	6.9%	36,430	3.1%
10,000 to 19,999	7,470	2.5%	883,606	4.7%	567	7.6%	17,169	1.9%
20,000 to 39,999	5,629	1.9%	1,092,451	5.9%	388	6.9%	22,695	2.1%
40,000 to 99,999	4,592	1.6%	970,942	5.2%	411	9.0%	26,190	2.7%
100,000 or more	2,337	0.8%	990,660	5.3%	358	15.3%	25,508	2.6%
Unknown	121,667	41.3%	5,883,027	31.5%	3,221	2.7%	116,843	2.0%
Total	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

Table 5-288 Two-digit NAICS Classification, PSE&G Electric Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag & Forestry	0.1%	196	0.1%	14,413	0.1%	5	2.6%	68	0.5%
Mining	0.0%	85	0.0%	1,766	0.0%	3	3.5%	13	0.8%
Utilities	0.1%	113	0.0%	36,502	0.2%	2	1.8%	200	0.6%
Construction	9.4%	9,312	3.2%	780,616	4.2%	269	2.9%	5,705	0.7%
Manufacturing	0.0%	5,978	2.0%	656,165	3.5%	241	4.0%	12,435	1.9%
Wholesale Trade	3.8%	5,539	1.9%	559,576	3.0%	182	3.3%	9,473	1.7%
Retail Trade	0.0%	26,438	9.0%	1,688,757	9.1%	1,214	4.6%	49,872	3.0%
Transportation and Warehousing	0.0%	5,556	1.9%	337,953	1.8%	213	3.8%	10,574	3.1%
Information	2.0%	3,157	1.1%	490,870	2.6%	105	3.3%	9,866	2.0%
Finance and Insurance	4.7%	5,540	1.9%	919,526	4.9%	282	5.1%	23,412	2.6%
Real Estate	14.4%	8,861	3.0%	618,791	3.3%	764	8.6%	10,989	1.8%
Prof., Sci., & Tech.	19.8%	12,216	4.2%	940,205	5.0%	520	4.3%	14,829	1.6%
Management of Companies and Enterprises	0.0%	462	0.2%	36,163	0.2%	14	3.0%	271	0.8%
Admin, Support, & Waste Svcs.	7.8%	5,027	1.7%	388,258	2.1%	238	4.7%	8,928	2.3%
Educational Services	3.8%	4,631	1.6%	594,660	3.2%	419	9.1%	20,166	3.4%
Health Care and Social Assistance	10.9%	19,193	6.5%	1,587,910	8.5%	731	3.8%	44,556	2.8%
Arts, Ent. & Rec.	5.6%	3,149	1.1%	253,245	1.4%	132	4.2%	9,355	3.7%
Accommodation and Food Services	4.1%	16,919	5.8%	1,187,745	6.4%	596	3.5%	12,717	1.1%
Other Services	13.4%	24,363	8.3%	775,419	4.2%	753	3.1%	19,598	2.5%
Public Administration	0.0%	20,593	7.0%	1,546,726	8.3%	1,016	4.9%	24,991	1.6%
Unknown	0.0%	116,955	39.7%	5,246,706	28.1%	3,053	2.6%	98,208	1.9%
Total	100.0%	294,283	100.0%	18,661,970	100.0%	10,752	3.7%	386,226	2.1%

5.8.2.3 Industrial Metrics

All industrial metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-289 Primary Language at Business, PSE&G Electric Industrial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	281	3.0%	13,019	0.4%	15	5.3%	1,079	8.3%
Limited English	186	2.0%	8,167	0.3%	4	2.2%	78	1.0%
Unknown	8,921	95.0%	3,108,887	99.3%	461	5.2%	56,819	1.8%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-290 Business Opened, PSE&G Electric Industrial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	967	10.3%	338,453	10.8%	65	6.7%	5,675	1.7%
1990 to 1999	763	8.1%	195,648	6.3%	37	4.9%	2,148	1.1%
2000 to 2009	1,577	16.8%	443,031	14.2%	80	5.1%	15,188	3.4%
2010 to 2013	1,556	16.6%	406,498	13.0%	82	5.3%	11,827	2.9%
2014 or later	2,143	22.8%	603,472	19.3%	124	5.8%	6,033	1.0%
Unknown	2,382	25.4%	1,142,970	36.5%	92	3.9%	17,105	1.5%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-291 Number of Employees, PSE&G Electric Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	3,047	32.5%	528,187	16.9%	135	4.4%	12,427	2.4%
5 to 9	1,524	16.2%	335,246	10.7%	71	4.7%	7,951	2.4%
10 to 19	795	8.5%	195,785	6.3%	55	6.9%	2,340	1.2%
20 to 49	537	5.7%	215,074	6.9%	41	7.6%	3,947	1.8%
50 to 99	205	2.2%	141,721	4.5%	26	12.7%	6,245	4.4%
100 to 249	125	1.3%	198,391	6.3%	16	12.8%	2,800	1.4%
250+	37	0.4%	187,262	6.0%	10	2.7%	2,981	1.6%
Unknown	3,118	33.2%	1,328,407	42.4%	126	4.0%	19,286	1.5%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-292 Business Ownership Status, PSE&G Electric Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	6,630	70.6%	1,426,953	45.6%	354	5.3%	35,174	2.5%
Branch	303	3.2%	435,825	13.9%	21	6.9%	2,160	0.5%
Headquarters	32	0.3%	39,432	1.3%	2	6.3%	989	2.5%
Subsidiary	41	0.4%	84,893	2.7%	11	26.8%	2,548	3.0%
Unknown	2,382	25.4%	1,142,970	36.5%	92	3.9%	17,105	1.5%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-293 Business Rate Code, PSE&G Electric Industrial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	24	0.3%	0	0.0%	24	100.0%	1,636	Inf
PEBGLPED	1,428	15.2%	3,242	0.1%	24	1.7%	136	4.2%
PEBGLPEDRC	17	0.2%	79	0.0%	0	0.0%	0	0.0%
PEBGLPMD	5,037	53.7%	200,136	6.4%	177	3.5%	9,224	4.6%
PEBGLPMDRC	31	0.3%	583	0.0%	2	6.5%	109	18.8%
PEBHTSSUB	29	0.3%	207,014	6.6%	0	0.0%	0	0.0%
PEBLPLP	107	1.1%	170,104	5.4%	11	10.3%	943	0.6%
PEBLPLS	396	4.2%	218,143	7.0%	44	11.1%	5,772	2.7%
PEBLPLSH	42	0.5%	120,752	3.9%	7	16.7%	2,356	2.0%
PEBPSALS	73	0.8%	615	0.0%	3	4.1%	179	29.2%
PEBRS	56	0.6%	312	0.0%	3	5.4%	0	0.0%
PETGLPED	125	1.3%	335	0.0%	10	8.0%	95	28.4%
PETGLPMD	1,532	16.3%	120,152	3.8%	106	6.9%	4,313	3.6%
PETHTSSUB	64	0.7%	1,222,273	39.1%	16	25.0%	25,150	2.1%
PETLPLP	106	1.1%	460,197	14.7%	15	14.2%	3,679	0.8%
PETLPLS	262	2.8%	263,265	8.4%	33	12.6%	3,173	1.2%
Masked Categories	59	0.6%	142,872	4.6%	5	8.5%	1,211	0.8%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-294 LEED Certification, PSE&G Electric Industrial

This table has been removed to protect confidentiality.

Table 5-295 Electric Consumption, PSE&G Electric Industrial

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	1,958	20.9%	1,810	0.1%	48	2.5%	3,095	HIGH
Second Quintile (20-39)	2,010	21.4%	12,431	0.4%	51	2.5%	950	7.6%
Third Quintile (40-59)	1,967	21.0%	38,010	1.2%	64	3.3%	1,043	2.7%
Fourth Quintile (60-79)	1,830	19.5%	118,240	3.8%	108	5.9%	4,989	4.2%
Fifth Quintile (80-100)	1,599	17.0%	2,959,581	94.6%	185	11.6%	46,264	1.6%
Unknown	24	0.3%	0	0.0%	24	100.0%	1,636	Inf
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-296 Electric Demand, PSE&G Electric Industrial

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	6,997	74.5%	140,821	4.5%	240	3.4%	8,376	6.0%
101 to 200 kw	1,126	12.0%	184,172	5.9%	80	7.1%	5,477	3.0%
201 to 399 kw	683	7.3%	292,228	9.3%	67	9.8%	7,312	2.5%
>=400 kw	439	4.7%	2,510,569	80.2%	65	14.8%	35,107	1.4%
Unknown	143	1.5%	2,283	0.1%	28	19.6%	1,704	HIGH
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-297 Woman/Minority Owned Status, PSE&G Electric Industrial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman business owner	29	0.3%	4,883	0.2%	0	0.0%	0	0.0%
Minority business owner	635	6.8%	56,901	1.8%	21	3.3%	728	1.3%
Woman-minority business owner	16	0.2%	708	0.0%	0	0.0%	0	0.0%
Not woman or minority business owner	990	10.6%	100,428	3.2%	48	4.9%	3,018	3.0%
Unknown	7,718	82.2%	2,967,153	94.8%	411	5.3%	54,230	1.8%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-298 Number of Tenants in Structure, PSE&G Electric Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	1,535	16.4%	413,934	13.2%	81	5.3%	9,021	2.2%
2 to 5	18.6%	1,882	20.1%	604,315	19.3%	107	5.7%	8,100	1.3%
6 to 10	2.4%	314	3.3%	139,832	4.5%	18	5.7%	8,170	5.8%
11 to 20	1.0%	162	1.7%	31,728	1.0%	19	11.7%	881	2.8%
>20	0.4%	202	2.2%	62,551	2.0%	45	22.3%	833	1.3%
Unknown	0.0%	5,293	56.4%	1,877,714	60.0%	210	4.0%	30,971	1.7%
Total⁵⁷	97.0%	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

⁵⁷ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-299 Square Footage of Business, PSE&G Electric Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	2,287	24.4%	250,493	8.0%	65	2.8%	2,190	0.9%
1,500 to 2,499	1,631	17.4%	361,235	11.5%	73	4.5%	8,468	2.3%
2,500 to 4,999	1,153	12.3%	310,702	9.9%	62	5.4%	11,309	3.6%
5,000 to 9,999	570	6.1%	131,293	4.2%	56	9.8%	1,052	0.8%
10,000 to 19,999	384	4.1%	108,069	3.5%	32	8.3%	1,624	1.5%
20,000 to 39,999	362	3.9%	211,651	6.8%	40	11.1%	3,790	1.8%
40,000 to 99,999	321	3.4%	155,237	5.0%	25	7.8%	5,844	3.8%
100,000 or more	175	1.9%	410,426	13.1%	32	18.3%	6,221	1.5%
Unknown	2,505	26.7%	1,190,967	38.1%	95	3.8%	17,478	1.5%
Total	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

Table 5-300 Two-digit NAICS Classification, PSE&G Electric Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag., Forestry, and Mining	0.2%	16	0.2%	11,010	0.4%	2	12.5%	260	2.4%
Utilities	0.1%	17	0.2%	29,385	0.9%	4	23.5%	290	1.0%
Construction	9.4%	458	4.9%	171,823	5.5%	17	3.7%	5,291	3.1%
Manufacturing	0.0%	955	10.2%	575,773	18.4%	84	8.8%	7,845	1.4%
Wholesale Trade	3.8%	590	6.3%	145,481	4.7%	33	5.6%	4,035	2.8%
Retail Trade	0.0%	893	9.5%	161,479	5.2%	66	7.4%	2,850	1.8%
Transportation and Warehousing	0.0%	265	2.8%	61,307	2.0%	16	6.0%	4,279	7.0%
Information	2.0%	75	0.8%	15,416	0.5%	3	4.0%	399	2.6%
Finance and Insurance	4.7%	156	1.7%	109,944	3.5%	6	3.9%	7,714	7.0%
Real Estate	14.4%	267	2.8%	127,636	4.1%	12	4.5%	980	0.8%
Prof., Sci., & Tech.	19.8%	572	6.1%	91,827	2.9%	33	5.8%	1,319	1.4%
Management of Companies and Enterprises	0.0%	24	0.3%	8,968	0.3%	3	12.5%	114	1.3%
Admin, Support, & Waste Svcs.	7.8%	218	2.3%	23,913	0.8%	9	4.1%	19	0.1%
Educational Services	3.8%	109	1.2%	33,439	1.1%	7	6.4%	153	0.5%
Health Care and Social Assistance	10.9%	542	5.8%	106,618	3.4%	11	2.0%	611	0.6%
Arts, Ent. & Rec.	5.6%	81	0.9%	7,339	0.2%	5	6.2%	715	9.7%
Accommodation and Food Services	4.1%	294	3.1%	48,868	1.6%	11	3.7%	643	1.3%
Other Services	13.4%	684	7.3%	43,960	1.4%	27	4.0%	995	2.3%
Public Administration	0.0%	790	8.4%	212,916	6.8%	39	4.9%	2,360	1.1%
Unknown	0.0%	2,382	25.4%	1,142,970	36.5%	92	3.9%	17,105	1.5%
Total	100.0%	9,388	100.0%	3,130,073	100.0%	480	5.1%	57,976	1.9%

5.8.3 PSE&G Gas Metrics

5.8.3.1 Residential Metrics

All residential metrics are reported in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-301 Home Heating Type, PSE&G Gas Residential⁵⁸

Heating Fuel	ACS Distribution
Utility gas	78.3%
Bottled, tank, or LP gas	1.5%
Electricity	12.7%
Fuel oil, kerosene, etc.	6.4%
Coal or coke	0.1%
Wood	0.2%
Solar energy	0.1%
Other fuel	0.3%
No fuel used	0.5%
Total	100%

Table 5-302 Square Footage of Home, PSE&G Gas Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<500	304	0.0%	176	0.0%	30	9.9%	0	0.3%
500-999	26,946	1.6%	16,531	1.1%	2,267	8.4%	603	3.7%
1,000-1,499	132,703	7.9%	107,186	7.2%	10,899	8.2%	3,348	3.1%
1,500-1,999	136,669	8.1%	135,608	9.2%	13,138	9.6%	2,448	1.8%
2,000-2,499	87,509	5.2%	102,624	6.9%	10,128	11.6%	1,325	1.3%
2,500-2,999	49,666	2.9%	68,158	4.6%	6,170	12.4%	637	0.9%
3,000-3,999	40,662	2.4%	68,514	4.6%	5,111	12.6%	359	0.5%
>=4,000	21,166	1.3%	52,190	3.5%	2,141	10.1%	198	0.4%
Unknown	1,195,808	70.7%	929,402	62.8%	80,799	6.8%	23,113	2.5%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

⁵⁸ The table lists the percent of households in block groups that receive gas from PSE&G. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-303 Type of Home, PSE&G Gas Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single family	1,098,222	64.9%	1,109,918	75.0%	89,946	8.2%	22,240	2.0%
Multifamily	218,200	12.9%	116,032	7.8%	22,767	10.4%	3,070	2.7%
Mobile home	261	0.0%	124	0.0%	144	55.2%	13	10.8%
Group home	532	0.0%	165	0.0%	167	31.4%	0	0.0%
Unknown	374,218	22.1%	254,148	17.2%	17,659	4.7%	6,708	2.6%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-304 Household Income Status, PSE&G Gas Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
250% FPL or less	387,612	22.9%	294,381	19.9%	21,014	5.4%	14,137	4.8%
251 - 400% FPL	240,094	14.2%	201,578	13.6%	18,016	7.5%	4,430	2.2%
>400% FPL	689,571	40.8%	730,315	49.3%	73,995	10.7%	6,757	0.9%
Unknown	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-305 Household Cultural Group, PSE&G Gas Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
African American	131,069	7.8%	108,924	7.4%	6,430	4.9%	7,072	6.5%
Central and Southwest Asian	3,640	0.2%	4,349	0.3%	321	8.8%	83	1.9%
Eastern European	71,673	4.2%	67,432	4.6%	6,184	8.6%	769	1.1%
Far Eastern	61,355	3.6%	56,565	3.8%	7,219	11.8%	444	0.8%
Hispanic	190,357	11.3%	157,909	10.7%	11,352	6.0%	5,682	3.6%
Middle Eastern	26,527	1.6%	25,831	1.7%	2,434	9.2%	780	3.0%
Jewish	56,294	3.3%	63,101	4.3%	5,796	10.3%	588	0.9%
Mediterranean	160,854	9.5%	163,469	11.0%	13,524	8.4%	2,297	1.4%
Native American	396	0.0%	360	0.0%	30	7.6%	25	6.9%
Pacific Islander	6,925	0.4%	6,104	0.4%	519	7.5%	95	1.6%
Scandinavian	14,818	0.9%	14,076	1.0%	1,195	8.1%	204	1.5%
South Asian	55,397	3.3%	50,559	3.4%	9,973	18.0%	719	1.4%
Western European	466,480	27.6%	436,829	29.5%	39,828	8.5%	6,270	1.4%
Miscellaneous other	100	0.0%	88	0.0%	17	17.0%	1	0.8%
Unknown	445,548	26.3%	324,791	21.9%	25,861	5.8%	7,000	2.2%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-306 Head of Household Age, PSE&G Gas Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
18 to 24	30,457	1.8%	17,795	1.2%	2,151	7.1%	611	3.4%
25 to 29	59,846	3.5%	35,174	2.4%	5,105	8.5%	787	2.2%
30 to 34	92,774	5.5%	60,918	4.1%	9,545	10.3%	1,346	2.2%
35 to 44	222,278	13.1%	184,889	12.5%	22,328	10.1%	3,945	2.1%
45 to 54	264,905	15.7%	262,240	17.7%	23,240	8.8%	5,227	2.0%
55 to 64	278,834	16.5%	283,582	19.2%	23,234	8.3%	5,350	1.9%
65 and over	368,183	21.8%	381,676	25.8%	27,422	7.5%	8,057	2.1%
Unknown	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-307 Home Rate Code, PSE&G Gas Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not provided	4,467	0.3%	0	0.0%	4,467	100.0%	687	Inf
PGBGSGH	1,098	0.1%	1,118	0.1%	59	5.4%	6	0.5%
PGBGSGN	495	0.0%	295	0.0%	17	3.4%	0	0.0%
PGBRSGH	1,580,511	93.4%	1,398,753	94.5%	120,887	7.7%	29,094	2.1%
PGBRSGHM	25,557	1.5%	27,891	1.9%	1,539	6.0%	745	2.7%
PGBRSGNM	6,475	0.4%	2,223	0.2%	199	3.1%	68	3.1%
PGTRSGH	48,605	2.9%	46,324	3.1%	2,839	5.8%	1,336	2.9%
PGTRSGHM	853	0.1%	1,093	0.1%	31	3.6%	38	3.5%
PGTRSGN	22,946	1.4%	2,009	0.1%	637	2.8%	53	2.6%
PGTRSGNM	315	0.0%	113	0.0%	7	2.2%	4	3.7%
Masked Categories	111	0.0%	569	0.0%	1	0.9%	0	0.0%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-308 LEED Certification, PSE&G Gas Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	1,691,352	100.0%	1,480,351	100.0%	130,658	7.7%	32,029	2.2%
Masked Categories	81	0.0%	37	0.0%	25	30.9%	2	5.4%
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-309 Gas Consumption, PSE&G Gas Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
First Quintile (0-19)	333,354	19.7%	31,869	2.2%	21,169	6.4%	869	2.7%
Second Quintile (20-39)	303,933	18.0%	139,196	9.4%	21,675	7.1%	3,951	2.8%
Third Quintile (40-59)	313,893	18.6%	242,520	16.4%	24,244	7.7%	7,243	3.0%
Fourth Quintile (60-79)	343,156	20.3%	366,253	24.7%	28,160	8.2%	8,314	2.3%
Fifth Quintile (80-100)	392,630	23.2%	700,549	47.3%	30,968	7.9%	10,966	1.6%
Unknown	4,467	0.3%	0	0.0%	4,467	100.0%	687	Inf
Total	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-310 Primary Language at Home, PSE&G Gas Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	91.2%	235,213	13.9%	217,320	14.7%	25,862	11.0%	3,725	1.7%
Limited English	8.8%	107,988	6.4%	82,242	5.6%	5,900	5.5%	3,994	4.9%
Unknown	0.0%	1,348,232	79.7%	1,180,826	79.8%	98,921	7.3%	24,311	2.1%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-311 Household Income, PSE&G Gas Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< \$20,000	13.9%	153,475	9.1%	103,456	7.0%	6,636	4.3%	5,875	5.7%
\$20,000 to \$29,999	7.7%	91,175	5.4%	64,984	4.4%	4,898	5.4%	3,242	5.0%
\$30,000 to \$39,999	6.9%	89,084	5.3%	64,196	4.3%	5,362	6.0%	2,590	4.0%
\$40,000 to \$49,999	6.6%	77,768	4.6%	57,610	3.9%	4,888	6.3%	1,888	3.3%
\$50,000 to \$59,999	6.3%	83,066	4.9%	62,895	4.3%	5,685	6.8%	1,884	3.0%
\$60,000 to \$99,999	20.0%	282,850	16.7%	230,697	15.6%	22,320	7.9%	4,713	2.0%
\$100,000 to \$124,999	9.5%	138,777	8.2%	127,369	8.6%	13,608	9.8%	1,736	1.4%
\$125,000 to \$149,999	7.1%	103,163	6.1%	106,889	7.2%	10,888	10.6%	1,096	1.0%
\$150,000 to \$199,999	9.2%	125,767	7.4%	144,261	9.7%	15,504	12.3%	1,147	0.8%
>=\$200,000	13.0%	172,152	10.2%	263,918	17.8%	23,236	13.5%	1,153	0.4%
Unknown	0.0%	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-312 Home Built, PSE&G Gas Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<=1939	22.5%	174,451	10.3%	204,814	13.8%	11,775	6.8%	6,455	3.2%
1940-1949	8.9%	79,210	4.7%	79,851	5.4%	5,497	6.9%	2,202	2.8%
1950-1959	16.4%	224,965	13.3%	227,944	15.4%	17,187	7.6%	4,629	2.0%
1960-1969	13.6%	156,449	9.3%	171,015	11.6%	13,679	8.7%	2,598	1.5%
1970-1979	10.4%	84,119	5.0%	90,971	6.2%	8,320	9.9%	1,081	1.2%
1980-1989	9.6%	107,658	6.4%	98,067	6.6%	10,838	10.1%	985	1.0%
1990-1999	8.3%	81,681	4.8%	83,897	5.7%	10,293	12.6%	897	1.1%
2000-2009	8.3%	62,861	3.7%	66,353	4.5%	8,987	14.3%	597	0.9%
2010-2013	1.4%	6,854	0.4%	6,749	0.5%	866	12.6%	14	0.2%
>=2014	0.6%	339,029	20.0%	196,613	13.3%	25,583	7.6%	5,865	3.0%
Unknown	0.0%	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-313 Number of Household Members, PSE&G Gas Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
0	0.0%	6,468	0.4%	4,654	0.3%	396	6.1%	158	3.4%
1	26.1%	465,797	27.5%	323,812	21.9%	37,367	8.0%	7,119	2.2%
2	29.7%	259,296	15.3%	238,159	16.1%	21,693	8.4%	5,215	2.2%
3	18.1%	170,772	10.1%	173,878	11.8%	14,099	8.3%	3,607	2.1%
4	15.9%	130,147	7.7%	142,645	9.6%	11,499	8.8%	2,873	2.0%
5	6.7%	105,344	6.2%	121,086	8.2%	9,764	9.3%	2,366	2.0%
6	2.2%	82,366	4.9%	99,141	6.7%	8,075	9.8%	1,839	1.9%
7	1.4%	59,548	3.5%	74,558	5.0%	6,114	10.3%	1,368	1.8%
8	0.0%	37,539	2.2%	48,342	3.3%	4,018	10.7%	778	1.6%
Unknown	0.0%	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-314 Home Ownership Status, PSE&G Gas Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Owner occupied	57.5%	985,709	58.3%	1,037,091	70.1%	89,150	9.0%	19,687	1.9%
Renter occupied	42.5%	331,568	19.6%	189,183	12.8%	23,875	7.2%	5,637	3.0%
Unknown	0.0%	374,156	22.1%	254,113	17.2%	17,658	4.7%	6,707	2.6%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

Table 5-315 Home Value, PSE&G Gas Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<\$25,000	1.8%	942	0.1%	624	0.0%	49	5.2%	48	7.6%
\$25,000 to \$49,999	0.8%	6,059	0.4%	4,229	0.3%	192	3.2%	402	9.5%
\$50,000 to \$99,999	2.8%	35,763	2.1%	25,218	1.7%	1,273	3.6%	2,294	9.1%
\$100,000 to \$124,999	2.3%	19,091	1.1%	13,046	0.9%	752	3.9%	775	5.9%
\$125,000 to \$149,999	2.4%	25,543	1.5%	17,697	1.2%	1,218	4.8%	1,074	6.1%
\$150,000 to \$174,999	4.3%	36,765	2.2%	26,244	1.8%	1,999	5.4%	1,384	5.3%
\$175,000 to \$199,999	3.8%	42,513	2.5%	30,308	2.1%	2,517	5.9%	1,597	5.3%
\$200,000 to \$249,999	9.8%	101,774	6.0%	75,888	5.1%	6,761	6.6%	3,076	4.1%
\$250,000 to \$299,999	11.2%	120,075	7.1%	96,416	6.5%	9,211	7.7%	3,177	3.3%
\$300,000 to \$399,999	21.1%	245,883	14.5%	213,241	14.4%	20,298	8.3%	4,574	2.2%
\$400,000 to \$499,999	13.8%	171,449	10.1%	167,632	11.3%	16,763	9.8%	1,981	1.2%
\$500,000 to \$999,999	21.7%	287,120	17.0%	356,401	24.1%	32,958	11.5%	2,432	0.7%
\$1,000,000 or more	4.1%	53,192	3.1%	116,843	7.9%	5,156	9.7%	277	0.2%
Unknown	0.0%	545,264	32.2%	336,601	22.7%	31,536	5.8%	8,942	2.7%
Total	100.0%	1,691,433	100.0%	1,480,388	100.0%	130,683	7.7%	32,031	2.2%

5.8.3.2 Commercial Metrics

All commercial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-316 Primary Language at Business, PSE&G Gas Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	6,089	3.8%	20,726	1.8%	184	3.0%	24	0.1%
Limited English	2,919	1.8%	8,576	0.8%	38	1.3%	11	0.1%
Unknown	149,440	94.3%	1,097,507	97.4%	5,982	4.0%	6,625	0.6%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-317 Business Opened, PSE&G Gas Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	11,853	7.5%	76,327	6.8%	672	5.7%	1,068	1.4%
1990 to 1999	11,951	7.5%	63,506	5.6%	415	3.5%	241	0.4%
2000 to 2009	26,130	16.5%	162,782	14.5%	1,192	4.6%	914	0.6%
2010 to 2013	25,999	16.4%	142,945	12.7%	902	3.5%	522	0.4%
2014 or later	40,153	25.3%	303,184	26.9%	1,691	4.2%	969	0.3%
Unknown	42,362	26.7%	378,065	33.6%	1,332	3.1%	2,945	0.8%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-318 Number of Employees, PSE&G Gas Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	60,405	38.1%	272,927	24.2%	1,865	3.1%	1,246	0.5%
5 to 9	24,553	15.5%	141,045	12.5%	1,084	4.4%	351	0.3%
10 to 19	10,771	6.8%	78,123	6.9%	587	5.5%	306	0.4%
20 to 49	6,200	3.9%	63,339	5.6%	460	7.4%	558	0.9%
50 to 99	2,126	1.3%	40,132	3.6%	295	13.9%	519	1.3%
100 to 249	1,095	0.7%	34,932	3.1%	125	11.4%	394	1.1%
250 to 499	167	0.1%	9,955	0.9%	13	7.8%	65	0.7%
500 to 999	50	0.0%	4,387	0.4%	7	14.0%	0	0.0%
1,000 to 4,999	20	0.0%	1,267	0.1%	2	10.0%	0	0.0%
Unknown	53,061	33.5%	480,703	42.7%	1,766	3.3%	3,221	0.7%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-319 Business Ownership Status, PSE&G Gas Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	106,141	67.0%	662,108	58.8%	4,125	3.9%	3,445	0.5%
Branch	9,510	6.0%	76,593	6.8%	719	7.6%	243	0.3%
Headquarters	243	0.2%	5,287	0.5%	14	5.8%	6	0.1%
Subsidiary	192	0.1%	4,756	0.4%	14	7.3%	21	0.4%
Unknown	42,362	26.7%	378,065	33.6%	1,332	3.1%	2,945	0.8%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-320 Business Rate Code, PSE&G Gas Commercial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not provided	162	0.1%	0	0.0%	162	100.0%	1,086	Inf
PGBGSGH	99,982	63.1%	190,256	16.9%	2,768	2.8%	868	0.5%
PGBGSGN	19,471	12.3%	29,484	2.6%	594	3.1%	114	0.4%
PGBLVG	10,281	6.5%	246,225	21.9%	694	6.8%	506	0.2%
PGBLVGI	27	0.0%	4,549	0.4%	1	3.7%	0	0.0%
PGBRSGH	1,125	0.7%	1,234	0.1%	27	2.4%	2	0.1%
PGBRSGHM	160	0.1%	273	0.0%	8	5.0%	0	0.0%
PGBRSGNM	28	0.0%	11	0.0%	1	3.6%	0	0.0%
PGBTSGNF	15	0.0%	4,709	0.4%	0	0.0%	0	0.0%
PGTGSGH	15,604	9.9%	51,760	4.6%	841	5.4%	540	1.0%
PGTGSGN	3,306	2.1%	9,672	0.9%	159	4.8%	74	0.8%
PGTLVG	7,958	5.0%	367,410	32.6%	919	11.6%	2,683	0.7%
PGTLVGI	84	0.1%	32,043	2.8%	15	17.9%	204	0.6%
PGTRSGH	65	0.0%	94	0.0%	3	4.6%	0	0.1%
PGTRSGN	23	0.0%	5	0.0%	0	0.0%	0	0.0%
PGTTSGF	18	0.0%	8,936	0.8%	0	0.0%	0	0.0%
PGTTSGNF	95	0.1%	83,920	7.5%	9	9.5%	162	0.2%
Masked Categories	44	0.0%	96,225	8.5%	3	6.8%	422	0.4%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-321 LEED Certification, PSE&G Gas Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Gold or Platinum	22	0.0%	774	0.1%	3	13.6%	0	0.0%
Silver	19	0.0%	451	0.0%	3	15.8%	25	5.6%
Certified	30	0.0%	1,612	0.1%	4	13.3%	10	0.6%
Incomplete	54	0.0%	5,323	0.5%	4	7.4%	11	0.2%
Not Certified	158,323	99.9%	1,118,650	99.3%	6,190	3.9%	6,614	0.6%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-322 Gas Consumption, PSE&G Gas Commercial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,250 therms	80,351	50.7%	37,354	3.3%	1,907	2.4%	201	0.5%
1,250 to 4,999 therms	45,065	28.4%	114,500	10.2%	1,682	3.7%	415	0.4%
5,000 to 12,499 therms	17,858	11.3%	140,926	12.5%	1,015	5.7%	667	0.5%
12,500 to 39,999 therms	10,968	6.9%	237,476	21.1%	929	8.5%	1,257	0.5%
>=40,000 therms	4,044	2.6%	596,553	52.9%	509	12.6%	3,036	0.5%
Unknown	162	0.1%	0	0.0%	162	100.0%	1,086	Inf
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-323 Woman/Minority Owned Status, PSE&G Gas Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman business owner	657	0.4%	2,849	0.3%	18	2.7%	5	0.2%
Minority business owner	13,230	8.4%	57,924	5.1%	361	2.7%	271	0.5%
Woman-minority business owner	182	0.1%	984	0.1%	4	2.2%	8	0.9%
Not woman or minority business owner	14,787	9.3%	51,341	4.6%	423	2.9%	167	0.3%
Unknown	129,592	81.8%	1,013,711	90.0%	5,398	4.2%	6,208	0.6%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-324 Number of Tenants in Structure, PSE&G Gas Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	20,554	13.0%	143,977	12.8%	787	3.8%	914	0.6%
2 to 5	18.6%	27,656	17.5%	202,762	18.0%	1,307	4.7%	996	0.5%
6 to 10	2.4%	7,616	4.8%	40,885	3.6%	366	4.8%	182	0.5%
11 to 20	1.0%	6,308	4.0%	28,054	2.5%	351	5.6%	101	0.4%
>20	0.4%	6,571	4.2%	56,788	5.0%	526	8.0%	670	1.2%
Unknown	0.0%	89,743	56.6%	654,343	58.1%	2,867	3.2%	3,797	0.6%
Total⁵⁹	97.0%	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

Table 5-325 Square Footage of Business, PSE&G Gas Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Less than 1,499	44,469	28.1%	218,546	19.4%	1,232	2.8%	896	0.4%
1,500 to 2,499	27,238	17.2%	130,340	11.6%	860	3.2%	0	0.0%
2,500 to 4,999	19,401	12.2%	115,095	10.2%	819	4.2%	530	0.5%
5,000 to 9,999	7,885	5.0%	56,678	5.0%	585	7.4%	446	0.8%
10,000 to 19,999	5,189	3.3%	45,690	4.1%	430	8.3%	270	0.6%
20,000 to 39,999	3,901	2.5%	45,164	4.0%	309	7.9%	283	0.6%
40,000 to 99,999	3,258	2.1%	52,766	4.7%	300	9.2%	384	0.7%
100,000 or more	1,661	1.1%	51,816	4.6%	238	14.3%	668	1.3%
Unknown	45,446	28.7%	410,714	36.5%	1,431	3.2%	3,184	0.8%
Total	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

⁵⁹ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-326 Two-digit NAICS Classification, PSE&G Gas Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Ag & Forestry	0.2%	155	0.1%	1,116	0.1%	3	1.9%	0	0.0%
Mining	0.0%	45	0.0%	102	0.0%	2	4.4%	0	0.0%
Utilities	0.1%	52	0.0%	8,144	0.7%	2	3.9%	5	0.1%
Construction	9.8%	5,444	3.4%	28,996	2.6%	145	2.7%	137	0.5%
Manufacturing	0.0%	4,418	2.8%	43,199	3.8%	192	4.4%	71	0.2%
Wholesale Trade	3.7%	3,744	2.4%	37,178	3.3%	189	5.1%	138	0.4%
Retail Trade	0.0%	16,863	10.6%	70,865	6.3%	810	4.8%	112	0.2%
Transportation and Warehousing	0.0%	2,856	1.8%	20,054	1.8%	114	4.0%	92	0.5%
Information	1.9%	2,037	1.3%	10,617	0.9%	67	3.3%	17	0.2%
Finance and Insurance	4.7%	3,742	2.4%	15,120	1.3%	187	5.0%	143	0.9%
Real Estate	14.6%	5,373	3.4%	47,982	4.3%	452	8.4%	700	1.5%
Prof., Sci., & Tech.	19.6%	7,720	4.9%	41,136	3.7%	288	3.7%	-320	-0.8%
Management of Companies and Enterprises	0.0%	334	0.2%	1,697	0.2%	12	3.6%	1	0.1%
Admin, Support, & Waste Svcs.	7.8%	3,029	1.9%	16,387	1.5%	141	4.7%	54	0.3%
Educational Services	3.9%	3,430	2.2%	42,263	3.8%	279	8.1%	836	2.0%
Health Care and Social Assistance	10.8%	12,852	8.1%	89,645	8.0%	421	3.3%	894	1.0%
Arts, Ent. & Rec.	5.6%	2,064	1.3%	15,089	1.3%	84	4.1%	82	0.6%
Accommodation and Food Services	4.1%	12,792	8.1%	79,309	7.0%	411	3.2%	219	0.3%
Other Services	13.3%	16,803	10.6%	62,648	5.6%	499	3.0%	152	0.2%
Public Administration	0.0%	12,333	7.8%	117,199	10.4%	574	4.7%	381	0.3%
Unknown	0.0%	42,362	26.7%	378,065	33.6%	1,332	3.1%	2,945	0.8%
Total	100.0%	158,448	100.0%	1,126,809	100.0%	6,204	3.9%	6,660	0.6%

5.8.3.3 Industrial Metrics

All industrial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-327 Primary Language at Business, PSE&G Gas Industrial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	238	3.0%	997	0.1%	11	4.6%	3	0.3%
Limited English	154	1.9%	1,040	0.1%	4	2.6%	0	0.0%
Unknown	7,612	95.1%	1,105,360	99.8%	324	4.3%	318	0.0%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-328 Business Opened, PSE&G Gas Industrial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980 to 1989	837	10.5%	39,374	3.6%	49	5.9%	25	0.1%
1990 to 1999	643	8.0%	78,292	7.1%	25	3.9%	10	0.0%
2000 to 2009	1,270	15.9%	259,789	23.5%	58	4.6%	32	0.0%
2010 to 2013	1,280	16.0%	397,216	35.9%	48	3.8%	34	0.0%
2014 or later	1,799	22.5%	39,800	3.6%	86	4.8%	35	0.1%
Unknown	2,175	27.2%	292,925	26.5%	73	3.4%	185	0.1%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-329 Number of Employees, PSE&G Gas Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	2,527	31.6%	260,655	23.5%	93	3.7%	48	0.0%
5 to 9	1,297	16.2%	21,872	2.0%	49	3.8%	20	0.1%
10 to 19	622	7.8%	83,940	7.6%	33	5.3%	17	0.0%
20 to 49	469	5.9%	20,804	1.9%	32	6.8%	29	0.1%
50 to 99	175	2.2%	391,714	35.4%	16	9.1%	9	0.0%
100 to 249	113	1.4%	19,529	1.8%	8	7.1%	3	0.0%
250+	34	0.4%	9,853	0.9%	6	17.6%	0	0.0%
Unknown	2,767	34.6%	299,029	27.0%	102	3.7%	194	0.1%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-330 Business Ownership Status, PSE&G Gas Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	5,493	68.6%	783,988	70.8%	244	4.4%	118	0.0%
Branch	271	3.4%	21,356	1.9%	15	5.5%	17	0.1%
Headquarters	39	0.5%	4,848	0.4%	3	7.7%	1	0.0%
Subsidiary	26	0.3%	4,279	0.4%	4	15.4%	0	0.0%
Unknown	2,175	27.2%	292,925	26.5%	73	3.4%	185	0.1%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-331 Business Rate Code, PSE&G Gas Industrial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
PGBGSGH	4,553	56.9%	10,417	0.9%	153	3.4%	32	0.3%
PGBGSGN	1,080	13.5%	1,420	0.1%	25	2.3%	12	0.9%
PGBLVG	885	11.1%	24,474	2.2%	67	7.6%	34	0.1%
PGBRSGH	39	0.5%	37	0.0%	0	0.0%	0	0.0%
PGTGSGH	669	8.4%	2,173	0.2%	28	4.2%	11	0.5%
PGTGSGN	136	1.7%	375	0.0%	7	5.2%	2	0.4%
PGTLVG	497	6.2%	40,205	3.6%	53	10.7%	230	0.6%
PGTLVGI	38	0.5%	20,802	1.9%	3	7.9%	0	0.0%
PGTTSGF	18	0.2%	13,767	1.2%	0	0.0%	0	0.0%
PGTTSGNF	58	0.7%	60,257	5.4%	1	1.7%	0	0.0%
Masked Categories	31	0.4%	933,468	84.3%	2	6.5%	0	0.0%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-332 LEED Certification, PSE&G Gas Industrial

This table has been removed to protect confidentiality.

Table 5-333 Gas Consumption, PSE&G Gas Industrial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<5,000 therms	5,845	73.0%	8,275	0.8%	174	3.0%	24	0.3%
5,000-12,499 therms	986	12.3%	7,885	0.7%	57	5.8%	55	0.7%
12,500-39,999 therms	682	8.5%	15,147	1.4%	60	8.8%	61	0.4%
40,000-149,999 therms	307	3.8%	22,597	2.0%	31	10.1%	181	0.8%
>=150,000 therms	184	2.3%	1,053,493	95.1%	17	9.2%	0	0.0%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-334 Woman/Minority Owned Status, PSE&G Gas Industrial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman or Woman-Minority business owner	33	0.4%	428	0.0%	0	0.0%	0	0.0%
Minority business owner	528	6.6%	3,804	0.3%	16	3.0%	6	0.2%
Not woman or minority business owner	832	10.4%	7,127	0.6%	38	4.6%	11	0.2%
Unknown	6,610	82.6%	1,096,037	99.0%	285	4.3%	304	0.0%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-335 Number of Tenants in Structure, PSE&G Gas Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	1,331	16.6%	37,817	3.4%	64	4.8%	34	0.1%
2 to 5	18.6%	1,543	19.3%	653,213	59.0%	63	4.1%	32	0.0%
6 to 10	2.4%	271	3.4%	7,164	0.7%	11	4.1%	14	0.2%
11 to 20	1.0%	122	1.5%	1,044	0.1%	10	8.2%	1	0.1%
>20	0.4%	132	1.7%	4,188	0.4%	39	29.6%	0	0.0%
Unknown	0.0%	4,605	57.5%	403,972	36.5%	152	3.3%	240	0.1%
Total⁶⁰	97.0%	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

⁶⁰ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-336 Square Footage of Business, PSE&G Gas Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,499	1,987	24.8%	16,369	1.5%	53	2.7%	23	0.1%
1,500-2,499	1,284	16.0%	250,982	22.7%	48	3.7%	30	0.0%
2,500-4,999	914	11.4%	12,387	1.1%	42	4.6%	32	0.3%
5,000-9,999	464	5.8%	80,673	7.3%	38	8.2%	13	0.0%
10,000-19,999	330	4.1%	12,507	1.1%	22	6.7%	3	0.0%
20,000-39,999	299	3.7%	12,346	1.1%	26	8.7%	5	0.0%
40,000-99,999	287	3.6%	17,288	1.6%	16	5.6%	11	0.1%
>=100,000	150	1.9%	411,597	37.2%	18	12.0%	8	0.0%
Unknown	2,289	28.6%	293,247	26.5%	76	3.3%	195	0.1%
Total	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%

Table 5-337 Two-digit NAICS Classification, PSE&G Gas Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Construction	9.8%	419	5.2%	7,125	0.6%	14	3.3%	1	0.0%
Manufacturing	0.0%	735	9.2%	42,680	3.9%	55	7.5%	14	0.0%
Wholesale Trade	3.7%	475	5.9%	15,232	1.4%	19	4.0%	2	0.0%
Retail Trade	0.0%	728	9.1%	8,034	0.7%	46	6.3%	15	0.2%
Transportation and Warehousing	0.0%	177	2.2%	73,659	6.7%	8	4.5%	5	0.0%
Information	1.9%	77	1.0%	592	0.1%	4	5.2%	0	0.0%
Finance and Insurance	4.7%	130	1.6%	236,948	21.4%	3	2.3%	12	0.0%
Real Estate	14.6%	202	2.5%	7,794	0.7%	5	2.5%	7	0.1%
Prof., Sci., & Tech.	19.6%	483	6.0%	7,502	0.7%	20	4.1%	8	0.1%
Management of Companies and Enterprises	0.0%	21	0.3%	745	0.1%	3	14.3%	4	0.5%
Admin, Support, & Waste Svcs.	7.8%	180	2.3%	1,807	0.2%	1	0.6%	0	0.0%
Educational Services	3.9%	110	1.4%	1,208	0.1%	6	5.5%	10	0.8%
Health Care and Social Assistance	10.8%	474	5.9%	5,922	0.5%	9	1.9%	10	0.2%
Arts, Ent. & Rec.	5.6%	65	0.8%	457	0.0%	3	4.6%	3	0.6%
Accommodation and Food Services	4.1%	288	3.6%	6,911	0.6%	9	3.1%	10	0.1%
Other Services	13.3%	597	7.5%	4,432	0.4%	27	4.5%	23	0.5%
Public Administration	0.0%	646	8.1%	11,588	1.1%	32	5.0%	11	0.1%
Unknown	0.0%	2,175	27.2%	292,925	26.5%	73	3.4%	185	0.1%
Masked Categories	0.3%	22	0.3%	381,833	34.5%	2	9.1%	0	0.0%
Total	100.0%	8,004	100.0%	1,107,397	100.0%	339	4.2%	321	0.0%



5.9 Rockland Electric Company

5.9.1 Key Findings and Recommendations

5.9.1.1 Key Residential Findings Rockland

Table 5-338 lists the statewide residential electric programs and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners and RKE's low-income direct install are designed to mitigate barriers for low-income households and Residential New Construction is for new builds. The remaining programs are for the general population.

Table 5-339 presents the results of the residential participation analysis for RKE for key population subgroups identified in the barriers analysis. Only moderate-income indicated barriers. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-338 Programs and Barriers: Rockland Residential

Organi zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – COOLAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■	■	■ ■	■	■ ■	■ ■
RKE	Low Income Direct Install	■	■	■ ■	■	■	■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-339 Barriers to Participation: Rockland Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁶¹	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	7%	6.1%	6.0%	No
Moderate income (250% to 400% FPL)		12%	5.0%	6.0%	Yes
Multi-family	Split incentives, complex buying process	6%	10.4%	5.6%	No
Primary language non-English	Lack of awareness, skepticism, complex buying process	Insufficient data available			
Renters	Split incentives	7%	8.5%	5.7%	No
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	1%	5.1%	6.0%	Yes
Hispanic households	Non-minority culture groups	6%	5.9%	6.0%	No
Younger households	Head of household 30 to 65	3%	6.4%	6.0%	No
Lower consuming households	2nd to 5th quintiles	13%	4.9%	5.8%	Yes
Smaller homes	1500+ sq ft	21%	4.7%	5.9%	Yes

⁶¹Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).

Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Low- and moderate-income households are critical segments. Unlike other utilities in the state, RKE did not have lower participation rates for low-income households, but did for moderate-income.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis shows lower participation for renters overall in the state, but these patterns were not seen for RKE. Multi-family units were also not found to participate at lower rates in Rockland, as was also true statewide.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities statewide. For RKE, African American participation was lower than for non-minorities, but Hispanic participation was not lower.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tend to have lower participation rates. However, this trend was not observed for RKE.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for RKE. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

5.9.1.2 Key Residential Recommendations Rockland

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
2. For moderate-income customers, consider specific initiatives with targeted outreach and streamlined participation processes. To simplify the buying process, consider whole-house approaches, such as the weatherization programs offered to moderate-income customers by ETG and SJG. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment

with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.

3. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
4. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest electric consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.9.1.3 Key Non-Residential Findings Rockland

Table 5-340 lists the programs for Rockland non-residential customers and indicates which barriers the programs are designed to mitigate as well as the barriers affecting these programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The Direct Install program is designed to mitigate barriers for small commercial and industrial customers, the Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-341 presents key results of the non-residential participation analysis by customer category. The data indicate that non-residential small businesses participate at a significantly lower rate than the rest of the non-residential population, as do multi-tenant customers and health care.

Table 5-342 provides participation rate analysis for additional customer categories. Additional categories with lower participation rates were customers with a single location, smaller facilities and fewer employees and minority/women owned businesses. In addition to participation increasing with size of facility and employees, participation rates also increased steadily with electric consumption but not with demand. For RKE, unlike statewide, population savings rates did not decline with increasing electric consumption.

Table 5-340 Programs and Barriers: Rockland Non-Residential

Organi- zation	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureaucratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Combined Heat & Power (CHP) - Fuel Cell	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■		■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-341 Barriers to Participation: Rockland Non-Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	97%	4.4%	19.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	6%	0.0%	0.0%	No
Multi-tenant	Split incentives, complex buying process	78%	5.3%	6.2%	Yes
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	28%	5.0%	5.3%	No
Health care		14%	2.0%	5.3%	Yes

Insufficient data available

Table 5-342 Additional Participation Analysis: RKE Non-Residential⁶²

Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Newer business (later than 2010)	53%	5.0%	5.3%	N
Minority/women-owned	25%	0.0%	4.2%	Y
Minority-owned	20%	0.0%	4.2%	Y
Smaller floorspace facilities (<5,000 sq ft)	74%	4.3%	8.0%	Y
Fewer employees (<20)	88%	4.0%	12.3%	Y
Single-location customers	91%	5.1%	6.1%	Y

⁶² Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

5.9.1.4 Key Non-Residential Recommendations Rockland

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4. Recommendations for RKE non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers
3. To mitigate lack of information for small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small companies.
4. To mitigate high upfront costs and lack of capital, provide small businesses and Health Care with higher incentive amounts than general larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
5. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.
6. To simplify the buying process for small business and address hurdles in health care and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
7. Create measure buckets targeted to the different NAICs classifications shown to have lower participation rates in the detailed metrics table. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
8. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.

5.9.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-343 Home Heating Fuel, Rockland Residential⁶³

Heating Fuel	ACS Distribution
Utility gas	80.4%
Bottled, tank, or LP gas	2.3%
Electricity	5.8%
Fuel oil, kerosene, etc.	10.2%
Coal or coke	0.1%
Wood	0.9%
Solar energy	0%
Other fuel	0.3%
No fuel used	0.1%
Total	100%

Table 5-344 Square Footage of Home, Rockland Residential

Square Footage	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
500 to 999	1,575	2.2%	6,163	1.1%	88	5.6%	20	0.3%
1,000-1,499	6,488	9.2%	34,985	6.5%	294	4.5%	143	0.4%
1,500-1,999	8,163	11.6%	52,310	9.7%	427	5.2%	133	0.3%
2,000-2,499	7,279	10.3%	54,222	10.0%	432	5.9%	128	0.2%
2,500-2,999	4,977	7.1%	45,627	8.5%	319	6.4%	88	0.2%
3,000-3,999	5,256	7.5%	60,153	11.1%	359	6.8%	83	0.1%
>=4,000	4,534	6.4%	87,342	16.2%	243	5.4%	56	0.1%
Unknown	32,201	45.7%	199,101	36.9%	1,827	5.7%	667	0.3%
Masked Categories	16	0.0%	83	0.0%	0	0.0%	0	0.0%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

⁶³ The table lists the percent of households in block groups that receive electricity from Rockland. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-345 Type of Home, Rockland Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single family	57,197	81.1%	476,785	88.3%	3,089	5.4%	1,145	0.2%
Multifamily	3,572	5.1%	15,986	3.0%	372	10.4%	36	0.2%
Mobile or Group home	136	0.2%	521	0.1%	133	97.8%	6	1.2%
Unknown	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-346 Household Income Status, Rockland Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
250% FPL or less	4,349	6.2%	20,301	3.8%	265	6.1%	122	0.6%
251 - 400% FPL	7,225	10.3%	41,484	7.7%	364	5.0%	156	0.4%
>400% FPL	49,331	70.0%	431,507	79.9%	2,965	6.0%	909	0.2%
Unknown	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-347 Household Cultural Group, Rockland Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
African American	313	0.4%	2,539	0.5%	16	5.1%	4	0.2%
Central and Southwest Asian	479	0.7%	4,917	0.9%	24	5.0%	3	0.1%
Eastern European	3,712	5.3%	28,579	5.3%	196	5.3%	69	0.2%
Far Eastern	4,427	6.3%	29,642	5.5%	227	5.1%	52	0.2%
Hispanic	3,550	5.0%	27,872	5.2%	208	5.9%	55	0.2%
Middle Eastern	998	1.4%	9,665	1.8%	52	5.2%	16	0.2%
Jewish	3,635	5.2%	36,727	6.8%	245	6.7%	60	0.2%
Mediterranean	11,015	15.6%	94,622	17.5%	658	6.0%	166	0.2%
Pacific Islander	165	0.2%	1,306	0.2%	4	2.4%	1	0.1%
Scandinavian	965	1.4%	7,456	1.4%	50	5.2%	13	0.2%
South Asian	1,207	1.7%	10,726	2.0%	65	5.4%	107	1.0%
Western European	25,946	36.8%	202,342	37.5%	1,578	6.1%	558	0.3%
Unknown	14,055	19.9%	83,435	15.5%	664	4.7%	216	0.3%
Masked Categories	22	0.0%	160	0.0%	2	9.1%	0	0.0%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-348 Head of Household Age, Rockland Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
18 to 24	417	0.6%	2,200	0.4%	34	8.2%	5	0.2%
25 to 29	1,161	1.7%	6,705	1.2%	67	5.8%	10	0.2%
30 to 34	2,250	3.2%	13,556	2.5%	119	5.3%	31	0.2%
35 to 44	7,844	11.1%	59,307	11.0%	523	6.7%	157	0.3%
45 to 54	12,745	18.1%	119,602	22.2%	744	5.8%	299	0.3%
55 to 64	15,273	21.7%	135,973	25.2%	905	5.9%	249	0.2%
65 and over	21,215	30.1%	155,949	28.9%	1,202	5.7%	436	0.3%
Unknown	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-349 Home Rate Code, Rockland Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	839	1.2%	0	0.0%	21	2.5%	2	Inf
301	61,999	88.0%	472,984	87.6%	3,497	5.6%	1,038	0.2%
305	127	0.2%	891	0.2%	10	7.9%	2	0.3%
505	1,654	2.4%	8,507	1.6%	90	5.4%	24	0.3%
801	1,627	2.3%	13,117	2.4%	91	5.6%	57	0.4%
CU4	139	0.2%	11	0.0%	3	2.2%	0	0.9%
X3E	648	0.9%	4,450	0.8%	46	7.1%	37	0.8%
Y3E	3,027	4.3%	32,400	6.0%	212	7.0%	155	0.5%
Y8E	123	0.2%	1,307	0.2%	6	4.9%	1	0.1%
Masked	306	0.4%	6,318	1.2%	13	4.2%	3	0.0%
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-350 LEED Certification, Rockland Residential

This table has been removed to protect confidentiality.

Table 5-351 Electric Consumption, Rockland Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	8,807	12.5%	7,613	1.4%	432	4.9%	88	1.2%
Second Quintile (20-39)	13,997	19.9%	44,146	8.2%	837	6.0%	252	0.6%
Third Quintile (40-59)	16,450	23.3%	90,000	16.7%	922	5.6%	303	0.3%
Fourth Quintile (60-79)	15,431	21.9%	129,448	24.0%	933	6.1%	297	0.2%
Fifth Quintile (80-100)	14,965	21.2%	268,781	49.8%	844	5.6%	377	0.1%
Unknown	839	1.2%	0	0.0%	21	2.5%	2	Inf
Total	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-352. Primary Language at Home, Rockland Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	96.9%	10,368	14.7%	79,624	14.8%	557	5.4%	235	0.3%
Unknown	0.0%	60,042	85.2%	459,838	85.2%	3,428	5.7%	1,084	0.2%
Masked Categories	3.2%	79	0.1%	526	0.1%	4	5.1%	0	0.0%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-353 Household Income, Rockland Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
< \$20,000	5.3%	616	0.9%	2,071	0.4%	50	8.1%	9	0.5%
\$20,000 to \$29,999	5.2%	1,023	1.5%	3,737	0.7%	80	7.8%	23	0.6%
\$30,000 to \$39,999	4.9%	1,234	1.8%	5,070	0.9%	69	5.6%	33	0.6%
\$40,000 to \$49,999	5.0%	1,583	2.3%	6,902	1.3%	54	3.4%	14	0.2%
\$50,000 to \$59,999	5.5%	2,024	2.9%	9,750	1.8%	94	4.6%	83	0.9%
\$60,000 to \$99,999	22.6%	9,882	14.0%	52,246	9.7%	503	5.1%	302	0.6%
\$100,000 to \$124,999	12.4%	7,191	10.2%	43,926	8.1%	395	5.5%	99	0.2%
\$125,000 to \$149,999	10.4%	7,108	10.1%	48,250	8.9%	410	5.8%	113	0.2%
\$150,000 to \$199,999	15.0%	10,258	14.6%	78,781	14.6%	628	6.1%	200	0.3%
>=\$200,000	13.8%	19,986	28.4%	242,558	44.9%	1,311	6.6%	310	0.1%
Unknown	0.0%	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-354 Home Built, Rockland Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1939 or earlier	10.9%	4,041	5.7%	27,769	5.1%	177	4.4%	59	0.2%
1940-1949	6.2%	3,056	4.3%	19,848	3.7%	142	4.7%	80	0.4%
1950-1959	19.1%	12,558	17.8%	88,748	16.4%	663	5.3%	238	0.3%
1960-1969	18.7%	15,261	21.7%	123,255	22.8%	931	6.1%	306	0.3%
1970-1979	11.6%	8,500	12.1%	75,670	14.0%	514	6.1%	170	0.2%
1980-1989	12.9%	6,791	9.6%	60,986	11.3%	359	5.3%	104	0.2%
1990-1999	11.1%	3,843	5.5%	39,374	7.3%	238	6.2%	155	0.4%
2000-2009	8.2%	2,053	2.9%	31,759	5.9%	162	7.9%	19	0.1%
2010-2013	0.9%	211	0.3%	2,928	0.5%	13	6.2%	2	0.1%
2014 or later	0.5%	4,591	6.5%	22,954	4.3%	395	8.6%	53	0.2%
Unknown	0.0%	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-355 Number of Household Members, Rockland Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
0	0.0%	203	0.3%	915	0.2%	8	3.9%	2	0.2%
1	19.1%	14,726	20.9%	88,094	16.3%	841	5.7%	312	0.4%
2	31.7%	11,888	16.9%	85,693	15.9%	739	6.2%	224	0.3%
3	18.7%	8,640	12.3%	68,386	12.7%	491	5.7%	155	0.2%
4	20.8%	7,486	10.6%	66,299	12.3%	412	5.5%	153	0.2%
5	7.2%	6,450	9.2%	60,615	11.2%	382	5.9%	136	0.2%
6	1.9%	5,292	7.5%	54,130	10.0%	322	6.1%	104	0.2%
7	0.5%	3,878	5.5%	42,358	7.8%	233	6.0%	63	0.2%
8	0.0%	2,342	3.3%	26,802	5.0%	166	7.1%	37	0.1%
Unknown	0.0%	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-356 Home Ownership Status, Rockland Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Owner occupied	87.1%	56,647	80.4%	474,237	87.8%	3,234	5.7%	1,160	0.2%
Renter occupied	12.9%	4,258	6.0%	19,055	3.5%	360	8.5%	26	0.1%
Unknown	0.0%	9,584	13.6%	46,696	8.7%	395	4.1%	132	0.3%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

Table 5-357 Home Value, Rockland Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than \$100,000	2.3%	159	0.2%	692	0.1%	8	5.0%	6	0.9%
\$100,000-\$124,999	0.9%	144	0.2%	603	0.1%	8	5.6%	7	1.2%
\$125,000-\$149,999	0.7%	161	0.2%	662	0.1%	8	5.0%	5	0.7%
\$150,000-\$174,999	1.3%	354	0.5%	1,394	0.3%	18	5.1%	8	0.6%
\$175,000-\$199,999	1.6%	540	0.8%	2,349	0.4%	26	4.8%	11	0.5%
\$200,000-\$249,999	5.3%	2,120	3.0%	9,840	1.8%	117	5.5%	61	0.6%
\$250,000-\$299,999	6.6%	2,909	4.1%	14,763	2.7%	221	7.6%	73	0.5%
\$300,000-\$399,999	14.9%	7,335	10.4%	38,882	7.2%	351	4.8%	193	0.5%
\$400,000-\$499,999	15.2%	8,597	12.2%	49,561	9.2%	424	4.9%	174	0.4%
\$500,000-\$999,999	39.0%	27,189	38.6%	209,631	38.8%	1,635	6.0%	521	0.3%
\$1,000,000 or more	12.3%	9,532	13.5%	159,012	29.5%	555	5.8%	117	0.1%
Unknown	0.0%	11,449	16.2%	52,597	9.7%	618	5.4%	142	0.3%
Total	100.0%	70,489	100.0%	539,988	100.0%	3,989	5.7%	1,318	0.2%

5.9.3 Non-Residential Metrics

All non-residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-358 Primary Language at Business, Rockland Non-Residential

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
English	285	3.0%	6,695	1.1%	0	0.0%	0	0.0%
Limited English	17	0.2%	510	0.1%	0	0.0%	0	0.0%
Unknown	9,246	96.8%	602,893	98.8%	407	4.4%	17,996	3.0%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-359 Business Opened, Rockland Non-Residential

Business Opened	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1980 to 1989	687	7.2%	45,251	7.4%	53	7.7%	1,563	3.5%
1990 to 1999	659	6.9%	43,874	7.2%	19	2.9%	1,189	2.7%
2000 to 2009	1,315	13.8%	104,860	17.2%	70	5.3%	7,029	6.7%
2010 to 2013	1,209	12.7%	115,798	19.0%	50	4.1%	1,749	1.5%
2014 or later	1,735	18.2%	155,861	25.6%	97	5.6%	4,434	2.8%
Unknown	3,943	41.3%	144,454	23.7%	118	3.0%	2,032	1.4%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-360 Number of Employees, Rockland Non-Residential

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
1 to 4	2,773	29.0%	178,620	29.3%	103	3.7%	4,440	2.5%
5 to 9	1,243	13.0%	112,749	18.5%	53	4.3%	2,181	1.9%
10 to 19	611	6.4%	38,938	6.4%	31	5.1%	306	0.8%
20 to 49	427	4.5%	43,082	7.1%	44	10.3%	2,127	4.9%
50 to 99	117	1.2%	26,821	4.4%	17	14.5%	411	1.5%
100 to 249	76	0.8%	37,160	6.1%	15	19.7%	5,673	15.3%
Unknown	4,290	44.9%	164,191	26.9%	144	3.4%	2,857	1.7%
Masked Categories	11	0.1%	8,537	1.4%	0	0.0%	0	0.0%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-361 Business Ownership Status, Rockland Non-Residential

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Single location	5,078	53.2%	337,503	55.3%	257	5.1%	13,780	4.1%
Branch	483	5.1%	108,704	17.8%	26	5.4%	1,418	1.3%
Headquarters	19	0.2%	11,440	1.9%	2	10.5%	501	4.4%
Subsidiary	25	0.3%	7,996	1.3%	4	16.0%	265	3.3%
Unknown	3,943	41.3%	144,454	23.7%	118	3.0%	2,032	1.4%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-362 Business Rate Code, Rockland Non-Residential

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Not provided	66	0.7%	0	0.0%	3	4.6%	17	Inf
102	5,710	59.8%	141,746	23.2%	204	3.6%	2,915	2.1%
206	222	2.3%	971	0.2%	5	2.3%	66	6.8%
301	111	1.2%	2,092	0.3%	2	1.8%	294	14.1%
302	105	1.1%	43,557	7.1%	11	10.5%	1,228	2.8%
402	91	1.0%	5,205	0.9%	4	4.4%	8	0.2%
406	77	0.8%	1,160	0.2%	2	2.6%	0	0.0%
502	21	0.2%	8,605	1.4%	1	4.8%	27	0.3%
802	804	8.4%	2,517	0.4%	14	1.7%	8	0.3%
902	568	6.0%	587	0.1%	12	2.1%	1	0.1%
X1D	152	1.6%	6,182	1.0%	10	6.6%	40	0.6%
X8D	71	0.7%	288	0.1%	1	1.4%	11	3.8%
Y1D	1,147	12.0%	80,573	13.2%	88	7.7%	1,808	2.2%
Y3D	79	0.8%	40,574	6.7%	19	24.1%	5,936	14.6%
Y3E	20	0.2%	729	0.1%	1	5.0%	173	23.7%
Y3R	21	0.2%	37,525	6.2%	5	23.8%	1,285	3.4%
Y4D	38	0.4%	6,970	1.1%	3	7.9%	16	0.2%
Y5D	19	0.2%	15,260	2.5%	8	42.1%	1,676	11.0%
Y8D	36	0.4%	495	0.1%	1	2.8%	21	4.3%
Y9D	36	0.4%	50	0.0%	0	0.0%	0	0.0%
Masked Categories	154	1.6%	215,012	35.2%	13	8.4%	2,465	1.1%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-363 LEED Certification, Rockland Non-Residential

This table has been removed to protect confidentiality.

Table 5-364 Electric Consumption, Rockland Non-Residential

Electric Consumption	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
First Quintile (0-19)	1,675	17.5%	683	0.1%	20	1.2%	7	1.0%
Second Quintile (20-39)	2,123	22.2%	5,990	1.0%	41	1.9%	196	3.3%
Third Quintile (40-59)	1,945	20.4%	13,975	2.3%	57	2.9%	456	3.3%
Fourth Quintile (60-79)	1,835	19.2%	37,263	6.1%	90	4.9%	920	2.5%
Fifth Quintile (80-100)	1,904	19.9%	552,186	90.5%	196	10.3%	16,401	3.0%
Unknown	66	0.7%	0	0.0%	3	4.6%	17	Inf
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-365 Electric Demand, Rockland Non-Residential

Electric Demand	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
<=100 kw	6,864	71.9%	173,983	28.5%	280	4.1%	4,162	2.4%
101 to 200 kw	216	2.3%	64,110	10.5%	34	15.7%	1,863	2.9%
201 to 399 kw	114	1.2%	73,152	12.0%	25	21.9%	2,912	4.0%
>=400 kw	93	1.0%	272,744	44.7%	15	16.1%	8,357	3.1%
Unknown	2,261	23.7%	26,107	4.3%	53	2.3%	702	2.7%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-366 Woman/Minority Owned Status, Rockland Non-Residential

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Woman or woman-minority business owner	62	0.7%	1,414	0.3%	0	0.0%	0	0.0%
Minority business owner	252	2.6%	5,949	1.0%	0	0.0%	0	0.0%
Not woman or minority business owner	946	9.9%	35,615	5.8%	40	4.2%	547	1.5%
Unknown	8,287	86.8%	567,119	93.0%	367	4.4%	17,449	3.1%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-367 Number of Tenants in Structure, Rockland Non-Residential

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
One	74.7%	860	9.0%	139,594	22.9%	53	6.2%	6,793	4.9%
2 to 5	18.6%	1,647	17.3%	141,246	23.2%	85	5.2%	3,414	2.4%
6 to 10	2.4%	546	5.7%	22,392	3.7%	44	8.1%	1,008	4.5%
11 to 20	1.0%	426	4.5%	45,272	7.4%	17	4.0%	1,715	3.8%
>20	0.4%	422	4.4%	45,369	7.4%	15	3.6%	1,012	2.2%
Unknown	0.0%	5,647	59.1%	216,224	35.4%	193	3.4%	4,054	1.9%
Total⁶⁴	97.0%	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

⁶⁴ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-368 Square Footage of Business, Rockland Non-Residential

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Less than 1,499	1,675	17.5%	58,694	9.6%	58	3.5%	1,375	2.3%
1,500 to 2,499	1,296	13.6%	96,254	15.8%	65	5.0%	1,864	1.9%
2,500 to 4,999	1,020	10.7%	110,258	18.1%	48	4.7%	3,044	2.8%
5,000 to 9,999	492	5.2%	34,376	5.6%	21	4.3%	1,291	3.8%
10,000 to 19,999	310	3.3%	45,805	7.5%	18	5.8%	643	1.4%
20,000 to 39,999	238	2.5%	28,849	4.7%	32	13.5%	451	1.6%
40,000 to 99,999	276	2.9%	41,357	6.8%	27	9.8%	1,329	3.2%
100,000 or more	95	1.0%	43,268	7.1%	15	15.8%	5,673	13.1%
Unknown	4,146	43.4%	151,236	24.8%	123	3.0%	2,327	1.5%
Total	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%

Table 5-369 Two-digit NAICS Classification, Rockland Non-Residential

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (MWh)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (MWh)	Population Savings Rate
Ag & Forestry	0.1%	40	0.4%	882	0.1%	5	12.5%	34	3.9%
Construction	10.0%	273	2.9%	6,963	1.1%	4	1.5%	121	1.7%
Manufacturing	0.0%	279	2.9%	40,426	6.6%	24	8.6%	923	2.3%
Wholesale Trade	4.8%	243	2.6%	26,769	4.4%	31	12.8%	5,337	19.9%
Retail Trade	0.0%	639	6.7%	62,100	10.2%	32	5.0%	1,897	3.1%
Transportation and Warehousing	0.0%	101	1.1%	4,404	0.7%	2	2.0%	0	0.0%
Information	1.8%	96	1.0%	16,329	2.7%	2	2.1%	75	0.5%
Finance and Insurance	4.4%	253	2.7%	11,545	1.9%	17	6.7%	809	7.0%
Real Estate	15.5%	246	2.6%	47,915	7.9%	9	3.7%	101	0.2%
Prof., Sci., & Tech.	18.4%	341	3.6%	18,707	3.1%	19	5.6%	340	1.8%
Admin, Support, & Waste Svcs.	7.6%	193	2.0%	29,589	4.9%	21	10.9%	268	0.9%
Educational Services	3.7%	285	3.0%	23,673	3.9%	33	11.6%	1,396	5.9%
Health Care and Social Assistance	11.0%	785	8.2%	51,804	8.5%	16	2.0%	1,762	3.4%
Arts, Ent. & Rec.	4.9%	117	1.2%	9,930	1.6%	2	1.7%	356	3.6%
Accommodation and Food Services	3.8%	476	5.0%	36,676	6.0%	16	3.4%	1,109	3.0%
Other Services	13.9%	712	7.5%	45,717	7.5%	27	3.8%	575	1.3%
Public Administration	0.0%	500	5.2%	29,773	4.9%	29	5.8%	860	2.9%
Unknown	0.0%	3,943	41.3%	144,454	23.7%	118	3.0%	2,032	1.4%
Masked Categories	0.1%	26	0.3%	2,439	0.4%	0	0.0%	0	0.0%
Total	100.0%	9,548	100.0%	610,097	100.0%	407	4.3%	17,996	3.0%



5.10 South Jersey Gas

5.10.1 Key Findings and Recommendations

5.10.1.1 Key Residential Findings SJG

Table 5-370 lists the programs for SJG residential customers and indicates which barriers programs of these types are designed to mitigate as well as the barriers that in general affect such programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

Comfort Partners is designed to mitigate barriers for low-income households and Residential New Construction is for new builds. SJG also offers a weatherization program for moderate-income customers. The remaining programs are for the general population.

Table 5-371 presents the results of the residential participation analysis for SJG for key population subgroups identified in the barriers analysis. These subgroups include low and moderate income, renters, households in multi-family dwelling units, and customers whose primary language is not English. The lower portion of the table presents results for additional demographic groups with differential participation rates observed for at least some utilities in the state.

Table 5-370 Programs and Barriers: South Jersey Gas Residential


Organi zation	Program Name	Barriers					
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism
Joint	Comfort Partners	■ ■	■	■ ■	■	■	■ ■
BPU	Energy Efficient Products	■ ■		■ ■	■	■	■ ■
BPU	Energy Efficient Products - Retail Products Platform	■ ■		■ ■	■	■	■ ■
BPU	Home Performance with ENERGY STAR	■ ■	■ ■	■ ■		■ ■	■ ■
BPU	Residential HVAC – WARMAdvantage	■ ■	■ ■	■	■		■ ■
BPU	Residential New Construction	■ ■	■	■ ■	■	■ ■	■ ■
SJG	Behavioral			■	■	■	■ ■
SJG	Online Marketplace	■ ■		■ ■	■		■ ■
SJG	GLE-Weatherization	■		■ ■	■		■ ■
SJG	Home Energy Assessment	■ ■		■ ■		■ ■	■ ■
SJG	Home Performance Loans	■	■	■ ■	■		■ ■
SJG	HVAC Loans	■	■	■ ■	■		■ ■
SJG	HVAC Rebate	■ ■		■ ■	■		■ ■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-371 Barriers to Participation: South Jersey Gas Residential

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size ⁶⁵	Subpopulation	Rest of Pop.	
Low income (≤250% FPL)	Lack of awareness, skepticism, resistance to change, high upfront costs, insufficient access to financing, supply chain limitations	34%	7.3%	13.5%	Yes
Moderate income (250% to 400% FPL)		22%	10.9%	13.5%	Yes
Multi-family	Split incentives, complex buying process	6%	6.8%	11.1%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	22%	4.2%	11.4%	Yes
Renters	Split incentives	15%	6.2%	11.6%	Yes
Description	Larger population compared to	Relative size	Subpopulation	Comparison Pop.	Subpopulation Barrier(s) Indicated?
African American households	Non-minority culture groups	5%	6.2%	11.1%	Yes
Hispanic households	Non-minority culture groups	9%	8.3%	11.1%	Yes
Younger households	Head of household 30 to 65	6%	9.1%	11.4%	Yes
Lower consuming households	2nd to 5th quintiles	24%	6.4%	11.0%	Yes
Smaller homes	1500+ sq ft	34%	9.5%	15.0%	Yes

⁶⁵Relative size was calculated as the percent of Unique IDs with a known characteristic that fall into the subpopulation of interest. For example, if there are 120 Unique IDs, 20 of which have an unknown on a certain characteristic and 50 of which fall into the subpopulation of interest, the relative size would be 50% (50 of 100).



Following are observations based on the participation rates summarized above, the statewide results, and additional detail in the residential metrics tables.

Limited Income Households

Low- and moderate-income households are critical segments. The participation analysis indicated barriers for low-income and moderate-income customers households for SJG. Even with Comfort Partners, barriers remain in low-income markets.

Renters and Multi-family Units

The renter market typically has high barriers, with a particular barrier of split incentives. The analysis indicated barriers do for renters exist in SJG. Split incentives could be particularly relevant for gas heat, where landlords may be unwilling to invest in expensive envelope, furnace and boiler measures in cases where they don't pay the bills.

SJG customers in multi-family units also show lower participation rates compared to other residential customers, unlike multi-family customers in the rest of the state.

Limited English

Limited English exacerbates lack of awareness of program availability and benefits of energy efficiency and as makes participation more challenging. Primary language in the household is identified for only a small fraction of households in the data base. The available data do indicate lower participation rates for households with a primary language other than English for SJG as well as statewide.

Minority Cultural Groups

The largest minority cultural groups in the state, Hispanic and African-American, had low participation rates relative to non-minorities for SJG as well as statewide.

Trends over quantitative customer characteristics

Certain quantitative characteristics are related to participation, with increasing levels of the characteristic associated with increasing or decreasing participation rates, across a broad range. These characteristics include the following:

Age of head of household: Statewide, households with younger heads of household tend to have lower participation rates. This trend was observed also for SJG.

Consumption level and home size: Statewide, participation rates increased substantially moving from lower to higher consumption bands. Similar patterns were seen in relation to home size. These patterns were likewise observed for SJG. Conversely, then, smaller customers in terms of consumption level or home size are participating at lower rates.

On the other hand, home value was not found to have a strong relationship to participation rates.

Behavioral Programs

Behavioral programs are a general population offering providing information and encouragement to a randomly assigned set of customers, referred to as treatment customers. As discussed in Section 5.1, the metrics tables do not include behavioral program treatment customers that did not participate in

any other program. Accordingly, these programs are given special attention here. SJG already delivers a behavioral program. As of mid-Q4 2019, SJG had analyzed data for and communicated with over 215,000 treatment customers. SJG's behavioral program is an important ongoing tool for overcoming information and awareness barriers, simplifying decision-making and delivering cost-effective savings across the SJG residential customer base. SJG may choose to select treatment groups, and properly matched random control, within subpopulations it observes in the future participating at relatively low rates.

5.10.1.2 Residential Recommendations SJG

General recommendations to mitigate barriers to residential energy efficiency are provided in Section 4.2. Recommendations for residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate high upfront costs and lack of capital, continue to offer no-cost direct install programs for low-income customers. To remove health and safety barriers blocking low-income retrofits, explore allocating more budget to repairs and leveraging budgets from other funding sources.
2. To address barriers of lack of awareness and skepticism, increase partnership with trusted local agencies, particularly agencies representing limited income and lower participating cultural and language groups. Provide outreach and messaging from credible sources, including utilities, community groups, and local leaders. Train residents within the community for outreach, including door-to-door approaches, and delivery of programs.
3. Consider expanding SJG's existing initiatives for moderate-income customers, perhaps with targeted outreach and/or streamlined participation processes. To mitigate the barriers of high upfront costs and access to financing, offer higher rebates and on-bill repayment with preferential terms for any customer portion of costs, building on the example of NJNG's moderate-income initiatives.
4. Explore improving access for cultural and language minorities by providing more outreach materials in Spanish and potentially other languages.
5. To address split incentives for renters, offer free installation of low cost measures. Provide technical and outreach assistance to property owners and managers in developing and marketing green properties to gain higher rents.
6. For large multi-family buildings, e.g., four or more units, explore or expand outreach initiatives organized through commercial property owners and managers who already have the trust of their residents.
7. To address supply chain issues in economically disadvantaged as well as rural communities, target distributor and retailer initiatives to these areas and encourage code changes, particularly for affordable housing.
8. Further explore lower participation rates by younger households and consider targeted initiatives and marketing.
9. To reduce barriers to full implementation of energy efficiency by customers, increase outreach to customers in the highest consumption levels, including outreach to prior participants to pursue more measures. Benchmarking reports and high usage alerts can be paired with promotional messaging for energy efficiency offers to these customers.

5.10.1.3 Key Commercial and Industrial Findings SJG

Table 5-372 lists the programs for SJG non-residential customers and indicates which barriers the programs are designed to mitigate as well as the barriers affecting these programs. The classifications of barriers mitigated by and affecting each program could be subject to different interpretations. Nonetheless, the table provides some context for the findings on which customer categories appear to experience particular barriers to participation.

The statewide and SJG Direct Install programs are designed to mitigate barriers for small commercial and industrial customers. The Local Government program is designed to address barriers for municipalities and the two New Construction programs are for new builds. The remaining programs are for the general population.

Table 5-373 presents key results of the commercial participation analysis and Table 5-374 presents the industrial participation analysis. The data indicate that commercial and industrial small businesses participate at a relatively low rate. Non-English primary language and health care also had lower participation rates for the commercial sector, but for both categories corresponding data for the industrial sector were too thin for an assessment. Industrial institutional customers also had relatively low participation rates.

Table 5-375 provides participation rate analysis for additional customer categories. For commercial, additional categories with lower participation rates were newer businesses, minority/women owned businesses and customers with a single location, smaller facilities and fewer employees. For industrial, customers with fewer employees had relatively low participation rates. In addition to participation increasing with size of employees, commercial and industrial participation rates also increased steadily with gas consumption. Population savings rates were flat across gas consumption tiers.

Table 5-372 Programs and Barriers: South Jersey Gas Commercial & Industrial

Organi- zation	Program Name	Barriers						
		High upfront costs	Insufficient access to financing	Lack of awareness	Split incentives	Complex buying process	Skepticism	Bureaucratic
BPU	C&I New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
BPU	C&I Retrofit	■ ■	■	■ ■		■	■ ■	■
BPU	Customer Tailored EE Pilot	■ ■	■	■ ■		■ ■	■ ■	■
BPU	Direct Install	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Local Government Energy Audit	■ ■	■	■ ■		■	■ ■	■
BPU	Pay-for-Performance	■ ■	■ ■	■ ■		■	■ ■	■
BPU	Pay-for-Performance New Construction	■ ■	■ ■	■ ■	■	■	■ ■	■
SJG	ESV-Audit Direct Install	■	■	■ ■		■	■ ■	■
SJG	CI Loans	■	■	■ ■		■ ■	■ ■	■

■ program type affected by barrier ■ program type designed to mitigate barrier

Table 5-373 Barriers to Participation: South Jersey Gas Commercial

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	89%	2.3%	6.9%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	14%	0.9%	1.6%	Yes
Multi-tenant	Split incentives, complex buying process	71%	3.4%	2.5%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	24%	4.0%	2.4%	No
Health care		13%	2.3%	2.4%	Yes

Table 5-374 Barriers to Participation: South Jersey Gas Industrial

Subpopulation			Participation Rate		Subpopulation Barrier(s) Indicated?
Description	Common barriers affecting	Relative size	Subpopulation	Rest of Pop.	
Small business	Lack of awareness, high upfront costs, insufficient access to financing, complex buying process, supply chain limitations	84%	3.9%	7.3%	Yes
Primary language non-English	Lack of awareness, skepticism, complex buying process	Subpopulation data unavailable			
Multi-tenant	Split incentives, complex buying process	60%	5.9%	4.6%	No
Institutional customers	High upfront costs, insufficient access to financing, complex buying process, organizational practices & customs	21%	3.9%	4.6%	Yes
Health care		Subpopulation data unavailable			

Table 5-375 Additional Participation Analysis: SJG Commercial and Industrial⁶⁶


Subpopulation	Subpopulation Relative Size	Subpopulation Participation Rate	Rest of Pop. Participation Rate	Subpopulation Barrier(s) Indicated?
Commercial				
Newer business (later than 2010)	51%	2.4%	3.3%	Y
Minority/women-owned	27%	1.8%	2.1%	Y
Minority-owned	22%	1.6%	2.1%	Y
Smaller floorspace facilities (<5,000 sq ft)	77%	2.2%	5.1%	Y
Fewer employees (<20)	89%	2.3%	6.8%	Y
Single-location customers	89%	2.7%	3.8%	Y
Industrial				
Newer business	42%	2.9%	3.2%	N
Minority/women-owned	0%	Insufficient data.		
Minority-owned	0%			
Smaller floorspace facilities	55%	4.0%	2.1%	N
Fewer employees	68%	2.5%	3.2%	Y
Single-location customers	88%	3.2%	2.6%	N

5.10.1.4 Commercial and Industrial Recommendations SJG

General recommendations to mitigate barriers to non-residential energy efficiency are provided in Section 4.2. Recommendations for non-residential customer categories shown to not fully be accessing energy efficiency opportunities include the following:

1. To mitigate lack of awareness and skepticism for small businesses, consider increased partnership with trusted local agencies, door-to-door outreach and hiring program delivery staff within local communities for direct install initiatives.
2. To mitigate lack of information for businesses with non-English primary language, explore providing more outreach materials in Spanish and other languages. Even businesses with bilingual management that primarily use English might be more receptive to outreach in a native non-English language.
3. Explore specific outreach to minority- and women-owned businesses, leveraging targeted business groups and organizations that support these customers.
4. To mitigate lack of information for newer business owners and small businesses, consider partnerships with chambers of commerce, the Small Business Administration and other organizations that support small and starting companies.
5. To mitigate high upfront costs and lack of capital, provide small businesses, health care and industrial institutional customers with higher incentive amounts than larger businesses. Also offer utility on-bill repayment to cover the full cost of projects upfront for these customer categories.
6. To simplify the buying process for small business, provide services that include free direct install measures that can be installed on a first visit.

⁶⁶ Subpopulation relative size in this table is based on UniqueIDs with known data for each respective customer category. Public data were not used.

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7. To simplify the buying process for small business and address hurdles for institutional and other bureaucratic organizations, use technology to streamline processes with techniques such as loading of CIS, consumption and demand data to pre-populate audits, audits performed in advance over the phone or on tablets, e-signatures for program agreements and automated approvals for utility online bill repayment programs, e.g., using an eligibility engine to pull credit or arrears data.
 8. Create measure buckets targeted to the different NAICs classifications shown to have lower participation rates in the detailed metrics table. Create messaging and materials that speaks the language of each unique group, including case studies from satisfied and successful prior participants. Design delivery and processes to work with the group's typical operating process.
 9. To address supply chain issues serving small businesses, target distributor and retailer initiatives to economically disadvantaged and rural communities. Consider bulk measures purchases to ensure adequate supply for small business energy efficiency programs. Train distributors and retail outlets serving small commercial and industrial customers.
 10. High-consuming gas commercial customers had high participation rates and high population savings rates. High-consuming industrial gas customers had low participation and population savings rates. Further analysis should be conducted to assess potential for added industrial gas savings in the highest consumption tier.

5.10.2 Residential Metrics

All residential metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-376 Home Heating Type, SJG Residential⁶⁷

Heating Fuel	ACS Distribution
Utility gas	70.6%
Bottled, tank, or LP gas	2.6%
Electricity	13.1%
Fuel oil, kerosene, etc.	11.7%
Coal or coke	0.1%
Wood	1%
Solar energy	0.1%
Other fuel	0.6%
No fuel used	0.4%
Total	100%

Table 5-377 Square Footage of Home, SJG Residential

Square Footage of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<500	269	0.1%	80	0.0%	15	5.6%	1	0.8%
500-999	11,313	2.7%	4,767	1.8%	856	7.6%	50	1.0%
1,000-1,499	39,466	9.4%	21,456	8.2%	3,974	10.1%	277	1.3%
1,500-1,999	41,429	9.9%	27,837	10.7%	5,385	13.0%	371	1.3%
2,000-2,499	28,248	6.7%	22,051	8.5%	4,504	15.9%	313	1.4%
2,500-2,999	15,630	3.7%	14,379	5.5%	2,720	17.4%	212	1.5%
3,000-3,999	10,110	2.4%	11,187	4.3%	1,719	17.0%	125	1.1%
>=4,000	2,486	0.6%	3,590	1.4%	344	13.8%	35	1.0%
Unknown	271,751	64.6%	155,536	59.6%	22,342	8.2%	1,813	1.2%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

⁶⁷ The table lists the percent of households in block groups that receive gas from SJG. It does not distinguish between homes that receive or do not receive gas service. According to RECS, 86% of homes in the Mid-Atlantic region that receive gas service heat with utility gas.

Table 5-378 Type of Home, SJG Residential

Type of Home	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single family	336,664	80.0%	227,722	87.3%	37,045	11.0%	2,768	1.2%
Multifamily	23,373	5.6%	8,877	3.4%	1,590	6.8%	102	1.2%
Mobile home	890	0.2%	288	0.1%	311	34.9%	4	1.4%
Group home	174	0.0%	33	0.0%	0	0.0%	0	0.0%
Unknown	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-379 Household Income Status, SJG Residential

Household Income Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
250% FPL or less	124,344	29.6%	70,319	27.0%	9,137	7.4%	740	1.1%
251 - 400% FPL	80,606	19.2%	52,055	20.0%	8,781	10.9%	623	1.2%
>400% FPL	156,151	37.1%	114,545	43.9%	21,028	13.5%	1,511	1.3%
Unknown	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-380 Household Cultural Group, SJG Residential

Household Cultural Group	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
African American	15,391	3.7%	9,481	3.6%	947	6.2%	79	0.8%
Central and Southwest Asian	363	0.1%	244	0.1%	29	8.0%	1	0.6%
Eastern European	14,167	3.4%	9,369	3.6%	1,785	12.6%	128	1.4%
Far Eastern	5,869	1.4%	4,223	1.6%	718	12.2%	48	1.1%
Hispanic	29,431	7.0%	18,204	7.0%	2,452	8.3%	187	1.0%
Middle Eastern	3,018	0.7%	2,136	0.8%	303	10.0%	28	1.3%
Jewish	12,679	3.0%	8,799	3.4%	1,416	11.2%	104	1.2%
Mediterranean	51,456	12.2%	35,181	13.5%	6,093	11.8%	440	1.3%
Native American	109	0.0%	69	0.0%	16	14.7%	0	0.7%
Pacific Islander	1,148	0.3%	791	0.3%	119	10.4%	10	1.3%
Scandinavian	4,311	1.0%	2,769	1.1%	465	10.8%	26	0.9%
South Asian	3,498	0.8%	2,714	1.0%	616	17.6%	65	2.4%
Western European	194,153	46.2%	125,946	48.3%	21,095	10.9%	1,551	1.2%
Miscellaneous Other	7	0.0%	4	0.0%	0	0.0%	0	0.0%
Unknown	85,102	20.2%	40,953	15.7%	5,805	6.8%	528	1.3%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-381 Head of Household Age, SJG Residential

Head of Household Age	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
18 to 24	7,126	1.7%	3,399	1.3%	485	6.8%	37	1.1%
25 to 29	13,524	3.2%	6,710	2.6%	1,390	10.3%	125	1.9%
30 to 34	21,774	5.2%	11,870	4.6%	2,610	12.0%	220	1.9%
35 to 44	55,015	13.1%	33,623	12.9%	6,817	12.4%	553	1.7%
45 to 54	68,771	16.4%	46,530	17.8%	7,638	11.1%	563	1.2%
55 to 64	80,259	19.1%	54,426	20.9%	8,743	10.9%	596	1.1%
65 and over	114,632	27.3%	80,362	30.8%	11,263	9.8%	780	1.0%
Unknown	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-382 Home Rate Code, SJG Residential

Home Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
RSG	420,700	100.0%	260,880	100.0%	41,859	10.0%	3,196	1.2%
Masked Categories	2	0.0%	2	0.0%	0	0.0%	0	0.0%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-383 LEED Certification, SJG Residential

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	420,701	100.0%	260,882	100.0%	41,858	10.0%	3,196	1.2%
Masked Categories	1	0.0%	0	0.0%	1	100.0%	0	0.0%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-384 Gas Consumption, SJG Residential

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
First Quintile (0-19)	99,508	23.7%	9,741	3.7%	6,396	6.4%	339	3.5%
Second Quintile (20-39)	124,354	29.6%	56,953	21.8%	12,057	9.7%	947	1.7%
Third Quintile (40-59)	100,699	23.9%	76,836	29.5%	12,151	12.1%	950	1.2%
Fourth Quintile (60-79)	65,155	15.5%	68,300	26.2%	7,882	12.1%	576	0.8%
Fifth Quintile (80-100)	30,986	7.4%	49,052	18.8%	3,373	10.9%	385	0.8%
Total	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-385 Primary Language at Home, SJG Residential

Primary Language at Home	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	96.5%	33,843	8.0%	22,488	8.6%	3,844	11.4%	308	1.4%
Limited English	3.5%	9,340	2.2%	5,750	2.2%	390	4.2%	32	0.6%
Unknown	0.0%	377,519	89.7%	232,644	89.2%	37,625	10.0%	2,856	1.2%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-386 Household Income, SJG Residential

Household Income	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
< \$20,000	13.1%	45,623	10.8%	22,283	8.5%	2,230	4.9%	219	1.0%
\$20,000 to \$29,999	8.1%	27,318	6.5%	14,456	5.5%	1,973	7.2%	149	1.0%
\$30,000 to \$39,999	7.6%	32,074	7.6%	17,844	6.8%	2,558	8.0%	194	1.1%
\$40,000 to \$49,999	7.1%	28,092	6.7%	16,094	6.2%	2,561	9.1%	184	1.1%
\$50,000 to \$59,999	7.0%	26,255	6.2%	15,638	6.0%	2,462	9.4%	178	1.1%
\$60,000 to \$99,999	22.6%	86,332	20.5%	55,851	21.4%	9,715	11.3%	709	1.3%
\$100,000 to \$124,999	10.6%	35,195	8.4%	25,180	9.7%	4,768	13.6%	340	1.4%
\$125,000 to \$149,999	7.6%	25,049	6.0%	19,310	7.4%	3,772	15.1%	266	1.4%
\$150,000 to \$199,999	8.2%	28,259	6.7%	23,780	9.1%	4,592	16.3%	317	1.3%
>=\$200,000	8.0%	26,904	6.4%	26,483	10.2%	4,315	16.0%	319	1.2%
Unknown	0.0%	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-387 Home Built, SJG Residential

Home Built	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1939 or earlier	12.2%	24,285	5.8%	17,771	6.8%	1,794	7.4%	116	0.7%
1940-1949	4.7%	10,057	2.4%	6,462	2.5%	747	7.4%	51	0.8%
1950-1959	12.2%	37,775	9.0%	24,529	9.4%	3,378	8.9%	246	1.0%
1960-1969	12.3%	43,908	10.4%	29,989	11.5%	4,451	10.1%	295	1.0%
1970-1979	17.3%	57,877	13.8%	39,303	15.1%	6,930	12.0%	495	1.3%
1980-1989	15.8%	57,722	13.7%	36,567	14.0%	6,770	11.7%	483	1.3%
1990-1999	11.2%	35,948	8.5%	26,070	10.0%	4,822	13.4%	364	1.4%
2000-2009	12.4%	34,473	8.2%	29,027	11.1%	5,516	16.0%	392	1.4%
2010-2013	1.5%	3,115	0.7%	2,173	0.8%	442	14.2%	19	0.9%
2014 or later	0.5%	55,941	13.3%	25,028	9.6%	4,096	7.3%	415	1.7%
Unknown	0.0%	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-388 Number of Household Members, SJG Residential

Number of Household Members	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
0	0.0%	1,692	0.4%	807	0.3%	109	6.4%	8	1.0%
1	25.9%	125,715	29.9%	65,165	25.0%	10,750	8.6%	821	1.3%
2	32.5%	74,678	17.8%	48,208	18.5%	7,763	10.4%	587	1.2%
3	17.0%	47,062	11.2%	33,445	12.8%	5,099	10.8%	389	1.2%
4	14.5%	35,354	8.4%	26,572	10.2%	4,334	12.3%	331	1.2%
5	6.5%	28,264	6.7%	22,260	8.5%	3,745	13.3%	247	1.1%
6	2.4%	21,697	5.2%	17,687	6.8%	3,132	14.4%	200	1.1%
7	1.3%	16,178	3.9%	13,755	5.3%	2,370	14.7%	165	1.2%
8	0.0%	10,461	2.5%	9,022	3.5%	1,644	15.7%	126	1.4%
Unknown	0.0%	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-389 Home Ownership Status, SJG Residential

Home Ownership Status	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Owner occupied	73.2%	307,889	73.2%	213,660	81.9%	35,637	11.6%	2,618	1.2%
Renter occupied	26.8%	53,212	12.7%	23,259	8.9%	3,309	6.2%	256	1.1%
Unknown	0.0%	59,601	14.2%	23,963	9.2%	2,913	4.9%	322	1.3%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

Table 5-390 Home Value, SJG Residential

Home Value	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<\$25,000	2.9%	198	0.1%	101	0.0%	3	1.5%	0	0.2%
\$25,000-\$49,999	1.3%	1,576	0.4%	680	0.3%	69	4.4%	8	1.2%
\$50,000-\$99,999	5.6%	15,393	3.7%	7,482	2.9%	614	4.0%	58	0.8%
\$100,000-\$124,999	6.0%	16,539	3.9%	8,703	3.3%	1,030	6.2%	82	0.9%
\$125,000-\$149,999	7.1%	26,958	6.4%	15,082	5.8%	2,054	7.6%	168	1.1%
\$150,000-\$174,999	11.3%	35,974	8.6%	21,393	8.2%	3,223	9.0%	217	1.0%
\$175,000-\$199,999	9.9%	39,218	9.3%	24,327	9.3%	4,099	10.5%	269	1.1%
\$200,000-\$249,999	16.4%	65,765	15.6%	43,659	16.7%	8,079	12.3%	582	1.3%
\$250,000-\$299,999	13.2%	44,846	10.7%	31,997	12.3%	6,251	13.9%	472	1.5%
\$300,000-\$399,999	13.9%	48,056	11.4%	36,872	14.1%	6,989	14.5%	536	1.5%
\$400,000-\$499,999	5.3%	20,638	4.9%	16,971	6.5%	2,852	13.8%	221	1.3%
\$500,000-\$999,999	5.9%	22,710	5.4%	18,525	7.1%	2,275	10.0%	163	0.9%
\$1,000,000 or more	1.2%	6,216	1.5%	5,157	2.0%	351	5.7%	23	0.5%
Unknown	0.0%	76,615	18.2%	29,932	11.5%	3,970	5.2%	397	1.3%
Total	100.0%	420,702	100.0%	260,882	100.0%	41,859	10.0%	3,196	1.2%

5.10.3 Commercial Metrics

All commercial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-391 Primary Language at Business, SJG Commercial

Primary Language at Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
English	737	2.6%	1,913	1.2%	12	1.6%	1	0.0%
Limited English	117	0.4%	417	0.3%	1	0.9%	0	0.0%
Unknown	27,575	97.0%	163,507	98.6%	701	2.5%	491	0.3%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-392 Business Opened, SJG Commercial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980-1989	2,607	9.2%	15,227	9.2%	108	4.1%	130	0.9%
1990-1999	2,621	9.2%	16,368	9.9%	86	3.3%	80	0.5%
2000-2009	5,044	17.7%	25,550	15.4%	142	2.8%	50	0.2%
2010-2013	4,303	15.1%	20,060	12.1%	87	2.0%	15	0.1%
2014 or later	6,534	23.0%	43,163	26.0%	169	2.6%	148	0.3%
Unknown	7,320	25.8%	45,470	27.4%	122	1.7%	69	0.2%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-393 Number of Employees, SJG Commercial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	10,523	37.0%	36,940	22.3%	244	2.3%	84	0.2%
5 to 9	4,657	16.4%	26,201	15.8%	91	2.0%	74	0.3%
10 to 19	2,471	8.7%	15,209	9.2%	67	2.7%	50	0.3%
20 to 49	1,501	5.3%	13,304	8.0%	92	6.1%	80	0.6%
50 to 99	437	1.5%	7,200	4.3%	33	7.6%	32	0.4%
100 to 249	195	0.7%	7,725	4.7%	19	9.7%	50	0.6%
250 to 499	36	0.1%	980	0.6%	3	8.3%	1	0.2%

500+	17	0.1%	3,337	2.0%	3	17.6%	0	0.0%
Unknown	8,592	30.2%	54,940	33.1%	162	1.9%	121	0.2%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-394 Business Ownership Status, SJG Commercial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	18,688	65.7%	99,674	60.1%	500	2.7%	418	0.4%
Branch	2,352	8.3%	17,220	10.4%	90	3.8%	22	0.1%
Headquarters	49	0.2%	766	0.5%	1	2.0%	1	0.1%
Subsidiary	20	0.1%	2,707	1.6%	1	5.0%	-18	-0.7%
Unknown	7,320	25.8%	45,470	27.4%	122	1.7%	69	0.2%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-395 Business Rate Code, SJG Commercial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
CTS	46	0.2%	38,771	23.4%	2	4.4%	0	0.0%
GSG-LV	158	0.6%	27,941	16.9%	18	11.4%	65	0.2%
GSG	28,193	99.2%	95,109	57.4%	690	2.5%	427	0.5%
Masked	32	0.1%	4,017	2.4%	4	12.5%	0	0.0%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-396 LEED Certification, SJG Commercial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	28,425	100.0%	165,724	99.9%	714	2.5%	492	0.3%
Masked	4	0.0%	113	0.1%	0	0.0%	0	0.0%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-397 Gas Consumption, SJG Commercial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,250 therms	16,394	57.7%	7,364	4.4%	242	1.5%	17	0.2%
1,250-4,999 therms	7,566	26.6%	19,166	11.6%	209	2.8%	78	0.4%
5,000-12,499 therms	2,654	9.3%	20,607	12.4%	101	3.8%	97	0.5%
12,500-39,999 therms	1,260	4.4%	27,175	16.4%	107	8.5%	152	0.6%
>=40,000 therms	555	2.0%	91,525	55.2%	55	9.9%	148	0.2%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-398 Woman/Minority Owned Status, SJG Commercial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Woman business owner	229	0.8%	610	0.4%	7	3.1%	4	0.6%
Minority business owner	1,050	3.7%	3,498	2.1%	17	1.6%	2	0.1%
Woman-minority business owner	19	0.1%	94	0.1%	0	0.0%	0	0.0%
Not woman or minority	3,455	12.2%	10,019	6.0%	71	2.1%	42	0.4%
Unknown	23,676	83.3%	151,616	91.4%	619	2.6%	444	0.3%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-399 Number of Tenants in Structure, SJG Commercial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	3,566	12.5%	21,743	13.1%	88	2.5%	134	0.6%
2 to 5	18.6%	4,333	15.2%	30,099	18.2%	154	3.6%	133	0.4%
6 to 10	2.4%	1,261	4.4%	7,290	4.4%	16	1.3%	11	0.2%
11 to 20	1.0%	1,509	5.3%	9,139	5.5%	19	1.3%	9	0.1%
>20	0.4%	1,426	5.0%	11,215	6.8%	99	6.9%	2	0.0%
Unknown	0.0%	16,334	57.5%	86,351	52.1%	338	2.1%	203	0.2%
Total⁶⁸	97.0%	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

⁶⁸ "Currently unoccupied" from the public data is left off the table because it would not match to any utility accounts. It represents the missing 3% in the public data column.

Table 5-400 Square Footage of Business, SJG Commercial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
<1,499	6,830	24.0%	26,200	15.8%	133	2.0%	90	0.3%
1,500-2,499	4,976	17.5%	16,435	9.9%	106	2.1%	51	0.3%
2,500-4,999	3,965	14.0%	19,591	11.8%	111	2.8%	54	0.3%
5,000-9,999	1,816	6.4%	11,852	7.2%	63	3.5%	43	0.4%
10,000-19,999	1,125	4.0%	7,047	4.3%	47	4.2%	31	0.5%
20,000-39,999	749	2.6%	14,259	8.6%	28	3.7%	48	0.3%
40,000-99,999	608	2.1%	9,454	5.7%	38	6.3%	33	0.4%
>=100,000	343	1.2%	10,734	6.5%	59	17.2%	69	0.6%
Unknown	8,017	28.2%	50,266	30.3%	129	1.6%	72	0.1%
Total	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

Table 5-401 Two-digit NAICS Classification, SJG Commercial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Ag, Forestry & Mining	0.7%	87	0.3%	1,899	1.1%	0	0.0%	0	0.0%
Utilities	0.1%	16	0.1%	102	0.1%	2	12.5%	0	0.0%
Construction	11.5%	1,000	3.5%	4,076	2.5%	21	2.1%	3	0.1%
Manufacturing	0.0%	638	2.2%	6,449	3.9%	10	1.6%	2	0.0%
Wholesale Trade	3.2%	515	1.8%	3,482	2.1%	9	1.8%	2	0.1%
Retail Trade	0.0%	3,308	11.6%	14,201	8.6%	106	3.2%	15	0.1%
Transportation and Warehousing	0.0%	276	1.0%	1,987	1.2%	3	1.1%	2	0.1%
Information	1.7%	380	1.3%	1,063	0.6%	3	0.8%	0	0.0%
Finance and Insurance	4.3%	794	2.8%	1,272	0.8%	7	0.9%	0	0.0%
Real Estate	14.7%	997	3.5%	6,718	4.1%	48	4.8%	55	0.8%
Prof., Sci., & Tech.	16.8%	1,209	4.3%	3,360	2.0%	15	1.2%	21	0.6%
Management of Companies and Enterprises	0.0%	18	0.1%	69	0.0%	0	0.0%	0	0.0%
Admin, Support, & Waste Svcs.	7.9%	412	1.5%	3,842	2.3%	4	1.0%	7	0.2%
Educational Services	3.4%	582	2.1%	8,781	5.3%	83	14.3%	133	1.5%
Health Care and Social Assistance	10.9%	2,710	9.5%	17,057	10.3%	63	2.3%	43	0.3%
Arts, Ent. & Rec.	6.0%	396	1.4%	1,789	1.1%	23	5.8%	10	0.6%
Accommodation and Food Services	5.0%	2,946	10.4%	17,959	10.8%	68	2.3%	24	0.1%
Other Services	13.9%	2,976	10.5%	10,226	6.2%	68	2.3%	39	0.4%
Public Administration	0.0%	1,849	6.5%	16,034	9.7%	59	3.2%	65	0.4%
Unknown	0.0%	7,320	25.8%	45,470	27.4%	122	1.7%	69	0.2%
Total	100.0%	28,429	100.0%	165,838	100.0%	714	2.5%	492	0.3%

5.10.4 Industrial Metrics

All industrial metrics are reported in tables in this section. Rounding has been applied to all calculated values; values of 0% may not be true 0% due to that rounding and all tables may not sum to 100%.

Table 5-402 Primary Language at Business, SJG Industrial

This table has been removed to protect confidentiality.

Table 5-403 Business Opened, SJG Industrial

Business Opened	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1980-1989	69	15.8%	17,743	12.6%	0	0.0%	0	0.0%
1990-1999	43	9.9%	8,351	6.0%	4	9.3%	2	0.0%
2000-2009	74	17.0%	18,406	13.1%	2	2.7%	1	0.0%
2010-2013	49	11.2%	28,366	20.2%	1	2.0%	0	0.0%
2014 or later	88	20.2%	23,734	16.9%	3	3.4%	1	0.0%
Unknown	113	25.9%	43,846	31.2%	1	0.9%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-404 Number of Employees, SJG Industrial

Number of Employees	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
1 to 4	83	19.0%	29,111	20.7%	1	1.2%	0	0.0%
5 to 9	63	14.5%	5,126	3.7%	3	4.8%	1	0.0%
10 to 19	51	11.7%	365	0.3%	1	2.0%	0	0.1%
20 to 49	45	10.3%	12,283	8.8%	2	4.4%	2	0.0%
50 to 99	24	5.5%	2,819	2.0%	1	4.2%	0	0.0%
100+	30	6.9%	31,850	22.7%	0	0.0%	0	0.0%
Unknown	140	32.1%	58,891	41.9%	3	2.1%	1	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-405 Business Ownership Status, SJG Industrial

Business Ownership Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Single location	279	64.0%	73,396	52.3%	9	3.2%	4	0.0%
Branch	38	8.7%	21,381	15.2%	1	2.6%	0	0.0%
Unknown	113	25.9%	43,846	31.2%	1	0.9%	0	0.0%
Masked Categories	6	1.4%	1,821	1.3%	0	0.0%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-406 Business Rate Code, SJG Industrial

Business Rate Code	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
GSG	380	87.2%	3,341	2.4%	11	2.9%	4	0.1%
LVS	27	6.2%	60,244	42.9%	0	0.0%	0	0.0%
Masked Categories	29	6.7%	76,861	54.7%	0	0.0%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-407 LEED Certification, SJG Industrial

LEED Certification	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not Certified	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-408 Gas Consumption, SJG Industrial

Gas Consumption	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
4,999 therms or less	225	51.6%	379	0.3%	7	3.1%	2	0.4%
5,000 to 12,499 therms	79	18.1%	634	0.5%	3	3.8%	2	0.3%
12,500 to 39,999 therms	62	14.2%	1,369	1.0%	1	1.6%	1	0.1%
40,000 to 149,999 therms	25	5.7%	1,764	1.3%	0	0.0%	0	0.0%
150,000 therms or more	44	10.1%	136,299	97.1%	0	0.0%	0	0.0%
Unknown	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-409 Woman/Minority Owned Status, SJG Industrial

Woman/Minority Owned Status	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Not woman or minority business owner	59	13.5%	507	0.4%	3	5.1%	2	0.5%
Unknown	363	83.3%	139,614	99.4%	8	2.2%	2	0.0%
Masked Categories	14	3.2%	323	0.2%	0	0.0%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-410 Number of Tenants in Structure, SJG Industrial

Tenants in Structure	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
One	74.7%	90	20.6%	38,795	27.6%	2	2.2%	2	0.0%
2 to 5	18.6%	65	14.9%	18,494	13.2%	0	0.0%	0	0.0%
Unknown	0.0%	260	59.6%	79,411	56.5%	5	1.9%	2	0.0%
Masked Categories	2.7%	21	4.8%	3,746	2.7%	4	19.0%	0	0.0%
Total	96.0%	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-411 Square Footage of Business, SJG Industrial

Square Footage of Business	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Less than 1,499	68	15.6%	19,016	13.5%	2	2.9%	1	0.0%
1,500 to 2,499	52	11.9%	23,651	16.8%	2	3.9%	0	0.0%
2,500 to 4,999	56	12.8%	10,209	7.3%	3	5.4%	2	0.0%
5,000 to 9,999	29	6.7%	224	0.2%	1	3.5%	0	0.0%
10,000 to 19,999	27	6.2%	489	0.4%	1	3.7%	0	0.1%
20,000 to 39,999	28	6.4%	315	0.2%	0	0.0%	0	0.0%
40,000 to 99,999	24	5.5%	12,451	8.9%	0	0.0%	0	0.0%
100,000 or more	37	8.5%	30,241	21.5%	1	2.7%	0	0.0%
Unknown	115	26.4%	43,849	31.2%	1	0.9%	0	0.0%
Total	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%

Table 5-412 Two-digit NAICS Classification, SJG Industrial

Two-digit NAICS Classification	Public Data Percent	Unique IDs	Unique IDs Percent	Consumption (thousands of therms)	Consumption Percent	Participants	Unique IDs Participation Rate	Savings (thousands of therms)	Population Savings Rate
Construction	11.5%	18	4.1%	1,144	0.8%	0	0.0%	0	0.0%
Manufacturing	0.0%	94	21.6%	24,610	17.5%	1	1.1%	0	0.0%
Wholesale Trade	3.2%	36	8.3%	1,765	1.3%	1	2.8%	0	0.0%
Retail Trade	0.0%	55	12.6%	7,067	5.0%	3	5.5%	2	0.0%
Prof., Sci., & Tech.	16.8%	19	4.4%	20,502	14.6%	1	5.3%	0	0.0%
Admin, Support, & Waste Svcs.	7.9%	15	3.4%	190	0.1%	1	6.7%	0	0.2%
Public Administration	0.0%	34	7.8%	23,037	16.4%	2	5.9%	1	0.0%
Unknown	0.0%	113	25.9%	43,846	31.2%	1	0.9%	0	0.0%
Masked Categories	60.5%	52	11.9%	18,285	13.0%	1	1.9%	0	0.0%
Total	99.9%	436	100.0%	140,445	100.0%	11	2.5%	4	0.0%



6 APPENDICES

6.1 Appendix A: Additional Methodology Details

6.1.1 Acquisition Process - Ingest and Load

The data acquisition process began by creating login credentials to DNV GL's Secure File Transfer Protocol (SFTP) site. Furthermore, each utility was provided with a PGP public key to encrypt their files prior to uploading to the SFTP site. This process ensured contractual data security guidelines were met. Table 6-1 shows the number of customer information, usage, and projects/measures files transferred by each utility and by the BPU. After receipt of the files, the DNV GL database Administrator (DBA) decrypted them using the private key pair. The DBA reviewed the datasets, verified that all requested data were present, and asked utilities follow-up questions if s/he found missing data.

Table 6-1. Count of files transferred by utilities and BPU

Utility	Customer files	Usage files	Projects & Measures files	Total files transferred
PSE&G	11	199	5	215
ACE	1	1	4	6
ETG	8	24	1	33
SJG	2	0	21	23
NJNG	4	2	22	28
JCPL	2	14	11	27
OR	1	0	2	3
Butler	1	1	0	2
BPU	0	0	3	3
Total	30	241	69	340

Once the tables were loaded, DNV GL standardized addresses for every customer of each utility and generated an anonymized unique identifier (Unique ID) based on account id, premise id, and utility. A dataset with the Unique IDs and standardized addresses was transferred via secure file transfer to InfoGroup, DNV GL's demographic/firmographic data vendor. InfoGroup appended demographic and firmographic variables and returned the appended file to DNV GL.

6.1.2 Transformation Process – Creating Master Data Model

DNV GL's Data Engineering team developed a data model for the linked data, using our existing evaluation data models as a starting point. The data model includes four tables, one each for customer information provided by the utilities (CIS table), consumption data (Consumption table), project tracking data (Projects

table), and the customer demographic information sourced from Infogroup (IG table). The data transformation process mapped all the files transferred by the utilities to these four tables.

The CIS table represents customer information provided by the 7 gas and electric utilities considered in the study. Data engineers transformed customer data in multiple files into a single table with a unified schema. The data transformation process removed duplicate records and standardized the formatting of fields including dates and customer class. Unique records in the CIS table are defined by the combination of utility, account number and premise number. Our Data Engineers performed a data validation process to verify that each utility-account-premise combination is represented only once in the CIS table. Table 6-2 tabulates the number of account-premise combinations represented in the CIS table, for each utility.

Table 6-2. CIS records by utility

Utility	CIS Unique IDs
ACE	560,786
Butler	14,929
ETG	299,764
JCPL	1,305,086
NJNG	619,436
OR	80,037
PSE&G	3,244,741
SIG	449,567

Utility customer records specified one of five different customer classes: residential, commercial, industrial, streetlight, or blanks. For analysis, DNV GL retained records in the first three categories and dropped records in the latter two categories. If any non-building records (e.g. streetlights, well pumps) were included in the records marked as residential, commercial, or industrial, they were included in the final analyses.

The Consumption table represents consumption data supplied by the gas and electric utilities. As part of the data transformation process, data engineers extracted monthly consumption values, dates, and customer class from the multiple usage files to create a unified usage table with monthly consumption data for all utilities. DNV GL validated the units and magnitude of consumption to ensure the quality of the data model.

DNV GL then matched the Unique IDs in the Consumption table to those present in the CIS table. Some of the customers in the CIS table are not represented in the Consumption table and vice versa. In several instances this can be explained because the customers in the CIS table were not active during the period of the study. Table 6-3 below tabulates the final number of Unique IDs represented in the Consumption table for each utility.

Table 6-3. Customers in usage table, by utility

Utility	Usage Unique IDs
ACE	544,190
Butler	14,681
ETG	292,407
JCPL	1,305,979
NJNG	573,648
OR	79,132
PSE&G	3,103,352
SJG	441,567

The Projects table represents the savings data for projects completed during the period of the project study, November 2016 to November 2019. This table contains consolidated information from the multiple project files. These projects include utility-administered and BPU-administered programs. Table 6-4 tabulates the combined number of projects included in the master projects table, for each utility.

Table 6-4. Number of projects by utility

Utility	Number of Projects
ACE	87,462
Butler	245
ETG	164,820
JCPL	82,609
NJNG	45,186
OR	4,434
PSE&G	436,287
SJG	241,077

The data engineering team matched utility projects with records in the CIS table, using the account and premise identifiers supplied in the project files and customer information files. First, initial matching was conducted between the projects and CIS tables, and match rates were compared. If participant entries did not map on the premise level but had valid account numbers, they were populated by determining if a single premise entry for an account existed at a given address, and, if so, using this premise for the application. Utility projects had an 89% match rate.

DNV GL first split the BPU projects by fuel type so that multifuel projects would be associated with the correct utility. DNV GL then used a two-step process to match BPU projects to the CIS table records. A two-step process was necessary because in many cases, the BPU does not have the utility account number for the participant. The first matching step used existing account ids in the BPU data to match to the CIS table. This step succeeded in matching approximately 25% of the BPU projects. The second step used a match on standardized versions of customer name and the address text strings in the BPU project data with standardized address text strings in the CIS table. The standardization fixed common spelling differences such as "st", "ST", or "street" that a human can easily identify as the same, but look different to a computer. Zip code also entered into this step to control for street names that are likely to occur in multiple towns (e.g. "Main Street"). This step matched approximately 33% of the BPU records. Together, DNV GL was able to

match approximately 58% of the BPU records to specific CIS table records (Table 6-5). DNV GL aggregated the remaining unmatched savings by utility and zip code.

Table 6-5. Project match rates

Project type	Total Projects	Projects Linked to a CIS Record	Match Rate
Utility projects	777,525	686,403	89%
BPU projects	271,187	156,608	58%
BPU projects matched by account		68,036	25%
BPU projects matched by address		88,572	33%

The projects files included data for some behavioral programs. These are opt-out programs that provide information and encouragement to adopt energy efficiency measures to large numbers of customers. Customers receiving this information may or may not take energy efficiency actions. A Unique ID that was in a Behavioral program but did not otherwise participate in any statewide or utility program was not counted as a participant.

In some cases (e.g. HVAC cycling programs), the database contained only data on incentives and had no savings information. In these cases, the Unique ID was included as a participant in participation counts but did not contribute any savings to the population savings rate.

6.1.3 Analysis Process

To analyze the data, DNV GL created a table that combined the CIS table, Consumption table, Project table, and IG table by Unique ID. The resulting table included Unique IDs with electric consumption, gas consumption, electric savings, gas savings, and demographic or firmographic information.

DNV GL split the utility data into residential, commercial, and industrial data sets. For utilities that had fewer than 25 industrial records (OR, ETG, Butler), DNV GL consolidated these records into the commercial category to allow for reporting of firmographics for those industrial customers while also protecting confidentiality. The data for these utilities was renamed "non-residential" to indicate it includes both commercial and industrial customers.

After splitting the data, DNV GL computed consumption and demand quintiles for the state as a whole for each sector. To compute the quintiles, DNV GL first split the data into Residential, Commercial, and Industrial sectors. Then, using the statewide (as opposed to individual utility) data, the records for each sector were sorted by consumption and split into 5 equally sized groups. Because the quintiles were set at the statewide level, each utility can have slightly different than an even split of customers in each quintile. Then DNV GL split the data into utility-specific tables, computed the metrics, and created cross-tabulations on those metrics for each of the demographic variables of relevance to the study.

Public data distributions were prepared from ACS (2018), and CBP (2012). DNV GL determined the census block groups to aggregate for the ACS data for each utility by referencing all Census block groups reported for any customer of that utility in the IG data. If a block group was served by multiple utilities, the data for that block group were included in both utilities' tables because block group is the most precise level of data available from the ACS. A similar process was used for counties for the CBP data.

DNV GL then transformed the categories in both the utilities tables and the public data tables to match as closely as possible. This required consolidation of some categories in either the IG or the public data sources in some cases. In some cases, category endpoints also differ by one (e.g. \$50,000 versus \$49,999). DNV GL

then appended the public data distributions to the cross-tabulation tables for demographic variables where public data were available.

6.1.4 Confidentiality

To protect confidentiality, DNV GL established a set of rules in consultation with the utilities and the BPU, based on rules used by the US Energy Information Administration (EIA) and other public federal data sets. Similar rules were used to determine data suppression in the report tables and to determine masking and consolidation for the public use data set.

6.1.4.1 Confidentiality for metrics tables

If a category includes fewer than 100 Unique IDs in a residential table or fewer than 15 Unique IDs in a non-residential table, the category is masked. All records in categories with fewer than 100 (residential) or 15 (non-residential) Unique IDs were combined into a "Masked" category. In cases where an observer could decipher what is actually in the masked category (e.g. a table with English and Non-English speakers only has two options), and in cases where the masked category still contained fewer than the minimum number of records (100 residential; 15 non-residential) the data were combined with another category to maintain confidentiality. Tables where this process resulted in a single row and which had fewer than the minimum number of records in total were completely redacted from the report.

6.1.4.2 Confidentiality for the public use data set

As described in Section 3, three data sets were provided for public use:

- Individual-customer residential data
- Individual-customer small/medium Non-Residential data
- Aggregated data for Non-Residential customers excluded from the individual-customer data set.

For the individual residential customer data sets, the geographic identifier included was census tract. This identifier was masked for all customers in a census tract with fewer than 100 customers. For the individual Non-Residential customer data set, the geographic identifier included was county. The NAICS code was masked for any Unique ID in a geographic-NAICS combination with fewer than 15 Unique IDs. Year constructed or year business started operation was included only in broad categories, generally aligning with the categories displayed in the metrics tables.

The individual-customer Non-Residential data excluded all customers in the top quintile of consumption, as well as all customers in rare NAICS groups. Data for these customers were provided in aggregate only.

6.2 Appendix B: Bibliography

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