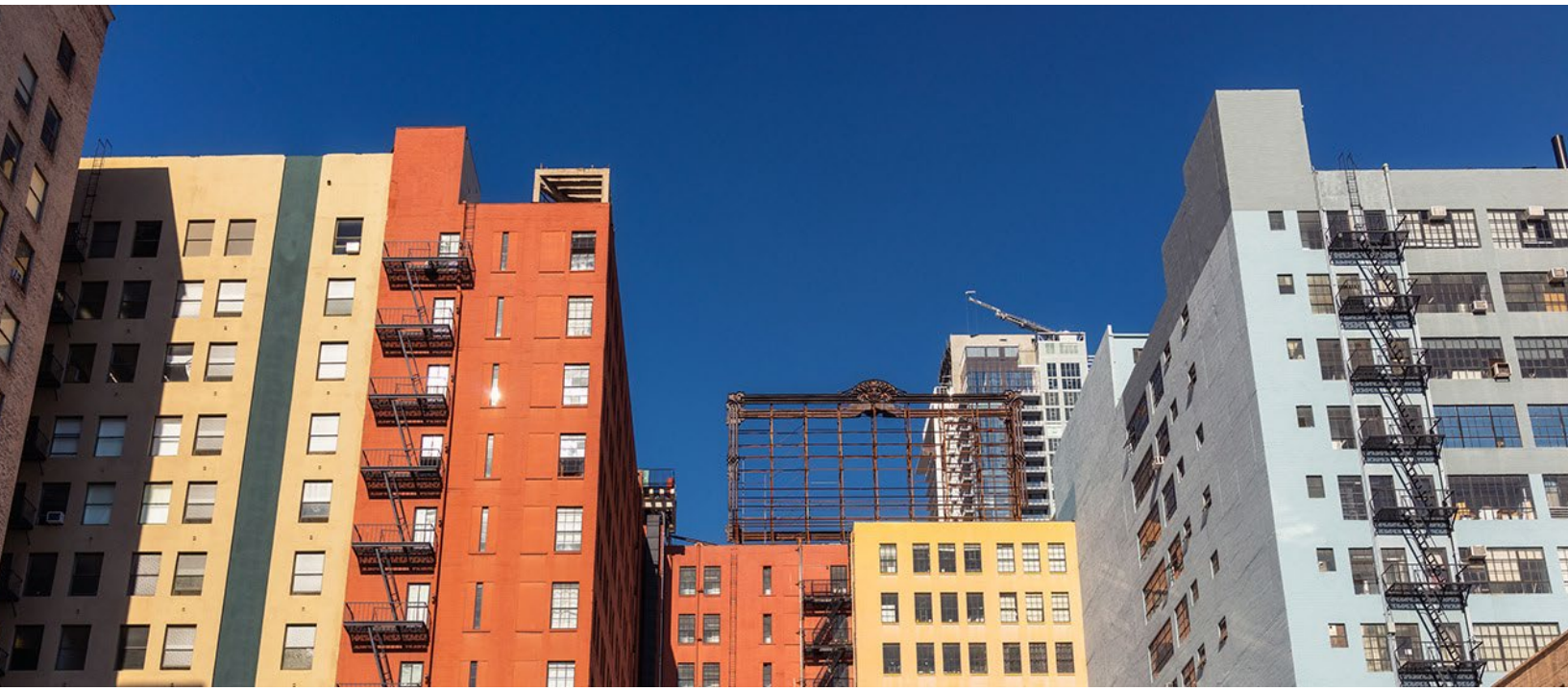
2022 Low Income Needs Assessment



Final Report: Appendices

December 9, 2022

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Appendix A: Detailed Methods

Appendix A expands upon the research methodology detailed in Section 3. Specifically, this section includes details on:

- Landlord interviews;
- Modified energy burden calculations;
- Location of survey respondents; and
- Weighting of survey responses.

1.1 Landlord Interviews

Table 1 shows the disposition of the attempts to interview landlords before the outreach approach was changed; the intention was to discuss concerns about ESA contractors with the landlords.

Table 1: Landlord Interview Attempts

Disposition	Detailed Disposition	Number
Out of sample or bad contact information		21
Did not reach	No contact (includes gatekeepers)	66
	Promised callback; no follow-through	7
Refused	Declined	6
	Scheduled, but did not show	1
Completed interview		1
Total landlords included in outreach effort		**102**

1.2 Modified Energy Burden

In addition to asking each respondent for their total household income, the surveyors asked whether they receive benefits from government assistance programs. We focused on non-cash assistance benefits including:

- Housing – Housing choice vouchers, public housing, or other subsidized housing;
- Food – CalFresh, Supplemental Nutrition Assistance Program (SNAP), or other food stamps; and

- Medical – from Medi-Cal or Medicaid (not Medicare).

Subsidies from social security, disability, supplemental security income, and unemployment may be included in self-reported income because these are cash benefits issued in regular time intervals with predictable values. The remaining benefits received from government assistance programs can have a substantial impact on a household's expenses, but the value of these benefits is likely not accounted for in self-reported income. This has direct implications for our analysis of energy burden. For example, a household receiving $240 worth of food stamps each month is able to put $240 of their income that they would have spent on food towards something else (e.g., utility bills). If two households have the same income and energy costs, but only one is receiving food stamps, the true energy burden experienced by these two households will differ.

Modified energy burden is calculated by adding the value of any government assistance benefits a household receives to their total income. This modified income is intended to be an upper bound, with the true income (and thus energy burden) falling somewhere between this modified income and the original.

Housing Benefits

Housing benefits include public housing, privately owned subsidized housing, and housing choice vouchers. We estimated the value of these benefits using the fair market rent approach, which is used by the US Census Bureau.[1] This approach takes into account household income and local housing costs.

$$HousingBenefits = (FairMarketRent - 0.3 * Income) * (0.44 * LocalAreaAdjustment + 0.56) * 12$$

Fair market rent is a metric developed by the US Department of Housing and Urban Development (HUD) that is specific to the unit size and location.[2] We applied HUD's maximum occupancy rule of two people per bedroom to determine the minimum number of bedrooms each household would require, and then determined the fair market rent for this size of unit in the county in which they reside. Income was self-reported in the survey using increments of $5,000. When income was reported as a range, we used the midpoint of each income range in this calculation.[3] The local area adjustment is a ratio of local housing costs to the national average. This results in a small decrease in the benefits for areas with unusually low costs.

[1] Johnson, P., Renwick, T., and Short, K., *Estimating the Value of Federal Housing Assistance for the Supplemental Poverty Measure*. 2010. https://cps.ipums.org/cps/resources/spm/SPM_HousingAssistance.pdf

[2] HUD User. "FY 2022 Fair Market Rent Documentation System". https://www.huduser.gov/portal/datasets/fmr/fmrs/FY2022_code/2022state_summary.odn

[3] For example, a household reporting their income to be "more than $10,000 but less than $15,000" was assumed to have an income of $12,500 for this benefit calculation.

Food Benefits

Food benefits consist primarily of food stamps from CalFresh (known federally as SNAP), which have cash value but can only be used to purchase food. Many families with children who are eligible for food stamps also receive food benefits in the form of free lunches through the National School Lunch Program and vouchers for specific food items through the Women, Infants, and Children (WIC) program.

We estimated the value of all SNAP food stamp benefits using data from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) public use data for 2020.[4] This survey captures detailed information about household income and public benefits received, but also provides estimates for the value of these benefits. We applied filters to the ASEC data to restrict the focus to households in California that received food stamp benefits during the survey year. To account for household income, we took the weighted average of these food benefits within the subset of households that would be eligible for CARE—those with incomes below 200 percent of FPL. The average SNAP food benefit was $1,092 per person for 2020.

The WIC program serves pregnant, postpartum, and breastfeeding women as well as children up to the age of five with an average benefit of $47 per person per month (or $564 per year) in 2014.[5] The National School Lunch Program subsidy in the contiguous United States in 2020 paid a maximum of $3.68 per child for lunch, milk, and snacks. California public schools have 180 instructional days per year,[6] for a total benefit of $625.60 per child per year.

To account for household composition, we calculated the benefits of SNAP food stamps per person (including adults), WIC benefits for each child under the age of five in the household (if age was known) and WIC benefits for the mother if their own child is less than one year old (as an estimate of the total duration of time a woman would qualify for benefits), and school lunch benefits per child in the household over the age of five. Finally, we applied these averages to the number of children and the total number of qualifying people in each household to create an estimate for the total value of food benefits specific to that household.

$$FoodBenefits = SNAP_{PerPerson} * NPeople + WIC_{PerPerson} * (NChildren_{Age\leq 5} + Mother_{ChildAge<1}) + School_{PerChild} * NChildren_{Age6+}$$

[4] Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren, and Michael Westberry. *Integrated Public Use Microdata Series, Current Population Survey: Version 9.0* [dataset]. Minneapolis, MN: IPUMS, 2021. https://doi.org/10.18128/D030.V9.0

[5] nutritioned.org. 2022. "WIC program in California". https://www.nutritioned.org/cawic/

[6] Education Commission of the States. 2020. "Instructional Time Policies." https://reports.ecs.org/comparisons/instructional-time-policies-01

Medical Benefits

Our estimated value of medical benefits includes Medi-Cal/Medicaid, but not Medicare. We estimated the value of Medicaid in terms of its impact on out-of-pocket spending (i.e., amount paid by self or family), rather than its impact on total medical expenditures (i.e., amount paid by Medicaid).

This estimate is based on public use data from the 2019 Medical Expenditure Panel Survey (MEPS),[7] applying filters to restrict the focus to households in the Western Census Region[8] that are low income (i.e., under 200% of federal poverty level [FPL]). The difference between the weighted average out-of-pocket spending on medical costs among those without Medicaid and those with Medicaid suggests that medical insurance benefits reduce out-of-pocket spending by an average of $682 per person in the household per year.

$$MedicalBenefits = (Spending_{NoMedicaid} - Spending_{Medicaid}) * NPeople$$

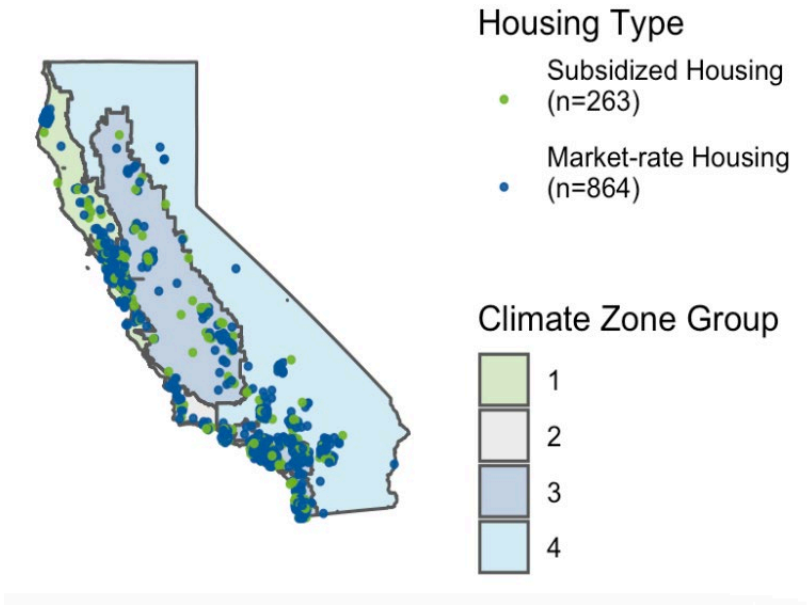
1.3 Survey Respondents

Figure 1 shows that respondents are from a mix of subsidized housing (excluding reported vouchers) and market-rate housing in all four climate groups. Nearly everywhere where there is a respondent in market-rate housing, there is also a respondent in a subsidized residence, with the exception of a few isolated responses from renters in market-rate housing in climate group 4.

[7] Evergreen analysis of the 2019 Medical Expenditure Panel Survey (MEPS) Household Component Full-Year-files. Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey. https://www.meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp

[8] The Western Census Region includes West Pacific (WA, OR, CA, AK, and HI) and West Mountainous – (ID, NV, MT, WY, UT, CO, AZ, NM).

Figure 1: Renter Survey Completes by Subsidized and Market-Rate and Climate Group



1.4 Weighting

Evergreen developed case weights for the survey that were designed to correct for intentional oversampling as well as lower response rates by certain demographic subgroups. The weights improved our ability to draw inferences about the population of low-income renters in California.

The first step in this process was to create survey design weights to adjust for the intentional over-sampling of CARE renters from rural areas and medium/large multifamily buildings, within each of the strata (three sets of zip codes). These strata were designed to increase the concentration of renters, medium/large multifamily buildings, and those from rural areas in our sample frame to improve the cost effectiveness of our recruitment efforts. The strata are defined as:

- Zip codes where at least 40 percent of low-income households rent and 20 percent reside in medium or large multifamily buildings;
- Rural zip codes where at least 20 percent of low-income households rent; and
- All other zip codes where at least 40 percent of low-income households rent.

Table 2 provides the Census population estimate of the number of CARE-eligible households (under 200% FPL) and the number of survey completes by climate group and building category, while Table 3 provides survey design weights by building category and climate group. The design weights compensate for the non-random selection of contacts, adjusting the weight of each survey respondent according to the proportion of low-income households that they would represent within the population. There is a wide range of weights as we intentionally oversampled

customers with uncommon characteristics (e.g., rural households in large multifamily buildings) to capture the diversity of customers within the population.

Table 2: Population and Survey Completes by Strata

Building Category	Strata	Census Population Estimate				Survey Completes			
		Climate Group 1	Climate Group 2	Climate Group 3	Climate Group 4	Climate Group 1	Climate Group 2	Climate Group 3	Climate Group 4
Single-Family	A	124,060	336,529	327,074	5,765	35	30	27	28
	B	74,914	30,109	426,181	101,989	21	4	20	18
	C	156,357	179,788	440,977	30,972	15	7	12	5
Multifamily - Small (2 to 10 units)	A	90,970	155,508	112,480	1,843	49	59	57	13
	B	9,711	5,913	56,417	11,626	19	3	27	32
	C	58,797	48,516	108,690	4,933	10	17	16	10
Multifamily - Medium/Large (11+ units)	A	157,680	267,788	203,757	2,397	102	112	126	47
	B	4,190	2,750	32,570	4,684	32	7	57	37
	C	33,118	38,714	72,740	3,933	22	18	16	17

Source: 2019 Census ACS Public Use Microdata Sample (PUMS) and 2022 LINA renter survey

Table 3: Survey Design Weights (proportional)

Building Category	Strata	Climate Group 1	Climate Group 2	Climate Group 3	Climate Group 4
Single-Family	A	37.54	101.83	165.37	1.74
	B	22.67	9.11	122.50	30.86
	C	47.31	54.40	73.50	9.37
Multifamily - Small (2 to 10 units)	A	27.53	47.06	34.04	0.56
	B	2.94	1.79	17.07	3.52
	C	17.79	14.68	32.89	1.49
Multifamily - Medium/Large (11+ units)	A	47.71	81.03	61.66	0.73
	B	1.27	0.83	9.86	1.42
	C	10.02	11.71	22.01	1.19

Except for single-parent households (which were underrepresented in our sample), the proportions of respondents that fell into our soft quotas for sub-populations were reasonably close to what was expected from the population (Table 4). The purpose of the soft quotas was to increase the likelihood that we would have a sufficiently large sample of each sub-population for analysis. While the design weight corrected the imbalance in climate zones and home types, it created a new imbalance in household compositions represented. As these characteristics are likely to be correlated with the needs and barriers faced by similar income-eligible households, we proceeded to restore this balance and correct for the lower response rates among certain individuals (e.g., single-parent households) with post-stratification weights.

Post-stratification began with the design weights and then used iterative proportional fitting (or "raking") until each of the weighted values aligned with the Census population estimates for prevalence of each of the following attributes (in addition to the climate group and home type): subsidized housing, non-English speaking, single-parent household, disabled, senior citizen, and large family.[9] The final post-stratification weights provided our best estimate for expanding the survey respondent sample to represent the geographic and demographic distribution of the population.

The post-stratification weights that were used in our analysis maintained the geographic balance shown in Table 3, while also achieving alignment with the demographic distributions in Table 4. Many respondents had a unique combination of geographic and demographic characteristics, which led them to also have a unique weight. We provide the results from our validation tests, checking the reasonableness of these weights by using the weighted survey data to create estimates of California population groups as a whole, comparing these to known values from the Census to confirm that they align.

Table 4: Comparison of Sample Characteristics to Population Estimates (from Market Characterization)

Quota	Sample (unweighted)	Population	Sample (weighted)
% of large households[10]	20%	18%	18%
% of households with at least one senior[11]	23%	26%	26%

[9] Evergreen used the ANESrake package in R (v0.8), which takes a list of variables and target values and determines how they should be weighted to match the procedures outlined in:
M. DeBell and J.A. Krosnick. 2009. *Computing Weights for American National Election Study Survey Data*. ANES Technical Report Series, No. nes012427. Ann Arbor, MI and Palo Alto, CA: American National Election Studies. Available at http://www.electionstudies.org

[10] Large households are defined as households with more than four members.

[11] Households with at least one senior resident are defined as households with at least one member over the age of 66.

Quota	Sample (unweighted)	Population	Sample (weighted)
% of households with at least one disabled member[12]	29%	32%	32%
% of households with at least one non-English speaker[13]	48%	53%	53%
% of single-parent households[14]	11%	22%	22%
% of households with housing subsidies[15]	23%	19%	19%

[12] Households with at least one disabled resident are defined as households with at least one member considered permanently disabled.
[13] Households with at least one non-English speaker are identified by respondents reporting that at least one language other than English is spoken in their home.
[14] Single-parent households are defined as households with at least one child (up to 18 years old) and only one adult (aged 19 and up).
[15] Respondents with housing subsidies include public housing, affordable housing, or housing choice vouchers.

Appendix B: Additional Findings

Additional research that either further explores or provides context to the findings in Section 4 of this report are included below.

This section includes an expansion of the following topics shared in the report:

- A characterization of the overall eligible renter customer population
- Information on eviction rates
- A comparison of self-reported vs. billing data
- Additional findings related to energy burden
- Detailed findings covering households that speak no English and no Spanish, and program penetration estimates (i.e., enrollment rate)
- A summary of overall survey findings
- Survey findings focused on selected subgroups

1.1 Market Characterization

The ultimate goal of compiling and analyzing secondary data was to first create a general picture of the low-income population in California, and then develop additional detail on the renter submarket. The end result of secondary data analysis was the following.

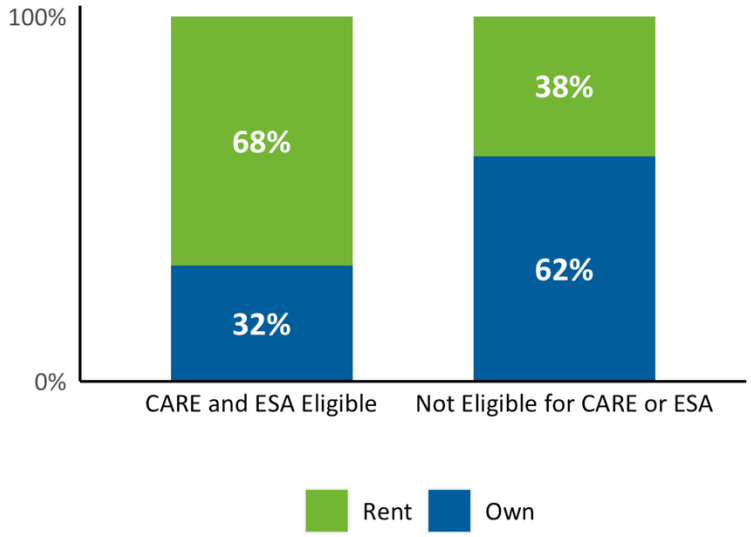
- Characterization of the entire low-income population in California based on the most recent data available;
- Geographic distribution of low-income renter population (investor-owned utility [IOU] service territory, rural vs. urban, climate zone, disadvantaged community, etc.);
- Penetration rates for CARE, FERA, and ESA for both owners and renters; and
- Estimates of energy burden for both low-income owners and renters.

Once this characterization was established, it was used to create a statistically representative sample for the phone survey and help guide the structure of the in-depth interviews. Expanding the results from the surveys to this low-income renter characterization helped us to understand the size and/or relative impact of various policy and program recommendations made in this study. Additional useful data from the market characterization is presented below.

1.1.1 Overall Eligible Renter Characterization

As demonstrated in prior research, the analysis confirmed that the majority of the CARE-eligible population (used to indicate eligibility for ESA) rent their home (68%), compared to 38 percent of those not eligible for CARE who rent their home (Figure 2).

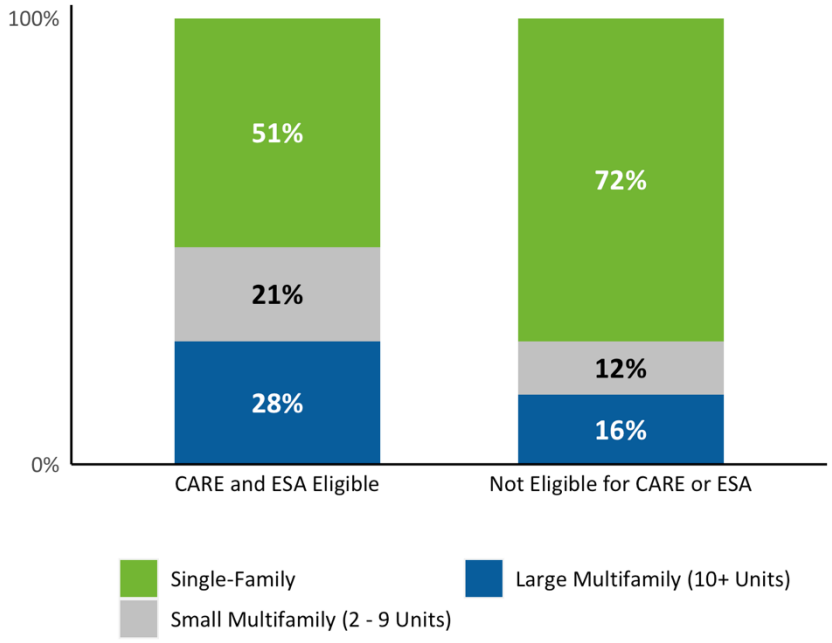
Figure 2: Households by CARE-Eligibility and Tenure



Source: 2019 Census ACS Public Use Microdata Sample (PUMS)

CARE-eligible renters are more likely than those not eligible for CARE to live in small two-to-nine-unit multifamily buildings (21% versus 12%) or larger multifamily buildings (28% versus 16%). Those not eligible for CARE are more likely to live in single-family homes than CARE-eligible renters (72% versus 51%) (Figure 3).

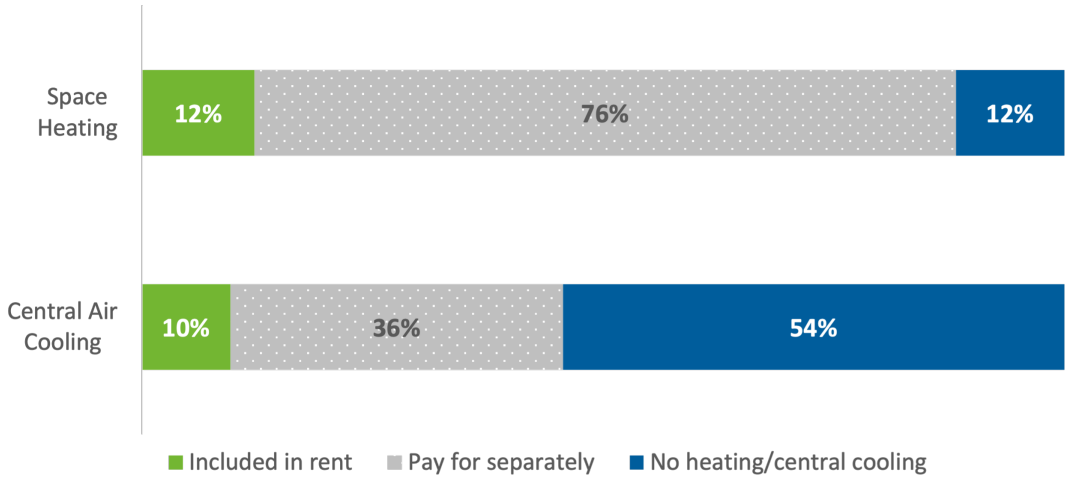
Figure 3: Renters by CARE-Eligibility and Home Type



Source: 2019 Census ACS PUMS

The majority of renters pay for their space and water heating separate from their rent (Figure 4). When adjusted to cover just those renters that *have* heating or cooling, a similar percentage of renters have heating (14%) and cooling (22%) costs included in their rent.

Figure 4: Method of Payment for Heating and Cooling



Source: 2009 RASS

These differences have implications for the types of measures that can be installed in a home, the impact those measures can have, and the difficulty in getting to the point of installation given the split incentive barrier.

Within the population of renters, comparing households by CARE-eligibility status, the CARE-eligible households that rent are more likely to have a disabled person in the home, an elderly person in the home, a household led by a single parent, or a large family.[16] They are also slightly more likely to have no English and no Spanish speakers in the home (8% and 3%, respectively).

1.1.2 Low-Income Customer Energy Burden

Within the low-income population as a whole, renters are more likely to have lower energy burdens. On average, renters have lower annual incomes, but they also have much lower average energy bills, leading to a lower energy burden than owners (Table 5) – all three of these differences are statistically significant.

Table 5: Energy Burden for Eligible Owner versus Eligible Renter Households

	Average Annual Income	Average % of FPL	Average Energy Bill (Annual)	Average Total Energy Burden	Median Total Energy Burden	Average Occupancy	Median Occupancy
Owners	$25,358	117%	$2,016	9.4%	6.7%	2.5	2
Renters	$22,858	103%	$1,308	6.8%	4.5%	2.7	2

Source: 2019 Census ACS PUMS

Within the subgroup of low-income renters, households that rent single-family homes have higher energy burdens than renters in multifamily homes (Table 6 average and median energy burden). Bills overall are lower for small multifamily renters, likely because they have less space to heat or cool. Renters and owners of units in large multifamily properties consistently have lower incomes and lower bills. The median energy burden is also a useful metric, with 50 percent of eligible renters above this value and 50 percent below. The average is higher than the median due to some high energy burdens in households with especially low incomes. Renters in medium-large multifamily properties represent the smallest proportion of renters with high electric burdens and the largest portion with very low gas burdens (see Figure 40 for renter burden by home type).

[16] Definitions of each category are presented in the Methodology section.

Table 6: Comparison of Energy Burdens by Tenure and Home Type

Tenure	Home Type	Average Annual Income	Average Percent FPL	Average Energy Bill	Average Energy Burden	Median Energy Burden	Average Occupancy	Median Occupancy
Owners	Single-Family	$25,774	117.9%	$2,081	9.5%	6.9%	2.6	2
	Small Multifamily	$21,935	113.2%	$1,187	6.3%	4.4%	1.9	1
	Large Multifamily	$17,935	97.5%	$1,122	7.5%	4.3%	1.6	1
Renters	Single-Family	$26,554	108.9%	$1,924	8.6%	6.1%	3.3	3
	Small Multifamily	$22,878	104.2%	$1,215	6.8%	4.5%	2.7	2
	Large Multifamily	$19,793	97.9%	$868	5.4%	3.3%	2.1	1

Source: 2019 Census ACS PUMS

1.1.3 Location

Rental rates by home type do not differ significantly by climate group, but the prevalence of different home types does vary by climate zone, with a higher proportion of single-family homes in climate group 3 (44% versus 39-42%) (Table 7).

Table 7: Eligible Household Home Type, Own versus Rent by Climate Zone

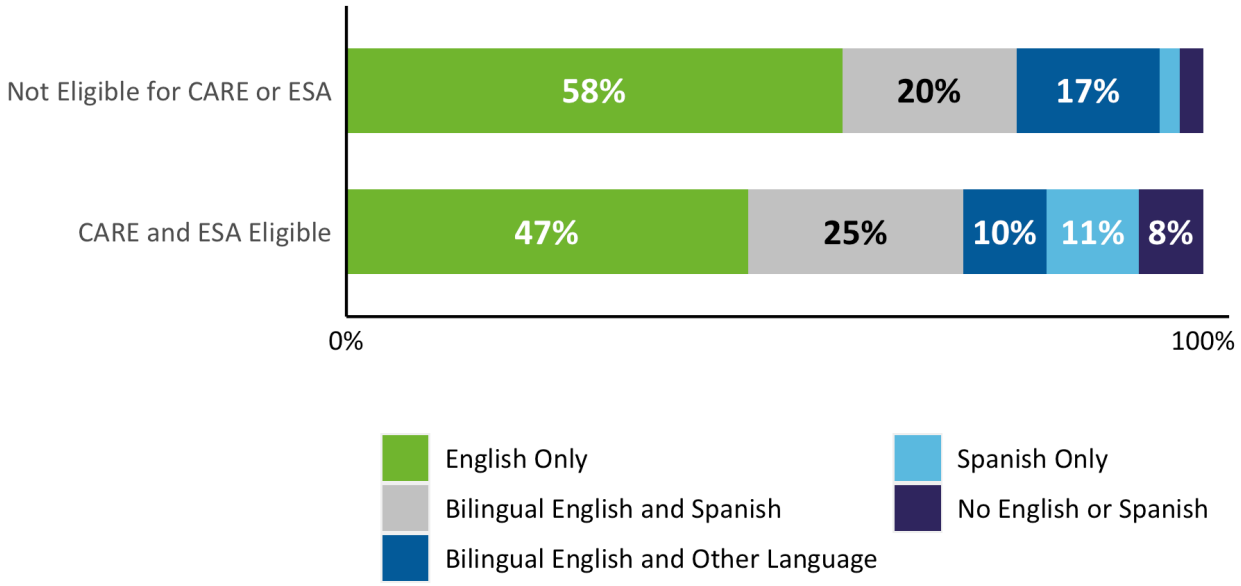
		Climate Group 1	Climate Group 2	Climate Group 3	Climate Group 4
Single-Family	Own	60.7%	58.2%	56.2%	59.6%
	Rent	39.3%	41.8%	43.8%	40.4%
Small Multifamily	Own	6.2%	9.7%	4.6%	4.7%
	Rent	93.8%	90.3%	95.4%	95.3%
Large Multifamily	Own	4.9%	6.1%	3.4%	1.7%
	Rent	95.1%	93.9%	96.6%	98.3%

Source: 2019 Census ACS PUMS

1.1.4 Households with No Residents Who Speak English or Spanish

Eligible renters are more likely to speak no English or Spanish compared to non-eligible households (Figure 5). This finding is statistically significant.

Figure 5: Language Spoken by Eligibility in Renter Population



Source: 2019 Census ACS PUMS

Among the 8 percent of eligible households that do not have English or Spanish speakers, there is a very wide range of languages spoken, which presents a challenge for program recruitment and implementation. Table 8 illustrates the other languages spoken by eligible households with no English or Spanish speakers.[17] Any languages spoken by less than 0.01 percent of the population were excluded. There is no dominant third language that would be a clear choice for program outreach—rather, these non-English non-Spanish households are diverse with respect to language. The ESA program does partner with community-based organizations to conduct in-language outreach and engagement with some of the groups shown in Table 8.

[17] This table shows the most commonly-spoken languages other than English and Spanish. Another 2.94 percent of the eligible population speaks one of 49 additional languages, with between 0.42 to .01 percent of eligible households speaking that language. The Census survey is offered in 12 non-English languages, with print guides for 59 additional languages.

Table 8: Non-English and Non-Spanish Languages Spoken by Eligible Households

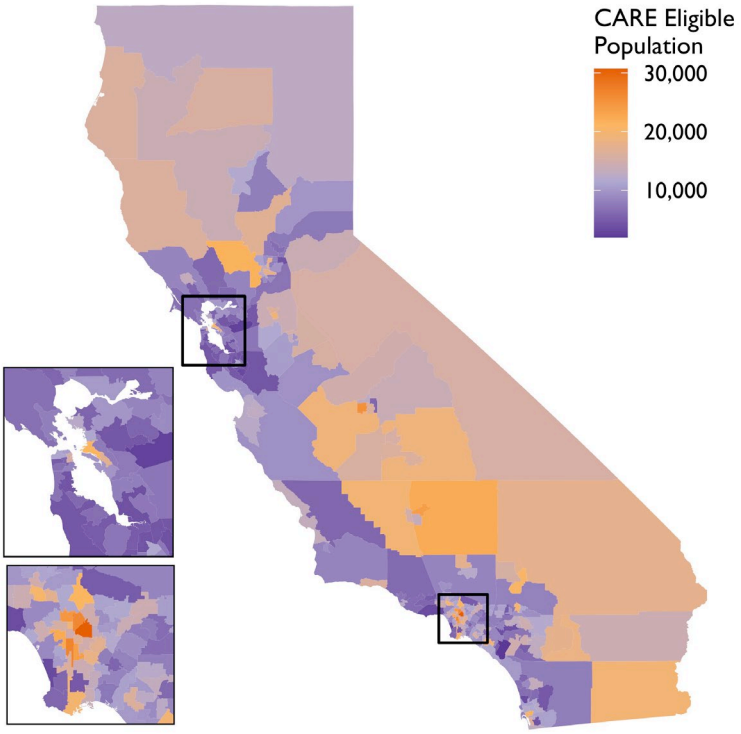
Language	% of Eligible Households
Chinese	1.13%
Korean	0.88%
Vietnamese	0.88%
Cantonese	0.59%
Armenian	0.56%
Mandarin	0.51%
Other (49 languages)	<0.50% each

Source: 2019 Census ACS PUMS

1.1.5 Location

Figure 6 provides a map of the CARE-eligible population by Public Use Microdata Area (PUMA). Each PUMA has approximately 100,000 people. Dark orange areas have 30,000 CARE-eligible households, or around 30 percent of the population, while light purple areas have around 10,000 (or 10%). Geographically smaller PUMAs necessarily have greater population densities. The two boxes provide a close-up view of the San Francisco Bay Area and the San Diego region. This map shows fewer CARE-eligible households (purple) along the coast, where there tend to be more metropolitan areas. A larger proportion of the population is eligible for CARE in inland, rural areas.

Figure 6: CARE-Eligible Population by Public Use Microdata Area (PUMA)



Source: 2019 Census ACS PUMS

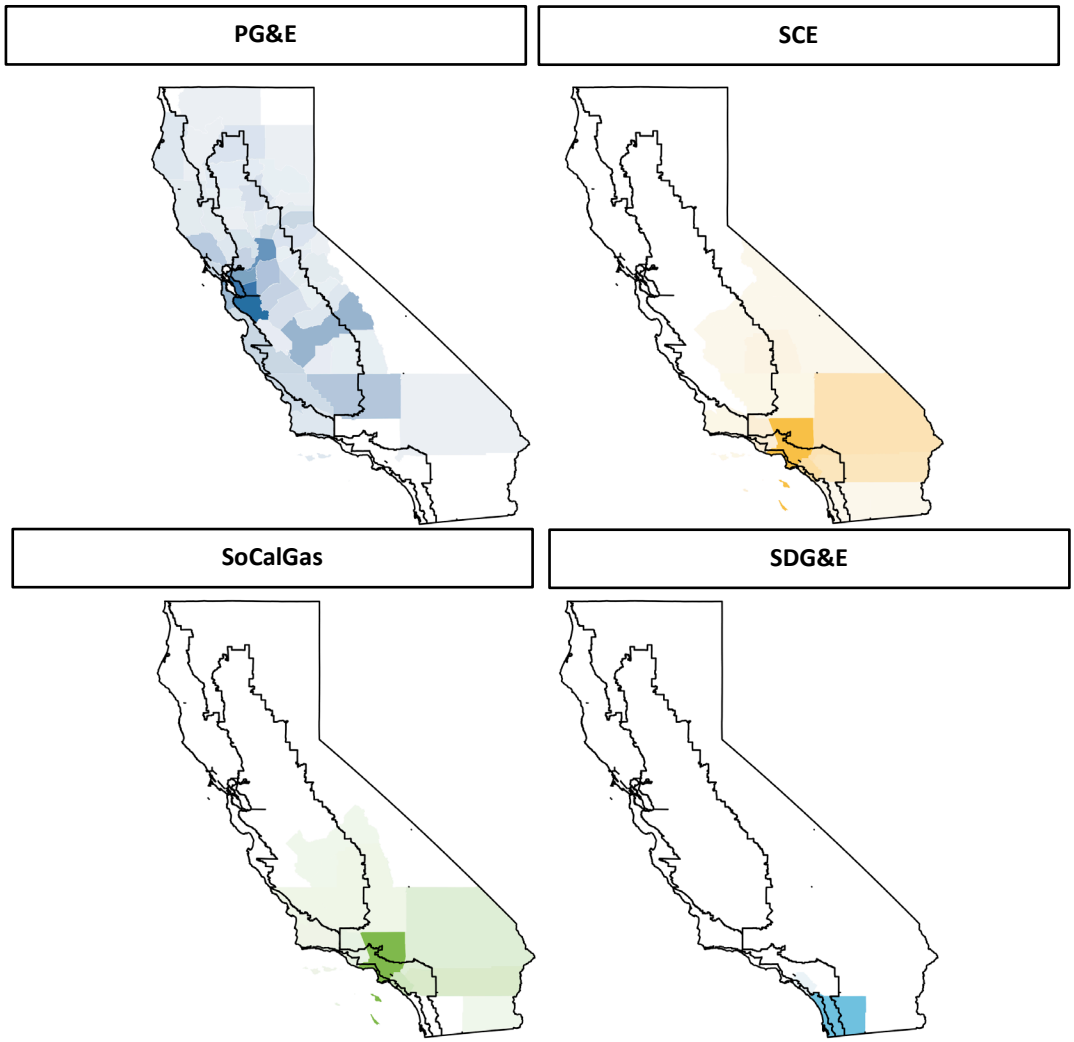
Census PUMS data are used to estimate where eligible households are and what characteristics they have. PUMS data provide anonymized household-level and individual-level characteristics from every single survey respondent. We identified the CARE eligibility status of each respondent using their reported income levels and household occupancy. The Census case weights enabled us to extrapolate our findings from analysis of individual households to the broader geographic regions (i.e., PUMA).

We created four climate groups to understand the percentage of households that were eligible for CARE across each climate zone. Approximately one fifth (20.5%) of climate group 1 (Northern California coast) households are eligible for CARE. Climate group 4 (Mountain/East) has the highest proportion of eligibility—almost one-third (32.1%) of households.

Figure 7 provides separate maps for each of the IOUs showing the concentration of income-eligible households within their service territories (by county), with the climate groups overlayed. Many of PG&E's income-eligible customers are concentrated in climate group 3, including much of the San Francisco Bay Area and the Central Valley. Both Southern California Edison (SCE) and Southern California Gas (SoCalGas) have income-eligible customers that are heavily concentrated in Los Angeles County in climate group 3, followed by San Bernardino County in climate group 4. Nearly

all of San Diego Gas & Electric's (SDG&E's) eligible customers are in San Diego County, which spans multiple climate groups with the greatest concentration in climate group 2.

Figure 7: Concentration of Income-Eligible Households by IOU and Climate Group



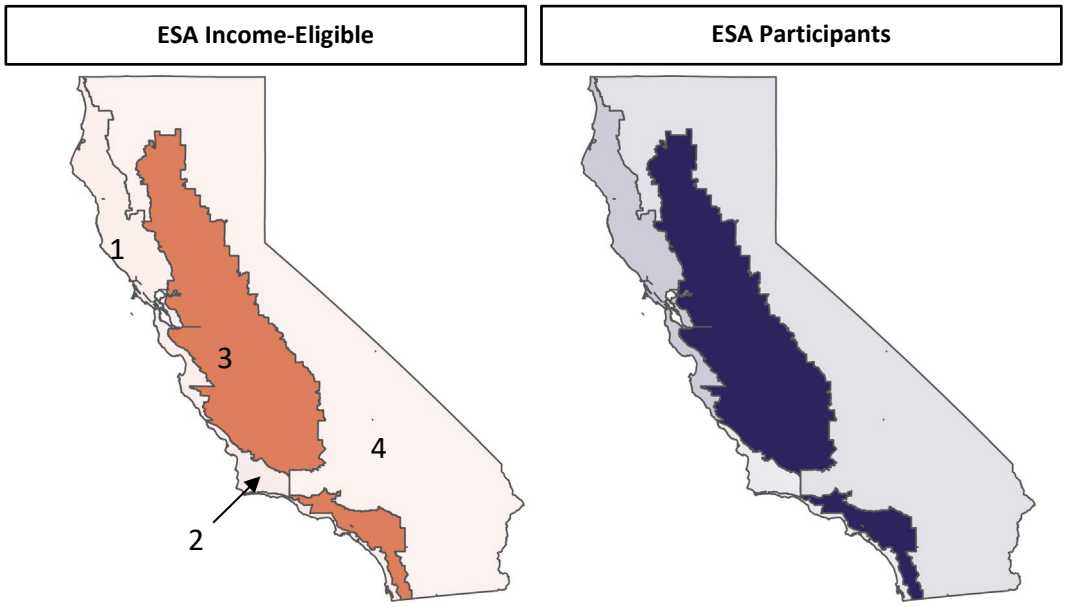
1.1.6 Overall Program Penetration

To estimate ESA program penetration, we compared ESA program customer data provided by the California IOUs to PUMA data to derive the number of ESA-eligible households by various metrics including climate group, home type, language spoken in the household, housing tenure,

disadvantaged community (DAC) status,[18] and urban/metro area.[19] Please note that ESA eligibility depends on household income as well as the feasibility of installing program measures. Not everyone who is income-eligible will be truly eligible to participate in ESA. Our tabulations of ESA program penetration are focused on ESA program activity between January 1, 2018, and December 31, 2020. Some of the income-eligible homes may not be eligible for ESA because they were already treated by ESA before 2018.

Figure 8 shows the saturation of ESA income-eligible households (orange) and ESA participants between 2018 and 2020 (purple) by climate group. In this example, climate group 3 is dominant in both eligible and participating households.

Figure 8: ESA Income-Eligible Households and ESA Participants by Climate Group



Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income eligibility

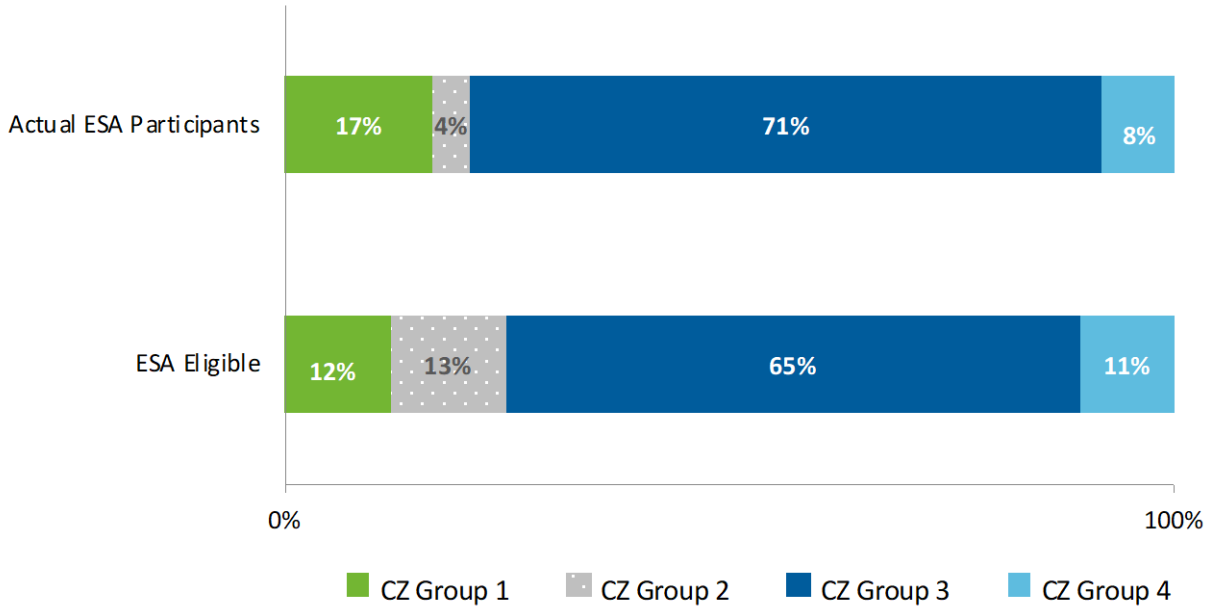
Figure 9 goes one step further to look at the relative representation of each climate zone. If participation is evenly distributed across the state, then we would expect the same proportions in each climate zone from ESA participants as the ESA-eligible population. Sixty-five percent of

[18] CalEnviroScreen identifies and designates California communities as DACs by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution.

[19] PUMAs are statistical geographic areas used by the US Census Bureau that divide each state into areas with a population of at least 100,000 people. These areas are updated after each decennial census, and this map uses the delineation released after the 2010 census as the analysis pre-dating the release of 2020 Census data.

eligible ESA participants and 71 percent of actual ESA participants are located in climate group 3. Climate group 2 is underrepresented; it has the lowest share of total ESA participants at 4 percent but contains 13 percent of the ESA-eligible population.

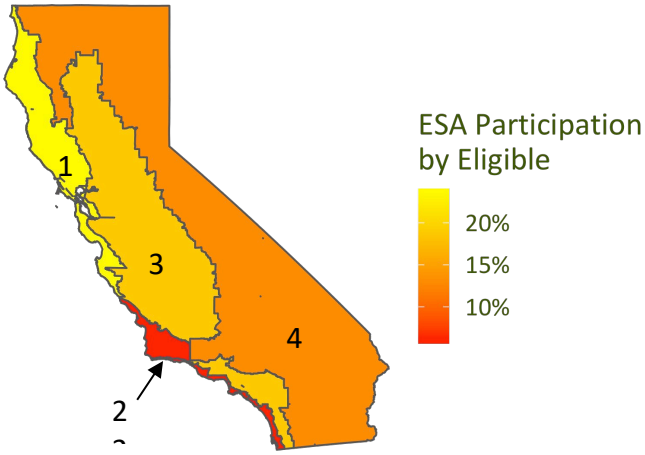
Figure 9: Distribution of ESA-Eligible and ESA Participants by Climate Group



Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income eligibility.

Figure 10 uses these two metrics to estimate the overall penetration of ESA among income-eligible households by climate group between 2018 and 2020. Overall, enrollment among those eligible is highest in climate group 1, with 24 percent of those eligible treated by ESA between 2018 and 2020. Enrollment is lowest in climate group 2, with only 6 percent of those eligible treated by ESA. Climate group 3 and climate group 4 had 19 percent and 13 percent of eligible customers treated by ESA, respectively.

Figure 10: Percentage of Income-Eligible Households Treated by ESA Program between 2018 and 2020

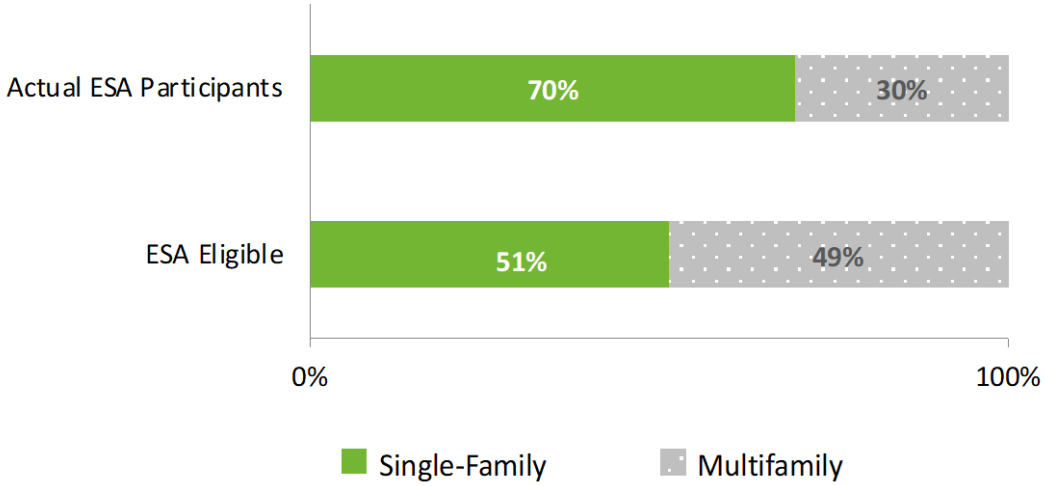


Climate Group	Income Eligible	ESA Treated	Program Penetration
1	383,813	92,373	24%
2	421,437	23,768	6%
3	2,093,906	396,439	19%
4	343,061	45,334	13%

Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income eligibility

Figure 11 displays ESA program penetration by home type. Multifamily households are significantly underrepresented, with 49 percent of the eligible households being multifamily while only 30 percent of households treated by the ESA program reside in multifamily housing.

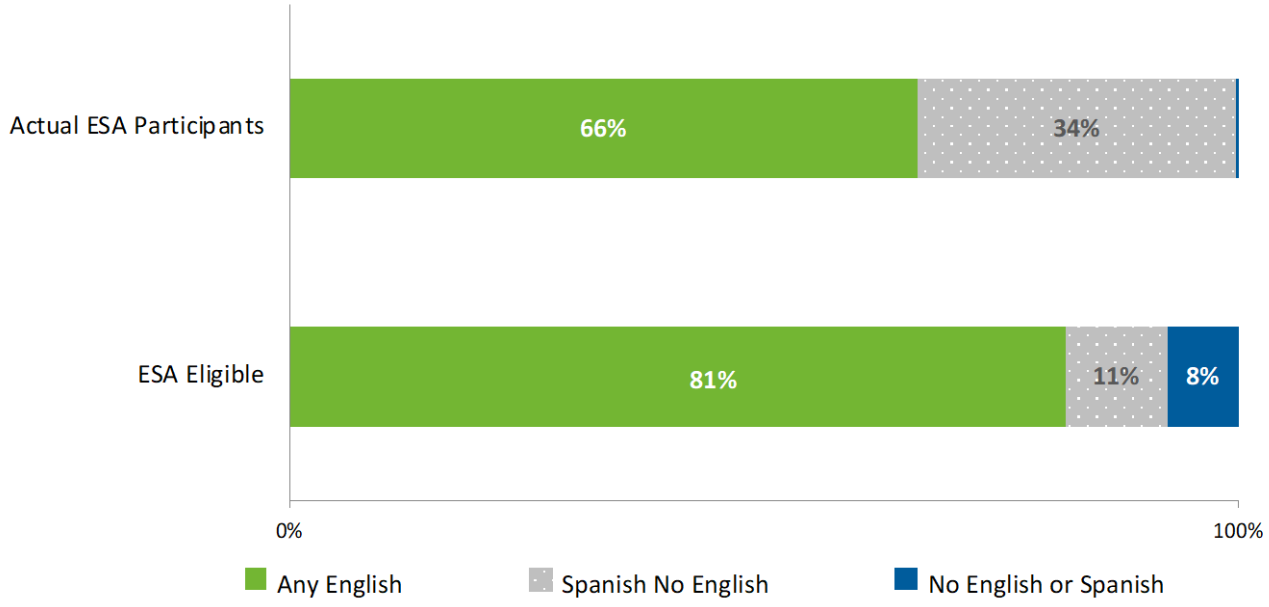
Figure 11: ESA Program Penetration by Home Type



Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income eligibility

Figure 12 shows ESA program penetration by language spoken in the household. Overall, English-speaking households appear to be under-represented, while Spanish-speaking households are well represented among ESA participants. English-only households also have higher energy burdens than dual language households or people who speak other languages (no English or Spanish). Hence, the program may not be reaching this sector who reflect relatively greater need.

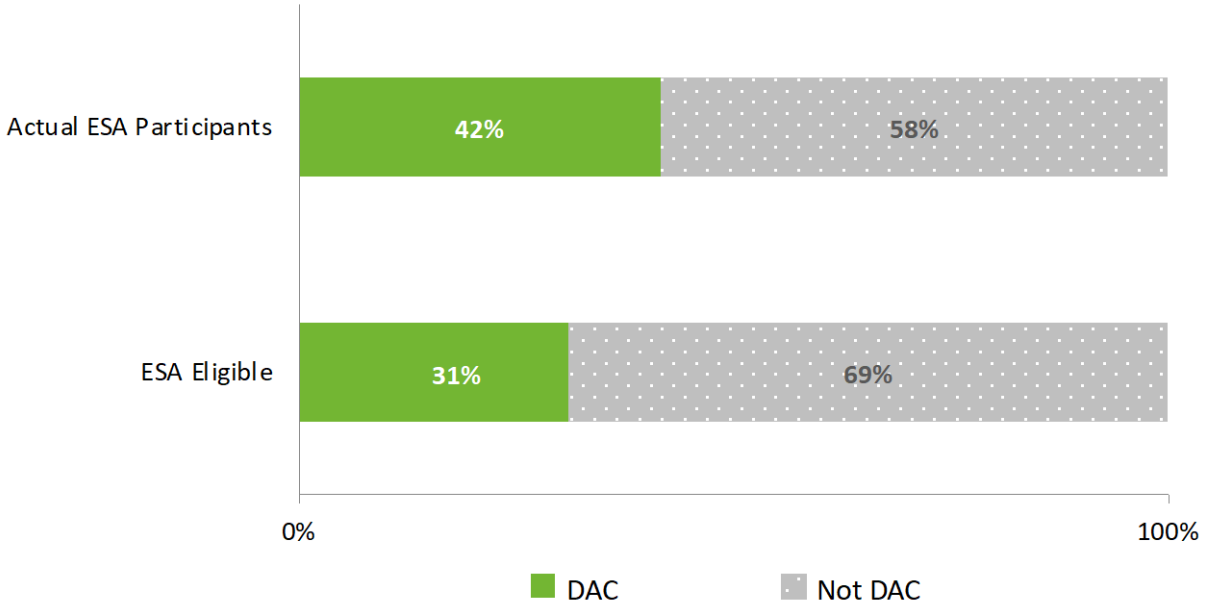
Figure 12: ESA Program Penetration by Language



Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income-eligibility

CalEnviroScreen identifies and designates California communities as DACs by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. DAC-designated households are overrepresented in ESA program penetration, with 42 percent of eligible households designated as DACs, while only 31 percent of households enrolled in ESA are designated as DACs (Figure 13).

Figure 13: ESA Program Penetration by DAC Status



Source: Evergreen analysis of ESA participation reported by the IOUs between 2018 and 2020, and 2019 Census ACS PUMS estimates of ESA income eligibility

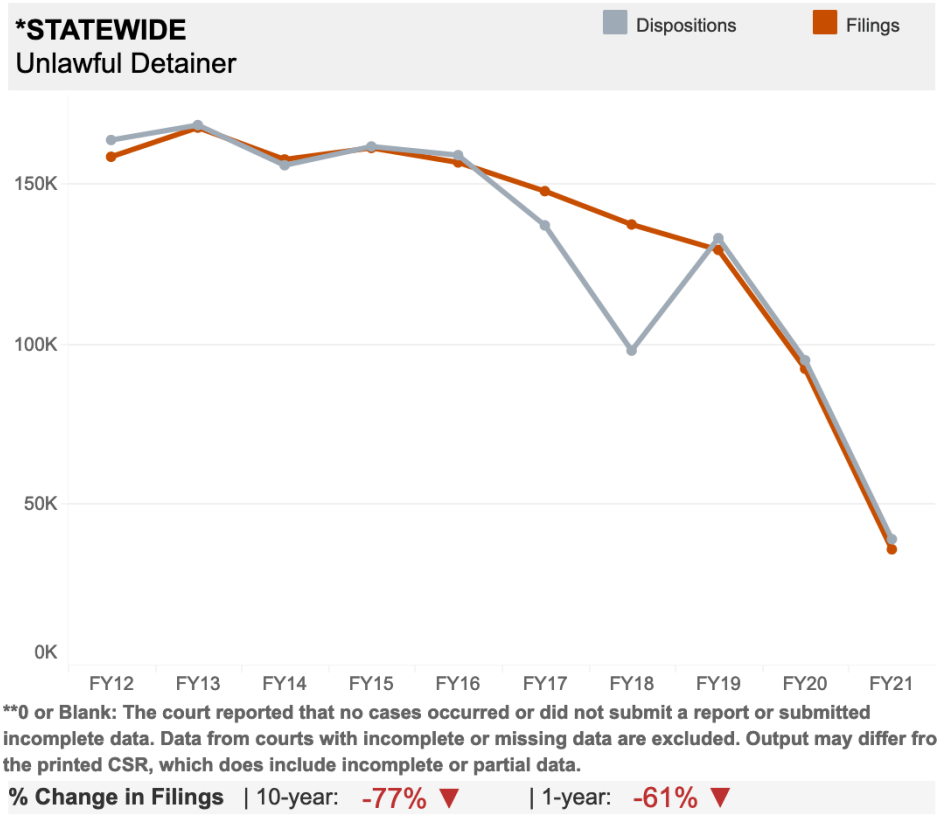
1.2 Eviction Rates

Tenants facing housing insecurity experience a range of issues, including inability to pay bills, poorer mental health, issues with physical health, and lost income—any of which could impact interest in enrolling in an energy efficiency program. From the perspective of ESA participation, tenants who expect to leave their home in the near future—either via their own volition such as in moving or via potential eviction—have little or no incentive to enroll in the ESA program. Eviction exacerbates housing insecurity, as evicted tenants are prone to extended periods of residential instability post-eviction. Housing insecurity is therefore a fundamental barrier to tenant adoption of ESA programs.

1.2.1 Evictions in California during the COVID-19 Emergency

Few states took the Centers for Disease Control's (CDC's) warning to stop evictions during the COVID-19 pandemic as seriously as California. As the state's statistics show, "unlawful detainer" filings (evictions) plummeted in 2020-2021.

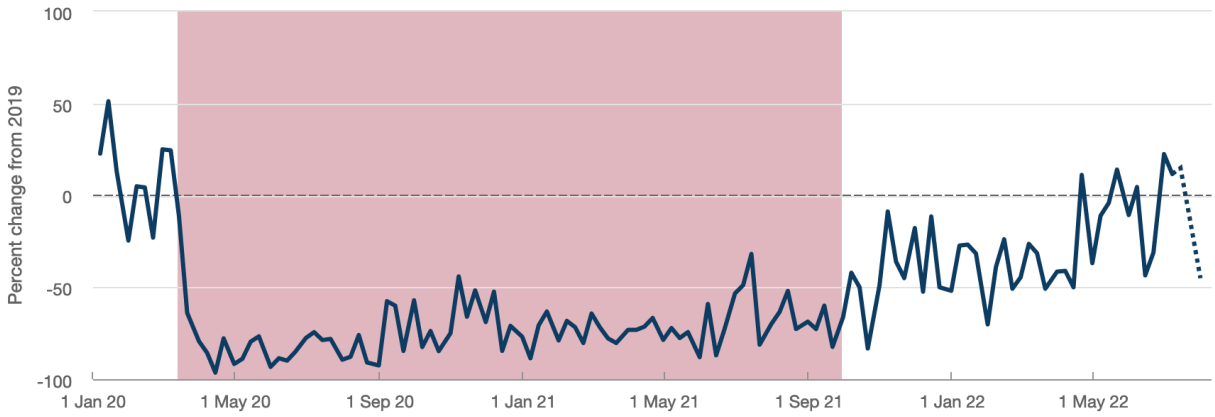
Figure 14: Statewide Eviction Filings in California, 2012-2021



Source: California Courts. "CSR Dashboards." https://www.courts.ca.gov/dashboard.htm

What will 2023 bring? Filings have returned to pre-pandemic levels in most states studied by the Eviction Lab. While data for 2022 are not yet available statewide in California, filings have returned to pre-pandemic levels in San Francisco.

Figure 15: Eviction Filings Relative to 2019 Baseline in San Francisco



Source: Federal Reserve Bank of Cleveland, Public eviction records from housing and civil courts and author's calculations. Eviction policies from Benfer (2020), public notices, and authors' calculations.
Periods shaded in yellow signify a proceeding ban that permits eviction filings. Periods shaded in red signify a filing ban.

Source: Federal Reserve Bank of Cleveland. "Data Updates: Measuring Evictions during the COVID-19 Crisis." August 17, 2022. https://www.clevelandfed.org/newsroom-and-events/publications/community-development-briefs/db-20200902-data-updates-measuring-evictions-during-the-covid-19-crisis.aspx

In contrast, the Los Angeles City Council has voted to extend its eviction moratorium for non-payment through the end of 2022. Nonetheless, we expect that by 2023, eviction filings in California will have returned to their 2018-2019 baseline. This section therefore focuses on this earlier period.

1.2.2 Evictions in California before 2020

The state of California provides tenants with a robust set of protections against eviction, so that the state enjoys below-average eviction filing rates despite the state's severe affordability crisis. In 2018, Eviction Lab estimates that 130,000 California households were filed against, or 2 percent of all renter households in the state. Nationwide in 2018, close to 6 percent of households were filed against. Furthermore, California appears to be making progress on evictions even as rents steadily increase; in 2010, household filing rates were nearly twice as high (3.9%).

Within this tenant-friendly context, one aspect of Californian housing law deserves elaboration. The Ellis Act allows California property owners to pursue no-fault evictions for all of their tenants as long as the property owner subsequently removes their properties from the rental market. The Ellis Act was designed to protect smaller landlords from the situation where they want to "retire" but the presence of tenants means they are unable to cash in on home equity, transfer the property to their children, or so on. However, the Ellis Act has proven to be a convenient mechanism for property owners (large and small) who want to convert rent-controlled units into profitable market-rate condominiums.

It is important to understand California's low eviction rate in this context. High eviction rates in other states are generated by mass evictors, landlords who every year file hundreds of eviction cases against tenants concentrated in the poorest market segments. Repeated mass filings can be a profitable business strategy in states with weak tenant protections or weak real estate markets, neither of which applies to California. Instead, California landlords can profit from one-off eviction filings; a single batch of Ellis Act evictions allows property owners to convert their portfolios of low-income rental properties into high-profit market-rate homes.

A recent study of Ellis Act evictions in greater Los Angeles suggests that landlords are using these no-fault evictions to convert below-market rentals into more profitable opportunities. While public housing units and Low-Income Housing Tax Credit (LIHTC) units are typically rented to similarly low-income tenants, public housing is *protective* against evictions, while LIHTC units are *predictive* of evictions.[20] The major difference between public housing and LIHTC units is that LIHTC units are privately owned, while public housing units are not. Occupants of privately owned rentals in hot markets know that their units are one Ellis Act eviction away from conversion into housing for higher-income home buyers. Prone to displacement, renters in these hot markets have little to gain from ESA participation. This can be seen in responses to the renter survey, such as "We are afraid our rent will go up if upgrades are made." (39% of those reluctant to enter the rental service agreement).

An Ellis Act eviction can only be filed once on a property, and so this dynamic produces low observed filing rates in areas with hot real estate markets. However, their effect on California's housing market is much greater than these low filing rates would suggest.

Outside of the hottest markets, California property owners use evictions as a way to discipline or remove non-paying tenants. Because filings for non-payment can be repeatable events, cool markets will tend to generate higher overall eviction rates. Studies of eviction trends in Greater Los Angeles do indeed confirm that court-based filings (i.e., not Ellis Act filings) are most concentrated in areas with higher percentages of Black residents.[21]

Renters in disadvantaged markets are more likely than others to have adversarial relationships with landlords, which is reflected in common reasons reported in the renter survey as barriers to ESA participation: "It's too much trouble to get approval from the landlord" (47%), "We are skeptical that it is really free" (36%), and "We move often" (18%). Indeed, single-parent

[20] Lens, MC, Nelson K, Gromis A, Kuai Y. The Neighborhood Context of Eviction in Southern California. City & Community. 2020;19(4):912-932. https://journals.sagepub.com/doi/10.1111/cico.12487

[21] Nelson, Kyle, et al. "Spatial concentration and spillover: Eviction dynamics in neighborhoods of Los Angeles, California, 2005–2015." *Housing Policy Debate* 31.3-5 (2021): 670-695.

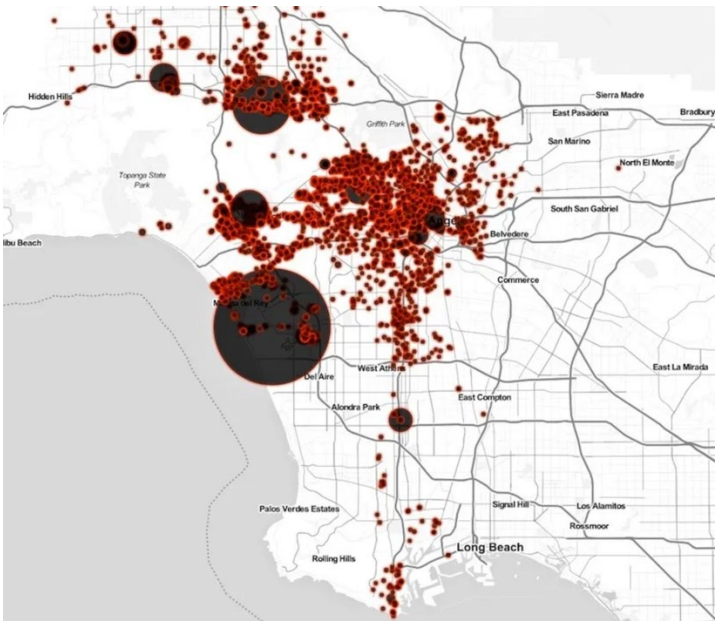
households, which are among the most eviction-prone households,[22] reported that it is "too much trouble to get permission" from their landlord at significantly higher rates than other households.

1.2.3 Evictions in Greater Los Angeles

California's eviction crisis is centered in Southern California, especially Los Angeles and its surrounding counties. Over 41,000 households (a 2.2% household filing rate) were filed against in Los Angeles County in the years before the pandemic. While sizeable, this still represents a substantial drop from the nearly 59,000 homes that were filed against in 2012.[23]

Los Angeles is also the most frequent site for Ellis Act evictions. The Anti-Eviction Mapping Project, which has been counting and mapping these no-fault evictions, has observed 27,000 Ellis Act evictions within the city of Los Angeles since 2001.

Figure 16: Ellis Act Evictions in Los Angeles



Source: The Anti-Eviction Mapping Project

As frequent as evictions are in Los Angeles County, the household filing rates in the counties surrounding Los Angeles are even higher. Ignoring tiny Alpine County (a 5.3% household filing rate), the counties with the highest rates in the state are San Bernardino County (4.4%), Kern

[22] Desmond, Matthew, and Carl Gershenson. "Who gets evicted? Assessing individual, neighborhood, and network factors." *Social science research* 62 (2017): 362-377.
[23] See https://evictionlab.org/map/ for all estimates of the households threatened rate.

County (3.9%), and Riverside County (3.6%). Taken together, these three counties represent another 25,000 households threatened by eviction.

In Greater Los Angeles alone,[24] 70,000 unique households were threatened with eviction in 2018. Evictions are especially common in the Inland Empire, where places like Desert Hot Springs (5% household filing rate, 55% of population is rent burdened, 55% of population is Hispanic) are well represented.

Greater Los Angeles is also notable as an active site for institutional investors. While the rate of homes purchased by investors in California is similar to the national average (around 10%), the Inland Empire has much higher rates, with many zip-codes averaging rates from 15 to 28 percent.[25] Researchers have linked large, corporate landlords to higher rates of eviction.[26] Corporate landlords may also have a different level of receptivity to ESA than smaller, less professionalized owners.

1.2.4 Greater Sacramento and the Central Valley

After Los Angeles, Greater Sacramento stands out as an area with above-average household eviction rates. Sacramento and Yuba Counties had household eviction rates of 3.2 percent, Sutter County had a rate of 2.5 percent, and El Dorado County had a rate of 2 percent. Altogether, Greater Sacramento saw around 9,000 unique households threatened with eviction in 2018.

The Central Valley is the third and final region of California with above-average eviction rates. San Joaquin County has a household filing rate of 3.3 percent (3,150 households), Stanislaus County has a household filing rate of 3.0 percent (2,101 households), and Merced County has a household filing rate of 2.4 percent (895 households).

San Francisco and the Bay Area

The nine-county San Francisco Bay Area performs remarkably well in terms of eviction filings, despite the extreme costs of housing in these counties. Solano County, with a household filing rate of 2.8 percent, is the only county with a filing rate over the state average. Contra Costa County has the next highest household filing rate (2.0%) followed by Alameda County (1.3%). The counties of San Francisco, San Mateo, and Santa Clara each have filing rates of around 1 percent. In this giant metropolitan area, fewer than 17,000 households were threatened with evictions in 2018.

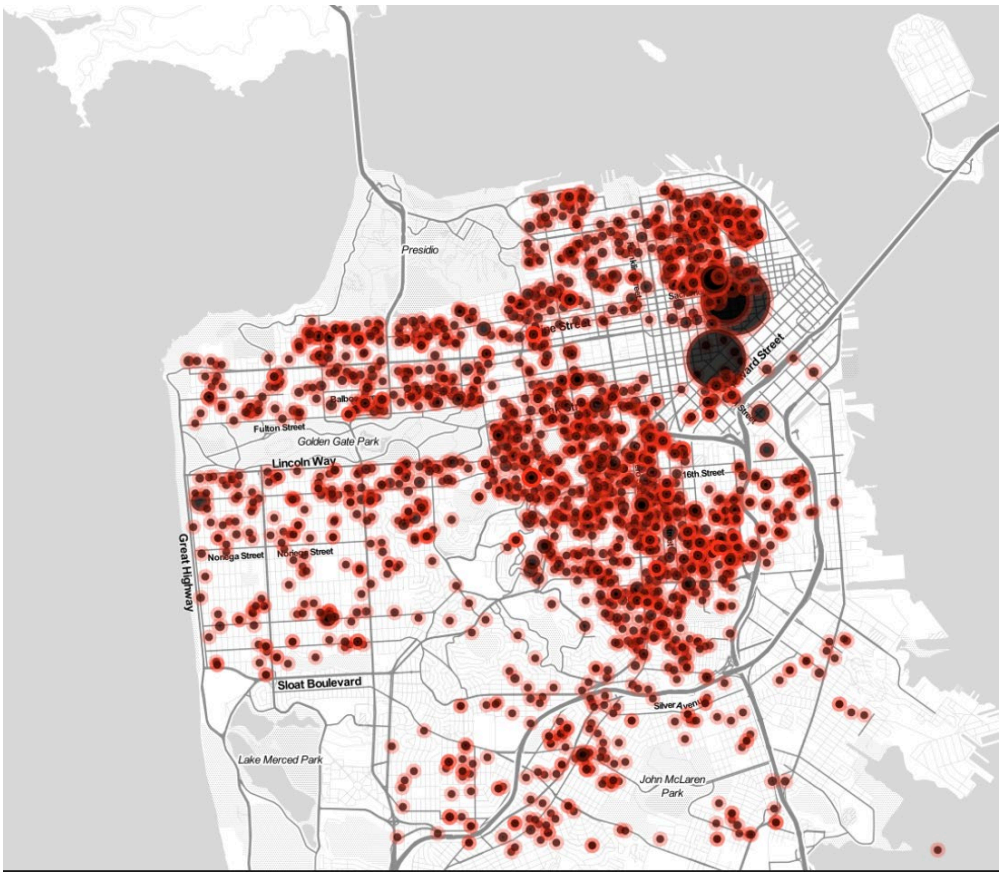
[24] Los Angeles County, Ventura County, San Bernardino County, Riverside County, and Orange County

[25] The Washington Post. “Investors bought a record share of homes in 2021. See where.” February 16, 2022. https://www.washingtonpost.com/business/interactive/2022/housing-market-investors/

[26] Gomory, Henry. "The Social and Institutional Contexts Underlying Landlords’ Eviction Practices." *Social Forces* 100.4 (2022): 1774-1805.

In San Francisco, around 25 percent of eviction filings occur in the 26,000 affordable units supported by city programs.[27] These filings are concentrated in the Tenderloin neighborhood and disproportionately affect Black tenants. In contrast, the 5,500 Ellis Act evictions filed in San Francisco between 1994 and 2021 have a broader geographic scope.

Figure 17: Ellis Act Eviction in San Francisco, 1994-2021



Source: The Anti-Eviction Mapping Project

1.2.5 Greater San Diego and the Central Coast

The Greater San Diego and Central Coast regions are being grouped together because they share uniformly low household eviction rates, ranging from 1.8 percent (Imperial County) and 1.6 percent (San Diego County) to 0.9 percent (Santa Cruz County). Eviction Lab estimates that in

[27] Mission Local. "Explore: Thousands of eviction notices served in SF subsidized housing over 5 years." August 2, 2022. https://missionlocal.org/2022/08/evictions-public-housing-san-francisco/

2018, evictions were filed against approximately 9,300 Greater San Diego and 2,500 Central Coast households.

1.2.6 Non-Metro Northern California

The low-population counties north of Greater Sacramento all have household filings rates near or below the state's 2 percent average. With the exception of Humboldt County and Butte County (where approximately 40% of households are renter-occupied), these counties also have low rates of renter occupancy (around 25% to 30% of households are occupied by renters). This of course contrasts to urbanized areas such as Los Angeles County, where over half of homes are renter-occupied.

1.2.7 Eviction Summary

Housing insecurity presents a substantial barrier to adoption of ESA programs. A comparison of the geographic and demographic patterns discussed above to the heat map of ESA-eligible households reveals substantial overlap. Lower income and non-white neighborhoods in Los Angeles in particular see high rates of displacement and redevelopment due to Ellis Act evictions. These renters may be reluctant to put in the effort to upgrade their homes, when this only makes the prospect of an Ellis Act conversion more attractive.

By contrast, the Inland Empire deserves attention as a region of opportunity. This is also an area with a large number of ESA-eligible households and a large number of evictions for non-payment. Demand for energy savings is high here due to a prevalence of single-family homes and extreme seasonal temperatures. Housing insecurity may be preventing these renters from pursuing long-term energy savings through the ESA program, even as these savings may in themselves be a solution to housing insecurity.

Table 9 and Table 10 show the differences in CARE eligibility between IOU service territories and disadvantaged communities (DACs) and non-DACs.[28] Overall, more DAC households are CARE eligible, and SCE has the highest percent of customers in its service territory that are CARE eligible.

Table 9: Household CARE Eligibility by Disadvantaged Community

DAC Status	Percent of Households that are CARE Eligible
DAC	35%
Non-DAC	23%

Source: 2019 Census ACS PUMS

[28] DAC status is determined by geography using CalEnviroScreen 3.0 scores from https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

Table 10: Household CARE Eligibility by IOU

IOU	Percent of Households that are CARE Eligible
Southern California Edison	26%
Southern California Gas	28%
Pacific Gas and Electric	23%
San Diego Gas & Electric	22%

Source: 2019 Athens Data

Table 11 shows the differences in CARE eligibility by IOU and DAC status. In each IOU service territory, households that are considered to be in a DAC are more likely to be CARE eligible. Note that proportionally more low-income customers are in DACs, but it is still less than half of the low-income population.

Table 11: Household CARE Eligibility by IOU and Disadvantaged Community

IOU	DAC Status	Percent CARE Eligible within Region
Southern California Edison	DAC	33%
	Not DAC	23%
Southern California Gas	DAC	35%
	Not DAC	24%
Pacific Gas and Electric	DAC	35%
	Not DAC	22%
San Diego Gas & Electric	DAC	31%
	Not DAC	22%

Source: Athens Data & 2019 Census ACS PUMS

1.3 Self-Reported Data vs. IOU Data

The following section analyzes the differences between self-reported energy bills and income compared to what was provided by the IOUs.

Figure 18 shows self-reported annual income compared to the income values gathered from IOU data. Self-reported income was used in energy burden analysis of survey respondents, expecting that values given during the survey would be more reliable and up to date.

Figure 18: Self-Reported vs. IOU-Provided Household Annual Income (n=702)

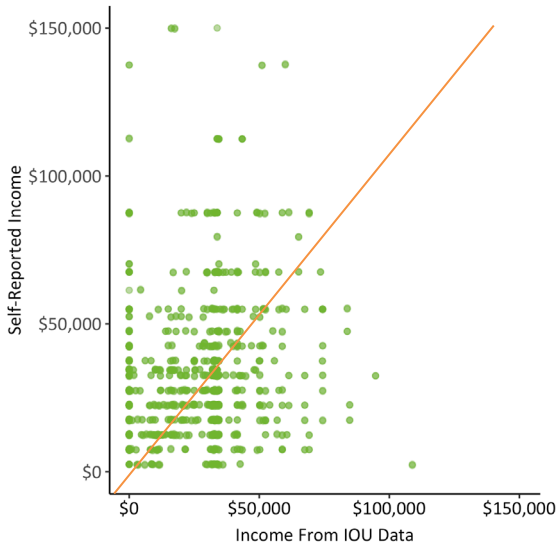
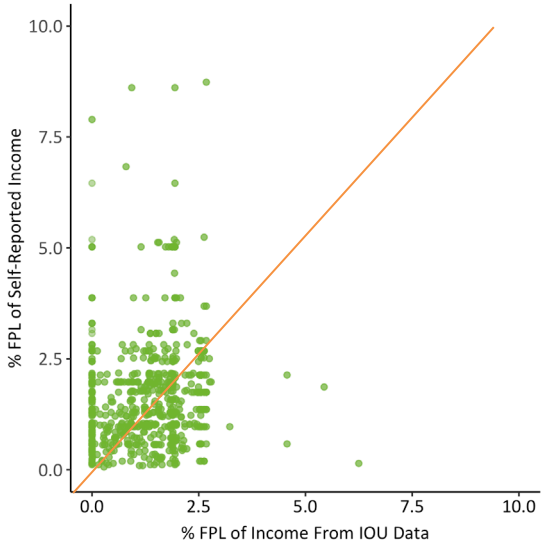


Figure 19 shows self-reported survey and IOU-listed income as a percent of 2021 FPL to see whether high-income earners are big households or ineligible to participate in CARE. There does not appear to be much more clustering at the lower FPL.

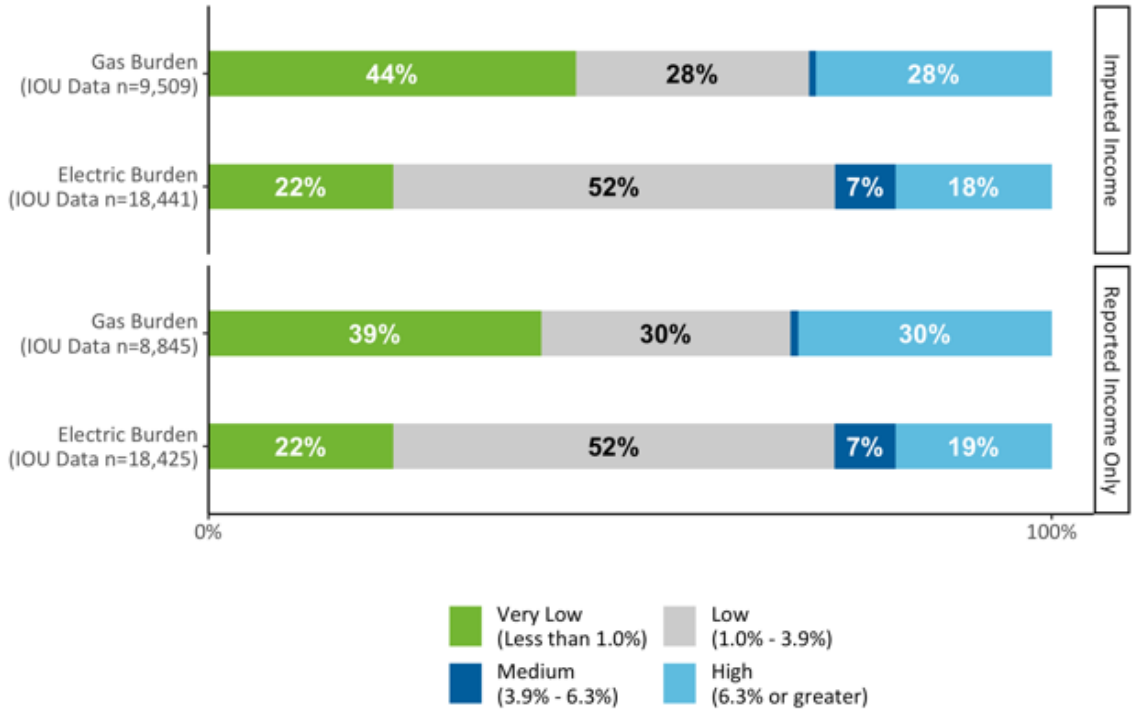
Figure 19: Self-Reported vs. IOU-Provided Income as Percent of FPL



Household income was self-reported during the CARE renter survey. For respondents who declined to provide income in the survey, we relied on verified income from the CARE or ESA

enrollment records.[29] If neither was available, we imputed incomes based on the CARE-qualifying threshold for the number of people in the household (occupancy). To confirm that this income imputation was reasonably accurate, we estimated the energy burden within the IOU data with and without imputed incomes, shown in Figure 20. There were no statistically significant differences in the electric burden caused by this imputation and only small changes to gas burden. Imputation caused the proportion of households with low or very low gas burden to increase from 69 percent to 72 percent and high burden decreased from 30 percent to 28 percent. This confirms that our imputation method may slightly underestimate the true energy burden. However, imputation also increased the gas sample size by 8 percent, from n=8,845 to n=9,509. We believe this small downward bias from imputation is less important than maintaining a large sample for analysis, as the project stakeholders are interested in seeing cross-tabulations of energy burden by customer segment.

Figure 20: CARE Participant Energy Burden, by Income Imputation Status



Source: Evergreen analysis of a random sample of CARE participants with utility billing and reported household income (or imputed income from reported occupancy) provided by the IOUs in 2021.

[29] While we have verified income for some of these respondents in the CARE and/or ESA program data, we chose to rely on the self-reported income for the energy burden calculations as the 2021-2022 survey would be more likely to align with their income during the year reflected in the utility bills.

Figure 21 and Figure 22 show self-reported average monthly utility bills compared to average monthly utility bills gathered from IOU data. Energy bills gathered from the IOUs were used in energy burden analyses for survey respondents.

Figure 21: Self-Reported vs. IOU-Provided Electric Bills (n=477)

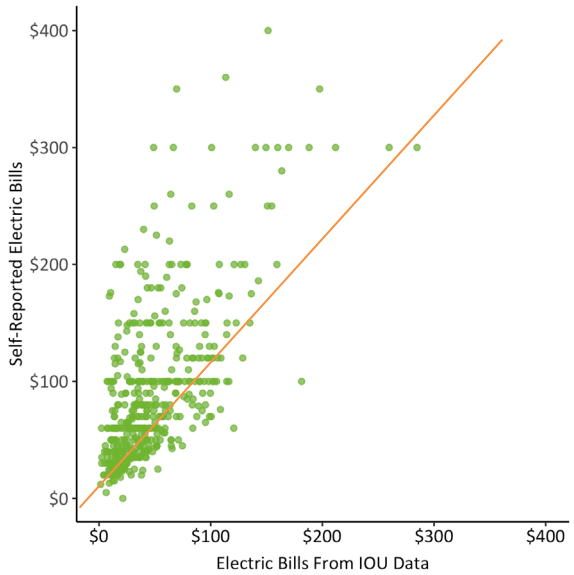


Figure 22: Self-Reported vs. IOU-provided Gas Bills (n=165)

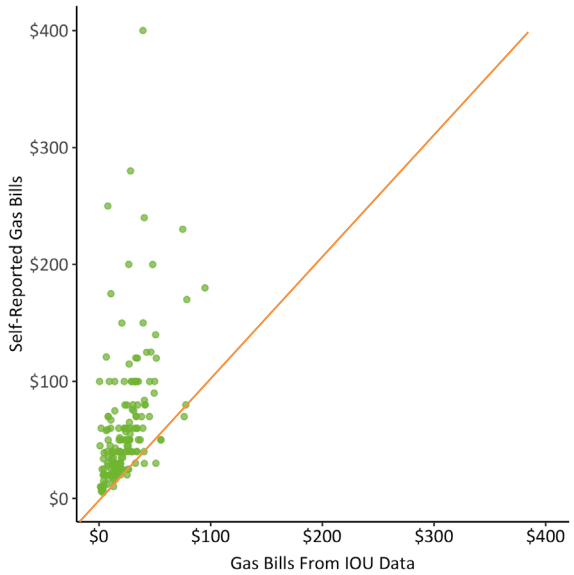


Table 12 shows that renters tend to overestimate their energy bills. On average (unweighted), renters estimated that their average electric bill was on average $51 more per month than was determined from their billing data. Renters also reported that their average gas bill was, on average, $40 more than what was calculated from the IOU billing data.

Table 12: Difference in Self-Reported and IOU-Provided Data Bills

Fuel Type	Electric	Gas
Self-reported average monthly bill	$100	$63
Billing data average monthly bill	$49	$23
Difference	**$51**	**$40**

1.4 Energy Burden

Energy burden was estimated for households in California using three data sources:

1. Census data for all CARE-eligible households in the state of California;
2. California IOU data of a random sample of CARE participants; and
3. Survey data of CARE participants that are also renters.

The Census was required to report on energy burden for CARE-eligible owners and non-English/non-Spanish speakers (as they were not surveyed or identified in the IOU data), the survey was required to report on energy burden for topics like the willingness to participate in ESA. There is no singular source that could address all our research objectives.

Energy burden is calculated as the percentage of income that is spent on gas, electricity, or the total energy bill (gas and electric) faced by a household. For simplicity, we consider a household with an energy burden of 6.3 percent or higher as high energy burden, an energy burden between 3.9 and 6.3 percent as medium, an energy burden between 1.0 and 3.9 percent as low, and an energy burden of less than 1.0 percent as very low energy burden.

The table/figure titles and labels provide important information about the population being described (e.g., all CARE-eligible households versus CARE renters). The table/figure footnotes list the data source unless it came from our primary data collection, the survey of CARE-participating renters. See Section 3.1.1 in the main report for a longer discussion of the benefits and caveats for each data source. We used the Census to characterize all CARE-eligible households in California (including owners) and then relied on the survey to characterize CARE renters, using self-reported income and actual utility bills that were provided by the IOUs.

Summary of Energy Burden

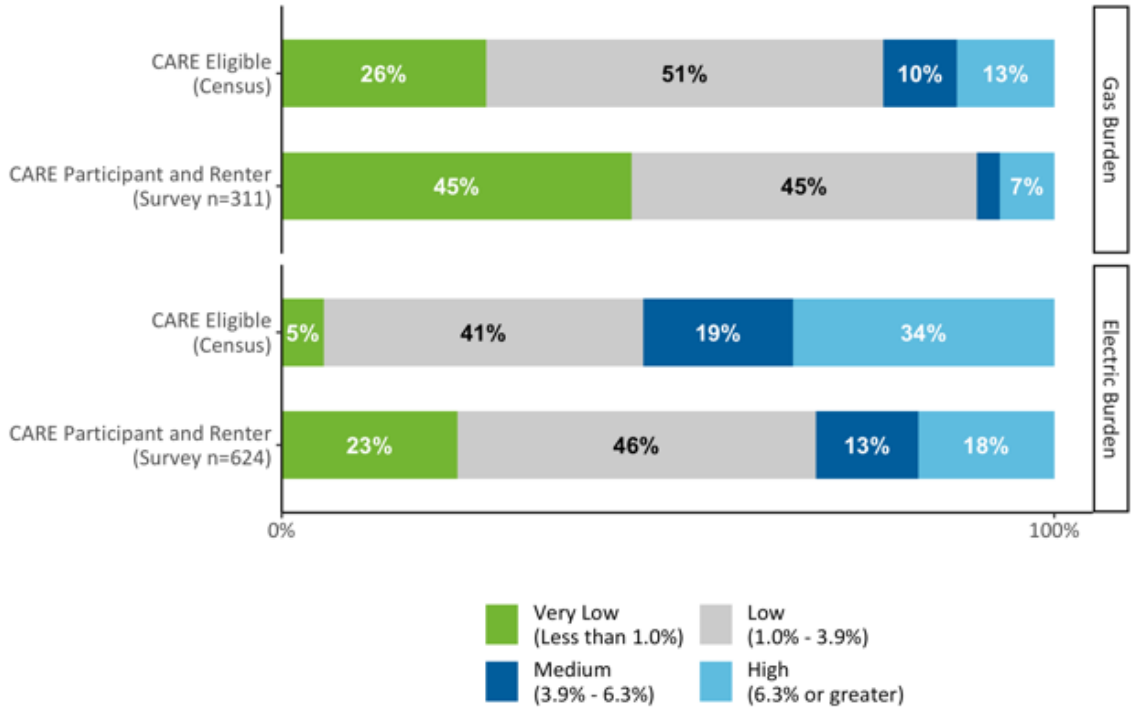
Figure 23 provides a comparison of energy burden estimates across the different data sources. We show energy burden by fuel for: the full CARE-eligible population (Census), an extract of current CARE participants (IOU data, both owners and renters), and renters who are CARE participants (survey).

In the Census analysis from the market characterization, we found that bills were usually lower for renters, which is partly due to having smaller living spaces to heat and cool than owners. Our estimates of gas energy burden from the CARE renter survey were consistent with this finding, with 90 percent of CARE renters versus 72 percent of all CARE participants having low or very low energy burdens. Electric energy burdens were much less drastic, with slightly higher electric burdens in renters than owners; this may be due to lower rates of gas service among renters, with more of their energy usage reflected in their electric bills.

The biggest difference between the CARE eligible energy burden estimate in the Census and the CARE participants is that the Census asked for self-reported energy costs by fuel type, whereas we had access to actual utility bills for the sample of CARE participants and all survey respondents.[30] Because we believe that the utility billing data and survey responses are likely more accurate than the Census data for our sample, we relied on them to calculate energy burden for renters. The Census data were used to estimate energy burden for the full population of CARE eligible households (including owners) and for customer segments that were not surveyed (e.g., owners and non-English/non-Spanish speakers). We also used Census data for some customer segments where the survey sample was not sufficient enough to make a reliable comparison (e.g., energy burden by disability).

[30] While Census data can be used to estimate energy burden for CARE-eligible renters, we believe the utility bills provided by the IOUs are more accurate than the annual fuel costs self-reported by the respondents to the Census. In the survey, self-reported utility bills were consistently higher than the actual utility bills (as shown in Appendix B), which would bias the energy burden estimates.

Figure 23: Overall Energy Burden Findings



Source: 2019 Census ACS PUMS estimates of income-eligible households and a 2021-2022 phone and web survey of CARE renters with utility billing provided by the IOUs in 2021.

All CARE-Eligible – Census

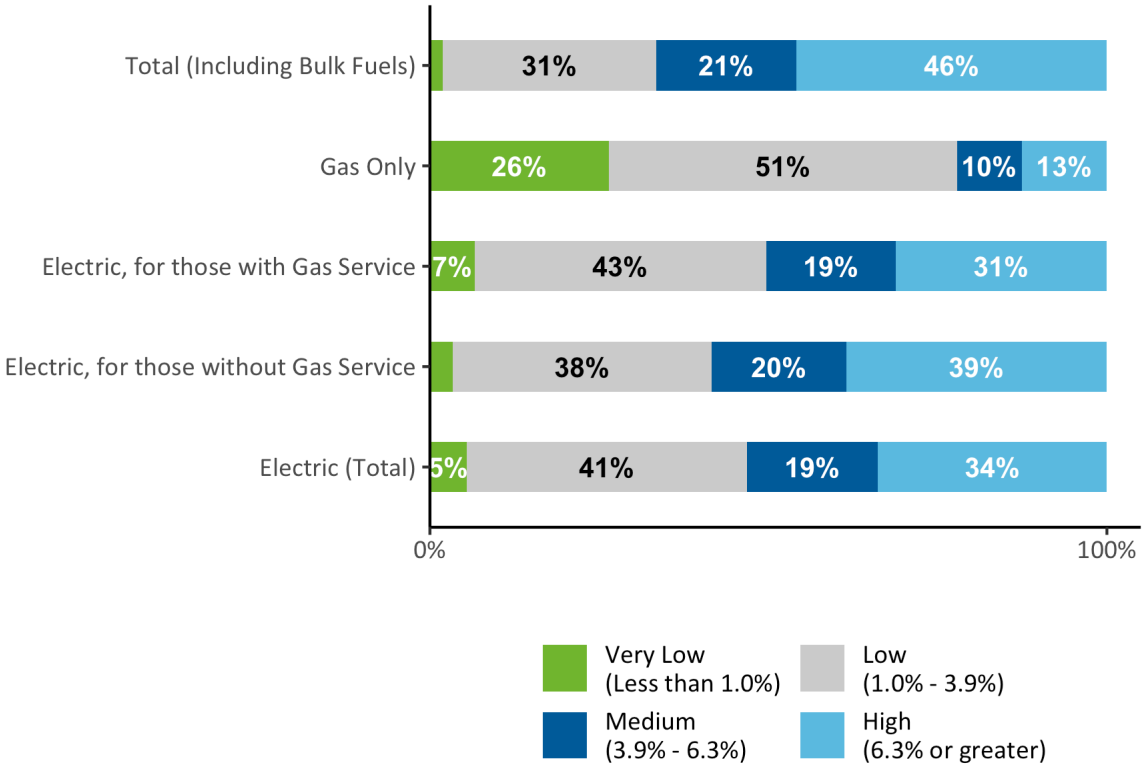
This section provides an overview of energy burdens for households across the state of California, using household income and annual energy bills that were self-reported by respondents as part of the 2019 Census ACS.

We first show energy burdens for all fuel types combined (including bulk fuels), natural gas only, electric burden for households with gas service, electric burden for those without gas service, and an average across all types of electric customers (Figure 24). The total energy burden shows that 46 percent of CARE-eligible households have high energy burden, 21 percent have medium energy burden, and 33 percent have low or very low energy burden. We have split out each fuel separately to provide a more useful comparison between those eligible for CARE (from the Census) and CARE participants (from the IOU data), where it was only possible to estimate gas and electric burden separately.

Electric energy burdens are higher than gas energy burdens across households with and without gas service. Electric energy burdens for those without gas service are higher than electric energy burdens for those with gas service, likely due to the need to use electricity to heat houses and

water. Around 26 percent of CARE-eligible households have very low gas burden; while this may seem to imply that homes with gas have lower need for energy assistance, it is important to remember that these households still have electric service, which also contributes to their overall energy burden.

Figure 24: CARE-Eligible Household Energy Burden by Fuel Type



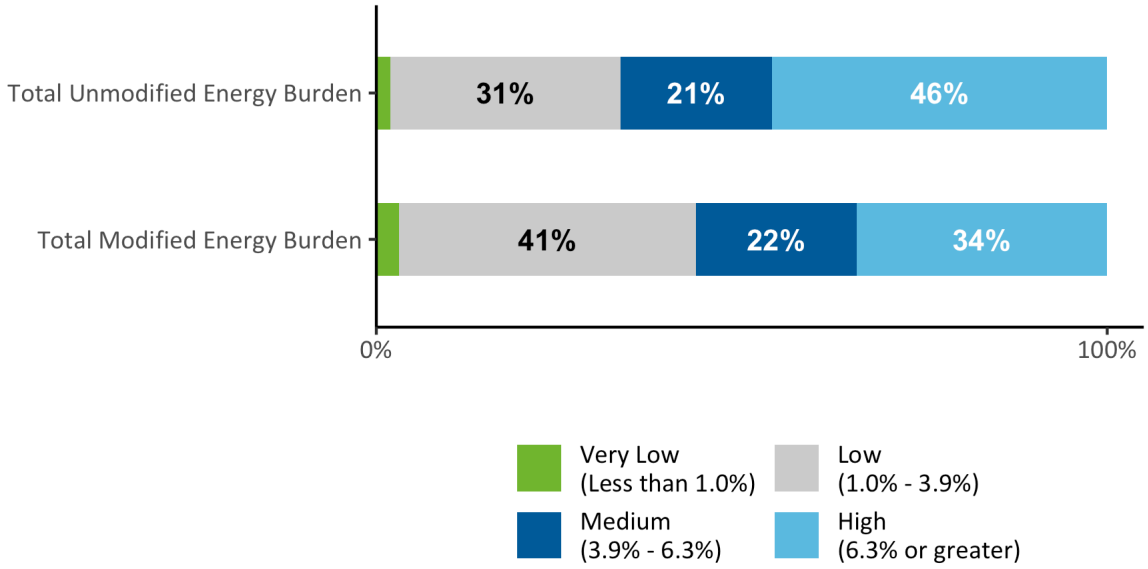
Source: 2019 Census ACS PUMS estimates of income-eligible households.

Next, we present the total modified energy burden that CARE-eligible households face, resulting from the inclusion of government benefits in annual income.[31] Figure 25 displays the total modified (income plus the value of public assistance) and unmodified (income only) energy burdens for income-eligible households in California. Overall, the modification of income levels leads to smaller energy burdens. This impact is relatively small across all eligible households across

[31] For households on food stamps, $1,092 is added to annual income per household member. For households on food stamps, an additional $564 is added for a mother who gave birth in the last 12 months, $564 per child under the age of 6, and $626 for each child between the ages of 6 and 17. $682 is added to annual income per person in a household identified as being on Medicaid. For households eligible for housing choice vouchers (households with less than 50 percent of the area median income in the county, see https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/Income-Limits-2021.pdf. 20 percent of the estimated housing subsidy is added to annual income per household.

the state of California. Overall, 44 percent of households in California face either a low or very low modified energy burden, while 34 percent of households face a high modified energy burden.

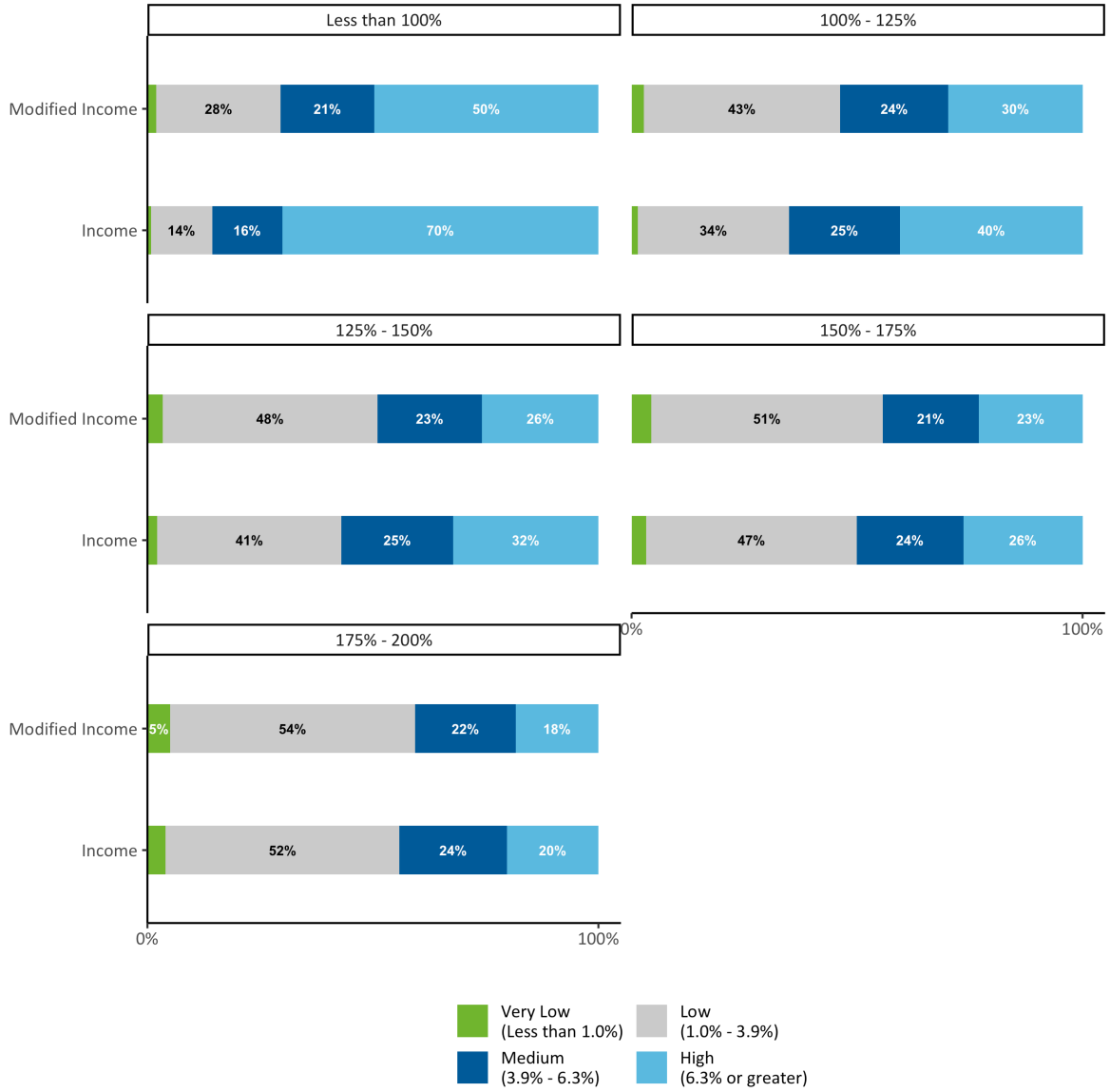
Figure 25: Comparison of Modified and Unmodified Energy Burden for CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Figure 26 displays the regular and modified income energy burdens by household income as a percentage of FPL. For households with incomes less than 150 percent of the FPL, modified energy burden is much lower than the unmodified energy burdens. For example, for households with incomes less than 100 percent of the FPL, 70 percent face high energy burdens when looking at unmodified incomes, but only 50 percent face high energy burdens when modified income is considered; this accounts for the value of the public assistance benefits that they receive. Overall, the energy burdens faced by households with incomes over 150 percent of the FPL do not differ significantly whether the income level is modified or unmodified.

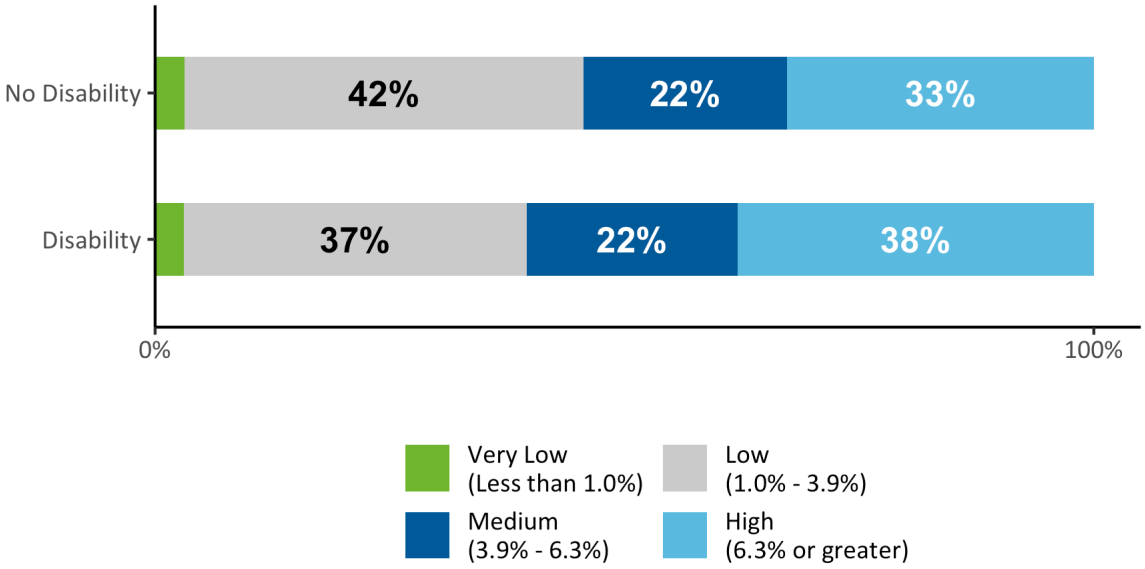
Figure 26: Comparison of Modified and Unmodified Energy Burden by FPL for CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Households identified as having someone with a disability faced a higher modified energy burden than households that did not have someone with a disability (Figure 27). Thirty-eight percent of households with someone that had a disability faced a high modified energy burden compared to only 33 percent of households that did not have someone with a disability.

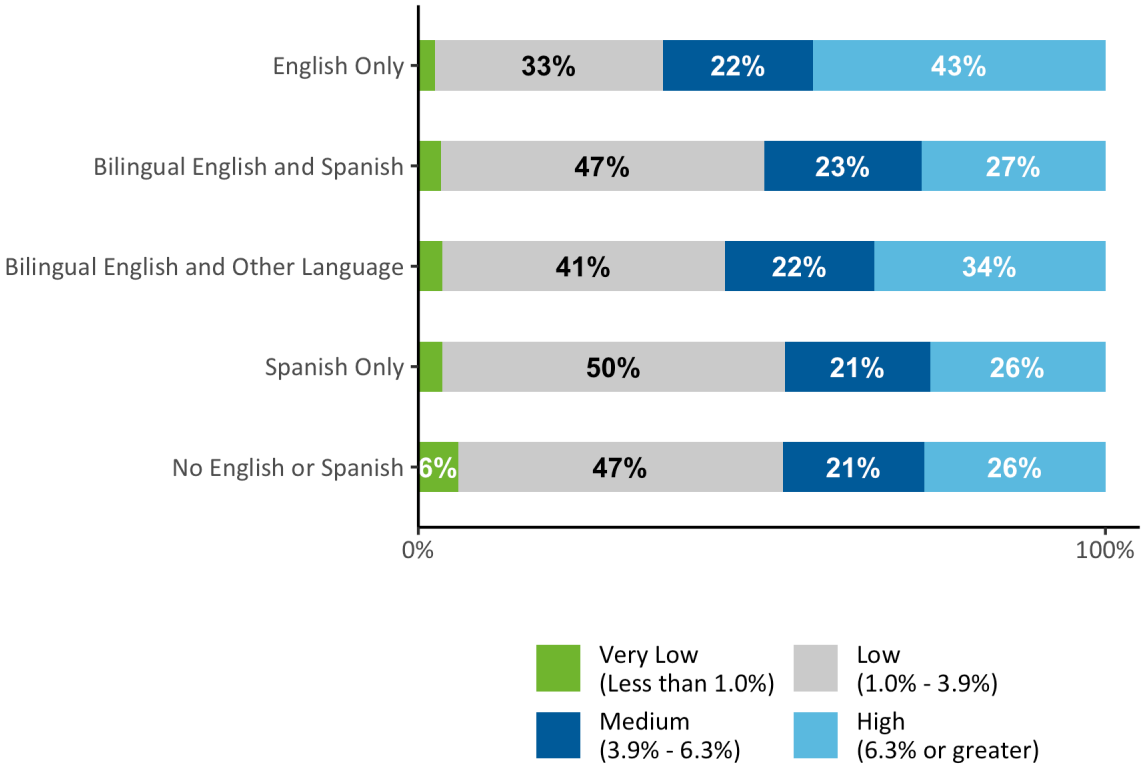
Figure 27: Total Modified Energy Burden by Disability in CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Households with residents that spoke only English or are bilingual in English and a language other than Spanish had the highest percent that face either a medium or high modified energy burden, at 65 percent and 56 percent, respectively (Figure 28). Households that spoke only Spanish or a language other than English or Spanish had the lowest percent facing a medium or high energy burden, both at 47 percent.

Figure 28: Total Modified Energy Burden by Language Spoken in CARE-Eligible Households

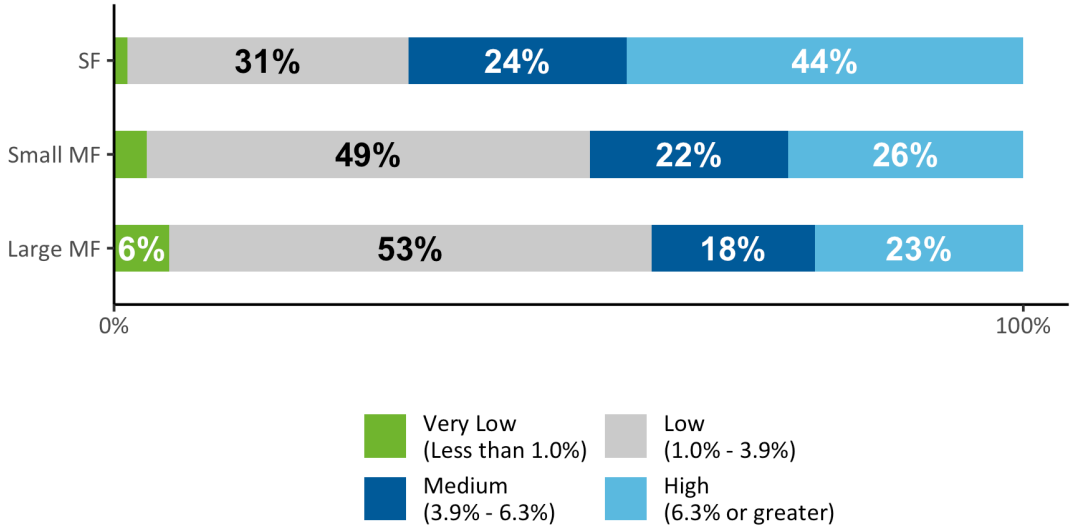


Source: 2019 Census ACS PUMS estimates of income-eligible households.

Figure 29 displays modified energy burden by single-family, small multifamily, and large multifamily households.[32] Overall, single-family households had the smallest percent facing a low or very low energy burden (32% single-family versus 52% small multifamily and 59% large multifamily) and the highest percent facing a medium and a large energy burden (24% and 44% single-family versus 22% and 26% small multifamily and 18% and 23% large multifamily, respectively). Large multifamily households faced lower energy burdens than small multifamily households, with a larger percent of households facing a very low or low energy burden (59% large multifamily versus 52% small multifamily).

[32] We defined small multifamily as buildings with 9 or fewer units, and large multifamily as apartment buildings with 10 or more units.

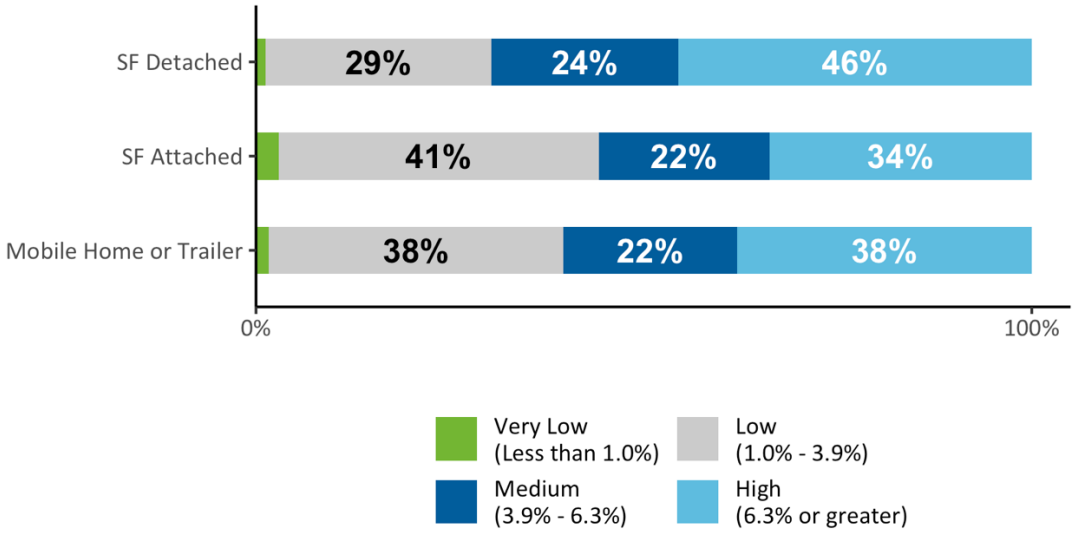
Figure 29: Total Modified Energy Burden by Home Type in CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Figure 30 displays modified energy burden for single-family households, split by whether they are detached or attached, alongside the energy burden of mobile homes and trailers. Single-family *attached* homes have overall lower energy burdens than single-family *detached* homes. Mobile homes and trailers resemble single-family attached households, with only slightly higher burdens.

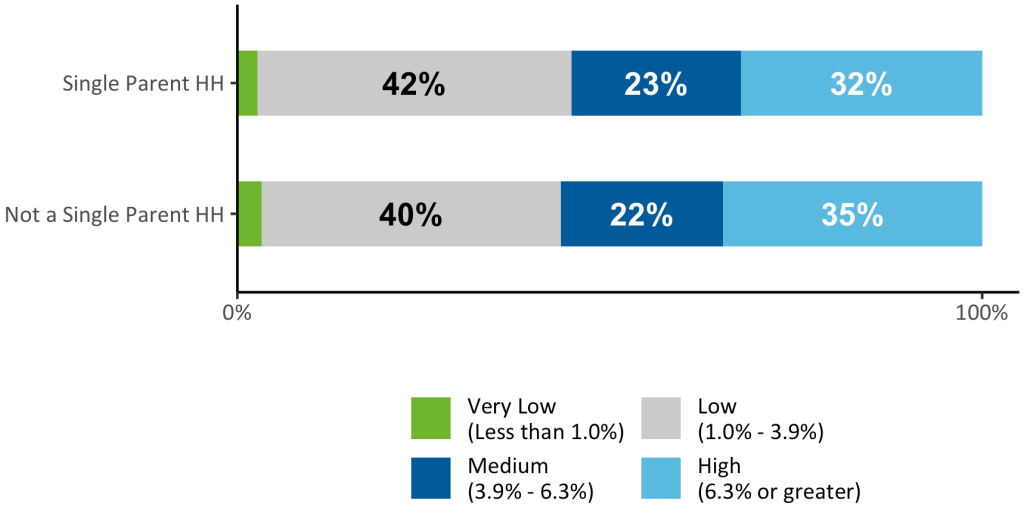
Figure 30: Total Modified Energy Burden for Single Family and Mobile CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Single-parent households in general had lower modified energy burdens than non-single-parent households (Figure 31). Fifty-five percent of single-parent households had a medium or high energy burden compared to 57 percent of households without a single parent. Forty-three percent of households without a single parent had a low or very low energy burden compared to 45 percent of single-parent households.

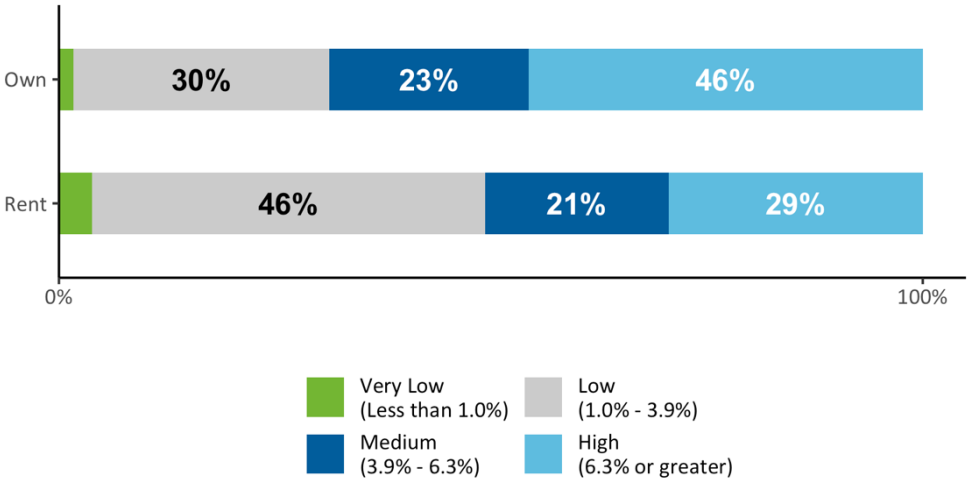
Figure 31: Total Modified Energy Burden by Single Parents in CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Renters in general have consistently lower modified energy burdens than owners (Figure 32). Fifty percent of renters had a medium or high energy burden compared to 69 percent of owners. Fifty percent of renters had a very low or low energy burden compared to 31 percent of owners.

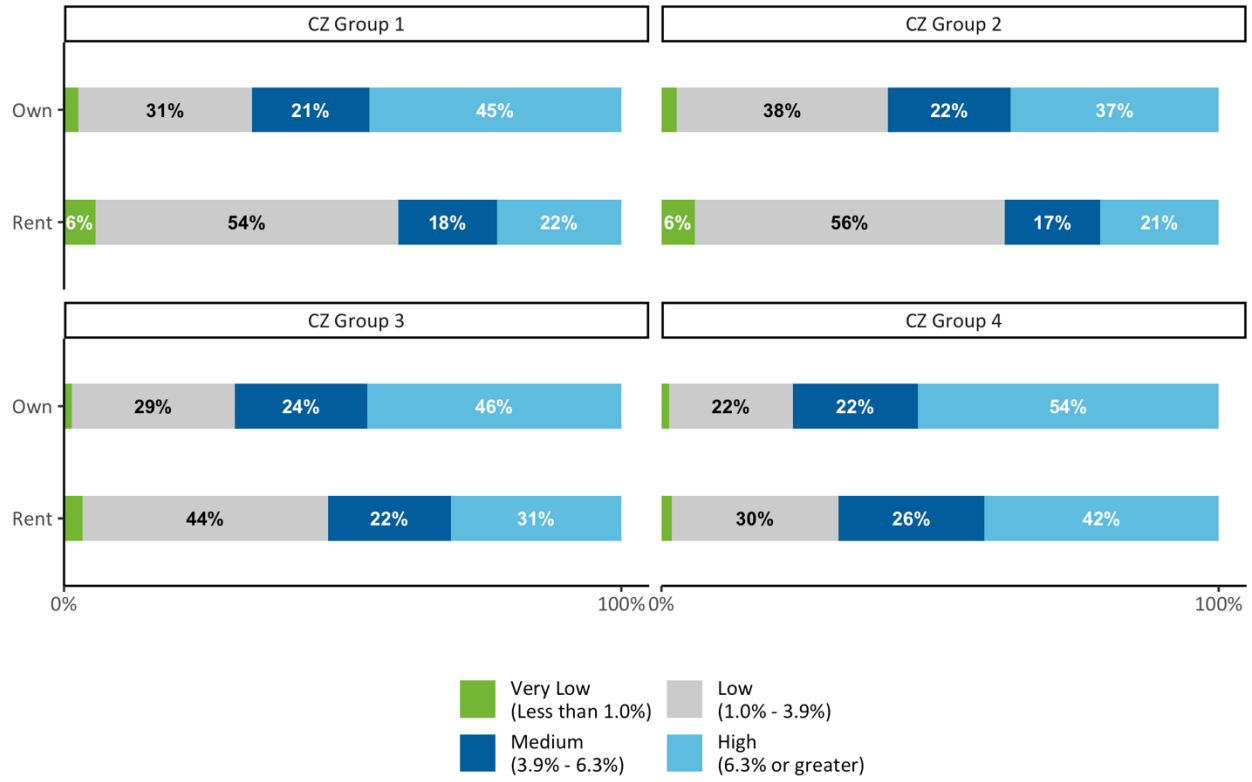
Figure 32: Total Modified Energy Burden by Owner and Renters in CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

Figure 33 displays modified energy burdens for owners and renters also split by climate zone group. Within each climate zone group, renters have lower modified energy burdens than owners. This disparity is more pronounced in climate zone groups 1, 2, and 3. In climate zone group 1, 66 percent of owners face a medium or high energy burden compared to 40 percent of renters

Figure 33: Comparison of Owner and Renter Modified Energy Burdens by Climate Zone Group in CARE-Eligible Households



Source: 2019 Census ACS PUMS estimates of income-eligible households.

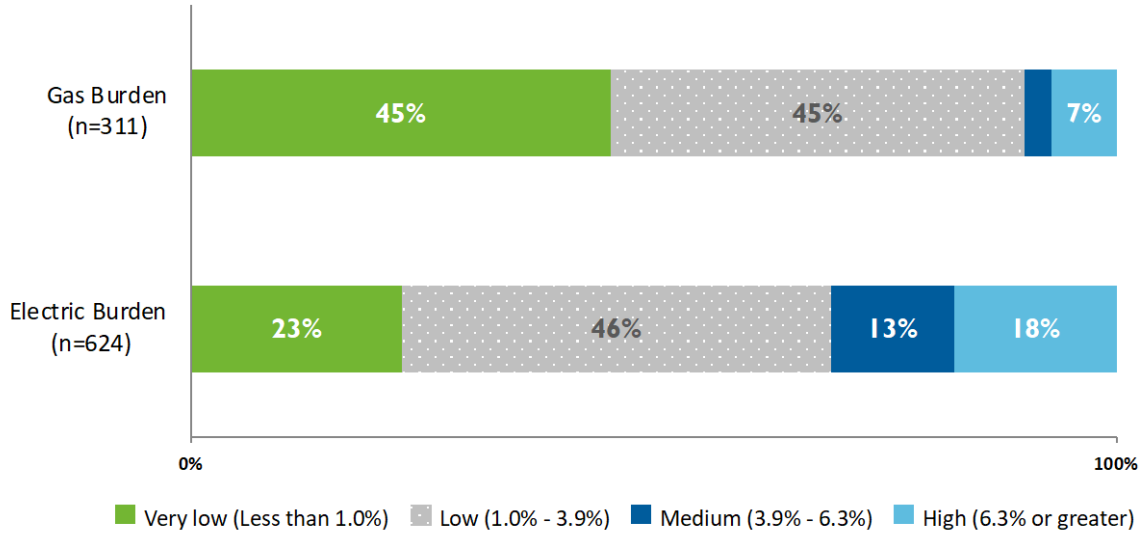
CARE Renters – Survey

We next look at the energy burdens faced by CARE-participating renters, the survey respondents. Survey respondents were recruited from the list of CARE participants provided in the IOU contact data summarized in the previous section. The results presented in this section are weighted to represent the population of CARE-eligible renters in California.

Annual energy bill costs were merged from the IOU data for all respondents. Household income was self-reported during the survey.[33] For respondents who declined to provide income in the survey, we imputed incomes based on the CARE-qualifying threshold for the number of people in the household (occupancy); this may underestimate the true energy burden for these households.

Figure 34 shows that electric energy burdens are generally higher than gas energy burdens, with 90 percent of CARE renters reporting low gas energy burdens compared to 69 percent of the customers reporting low electric energy burdens. Since not all customers receive both electric and gas service from the same IOU, we did not have an option to estimate the total bill cost (electric and gas) for all customers; hence, electric and gas energy burdens are reported separately. Please refer to the Census analysis in Figure 24 for a comparison of the total energy burden and splits by fuel service.

Figure 34: CARE Renter Unmodified Gas and Electric Energy Burdens



Source: 2021-2022 phone and web survey of CARE renters.

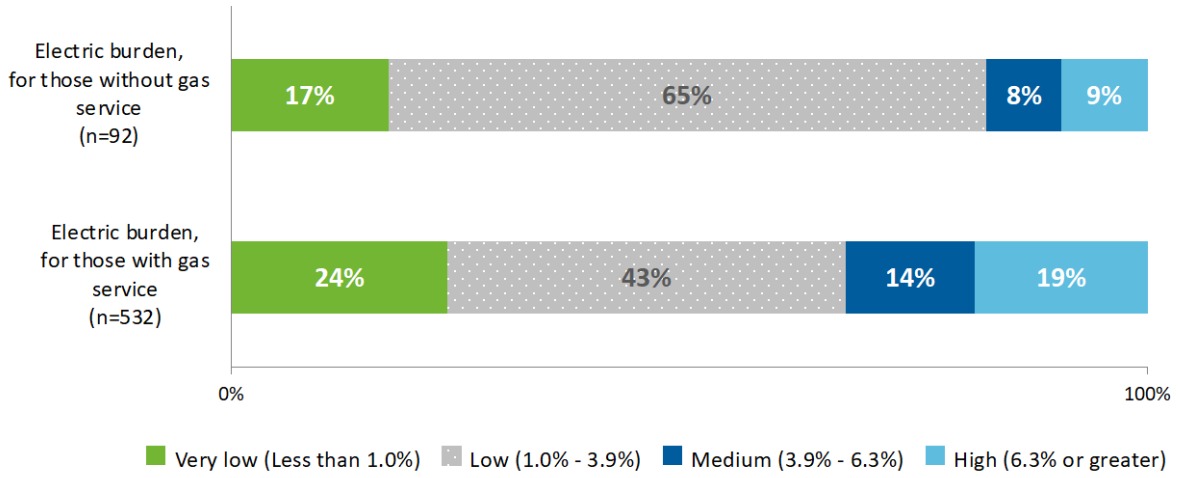
Note: Due to limitations in identifying electric and gas accounts for a single customer served by two separate utilities, survey respondents who are served by multiple IOUs will only have gas or electric data, but not both. Therefore, we are limited to reporting on electric and gas burden separately, relying on the Census analysis of all CARE-eligible households for an estimate of the total energy burden across both fuels.

Figure 35 splits the electric energy burden into two groups: renters with gas service and renters without. Within the sample of respondents from an electric utility, 15 percent of these CARE

[33] While we have verified income for some of these respondents in the CARE and/or ESA program data, we chose to rely on the self-reported income for the energy burden calculations as the 2021-2022 survey would be more likely to align with their income during the year reflected in the utility bills.

renters reported also having gas service. Renters with both gas and electric service had an overall higher electric energy burden than renters with only electric service, although on average, renters without gas service have both lower incomes and higher bills.

Figure 35: CARE Renter Electric Energy Burden by Gas Service

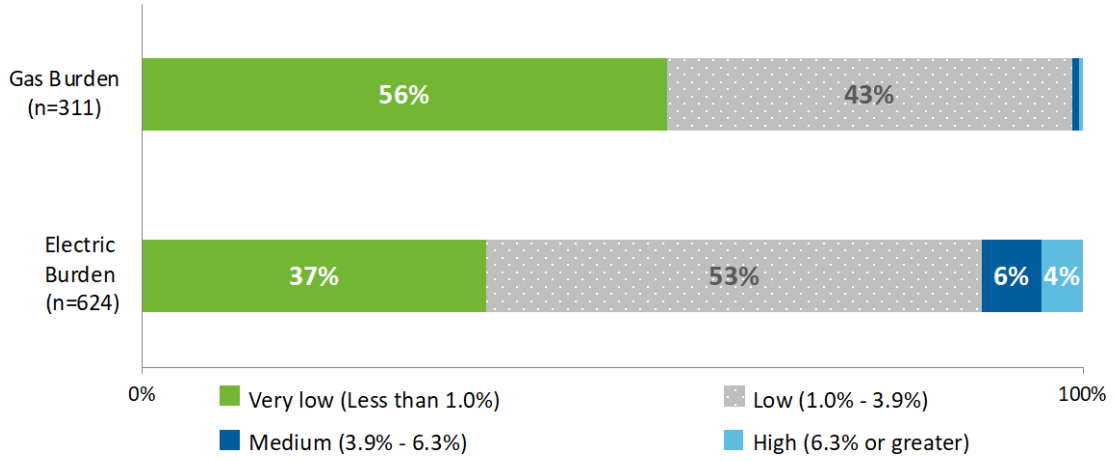


Source: 2021-2022 phone and web survey of CARE renters

Figure 36 shows the modified energy burdens for eligible renters, which considers the value of public assistance benefits in addition to conventional sources of household income.[34] More than half of respondents' modified gas burdens were very low, compared to 45 percent of the unmodified gas burdens. Similarly, 37 percent of modified electric burdens were very low, compared to 23 percent of unmodified electric burdens.

[34] For households on food stamps, $1,092 is added to annual income per household member, with an additional $626 added to annual income for each child between the ages of 6 and 17. For each person in the household that was covered by Medicaid, we added $682 to their annual income. For households with a voucher or living in public housing, we added the value of the housing subsidy to annual income based on the number of bedrooms required, household income, Fair Market Rent (FMR) for the county, and an area cost adjustment.

Figure 36: CARE Renter Modified Energy Burdens



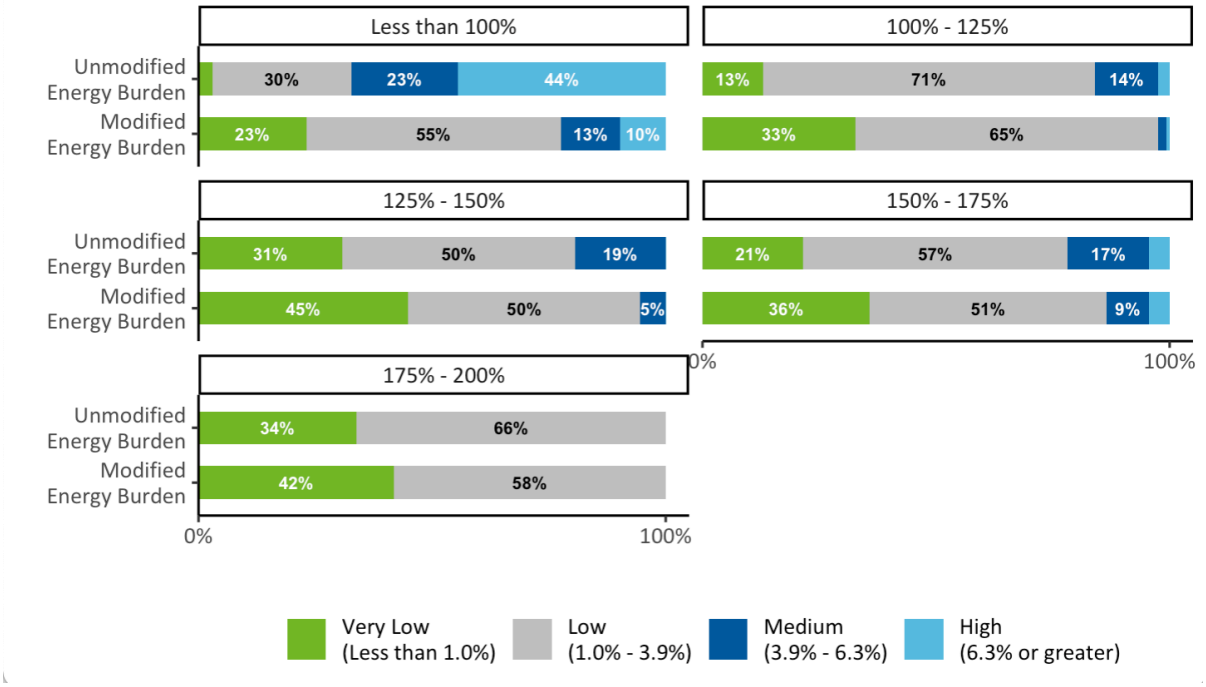
Source: 2021-2022 phone and web survey of CARE renters.

Next, we present the total *modified* energy burden that CARE-eligible households face, resulting from the inclusion of public assistance benefits in annual income.[35] Figure 37 displays the total modified (income plus the value of public assistance) and unmodified (income only) electric energy burdens for income-eligible households in California, faceted by household income as a percentage of FPL.

As expected, the modification of income with public assistance benefits reduces energy burden. For households with incomes less than 125 percent of the FPL, modified energy burdens are much lower than the unmodified energy burdens. Among households below the poverty line (income <100% FPL), 70 percent face high energy burdens when looking at household income, but this drops to 50 percent when the value of the public assistance benefits in modified income is accounted for. The energy burdens faced by households with incomes over 150 percent of the FPL do not differ significantly whether the income level is modified or unmodified. The same is true for gas energy burden (Figure 38). This is not surprising, as most public assistance benefits are tied to household income, with smaller subsidies available and lower uptake within this group.

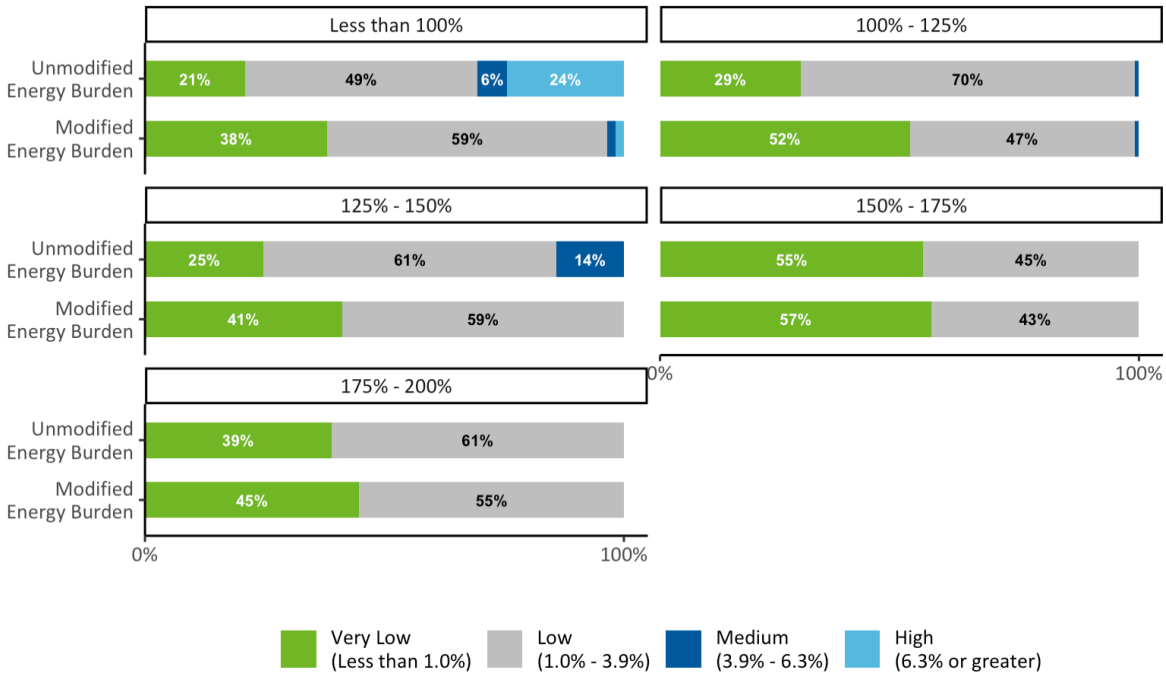
[35] For households on food stamps, $1,092 is added to annual income per household member. For households on food stamps, an additional $564 is added for a mother who gave birth in the last 12 months, $564 per child under the age of 6, and $626 for each child between the ages of 6 and 17. Another $682 is added to annual income per person in a household identified as being on Medicaid. For households eligible for housing choice vouchers (households with less than 50 percent of the area median income in the county, see https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/Income-Limits-2021.pdf, 20 percent of the estimated housing subsidy is added to annual income per household.

Figure 37: Modified and Unmodified Electric Energy Burden by FPL among CARE Renters



Source: 2021-2022 phone and web survey of CARE renters

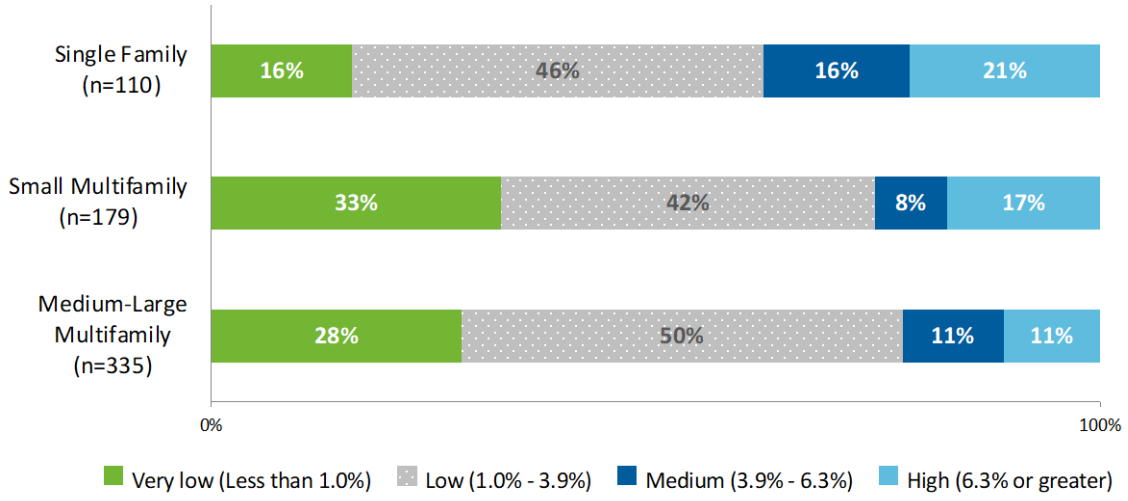
Figure 38: Modified and Unmodified Gas Energy Burden by FPL among CARE Renters



Source: 2021-2022 phone and web survey of CARE renters

Overall, single-family households face higher electric burden than multifamily households.

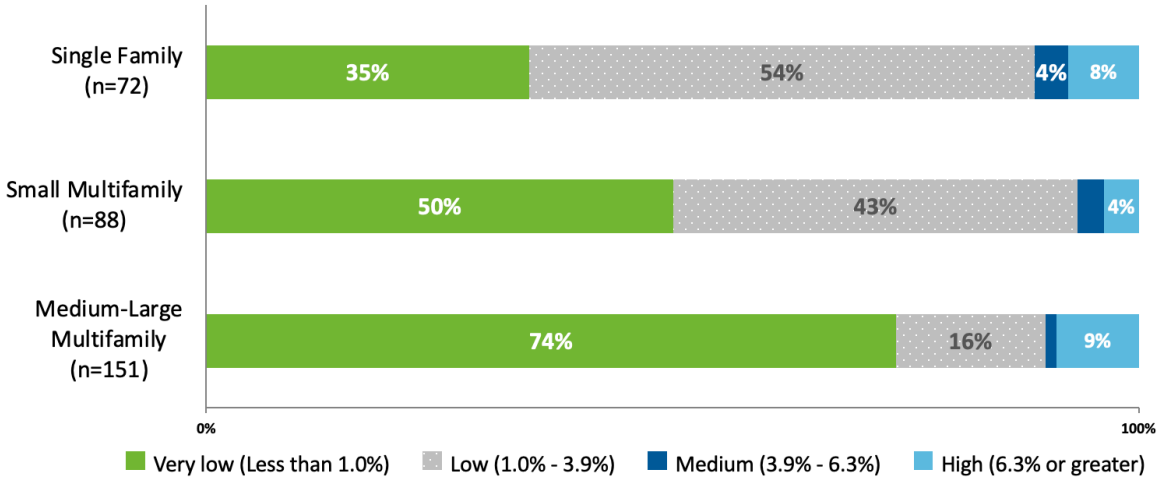
Figure 39: CARE Renter Electric Energy Burdens by Home Type



Source: 2021-2022 phone and web survey of CARE renters

Households in general faced smaller gas energy burdens than electric, with small multifamily households having the highest percent with either very low or low gas energy burdens at 93 percent (Figure 40). Similar to electric energy burdens, single-family households have the highest percent with medium or high energy burdens at 12 percent, although this difference is not as striking since 10 and 7 percent of medium-large and small multifamily households, respectively, also faced medium or high energy burdens.

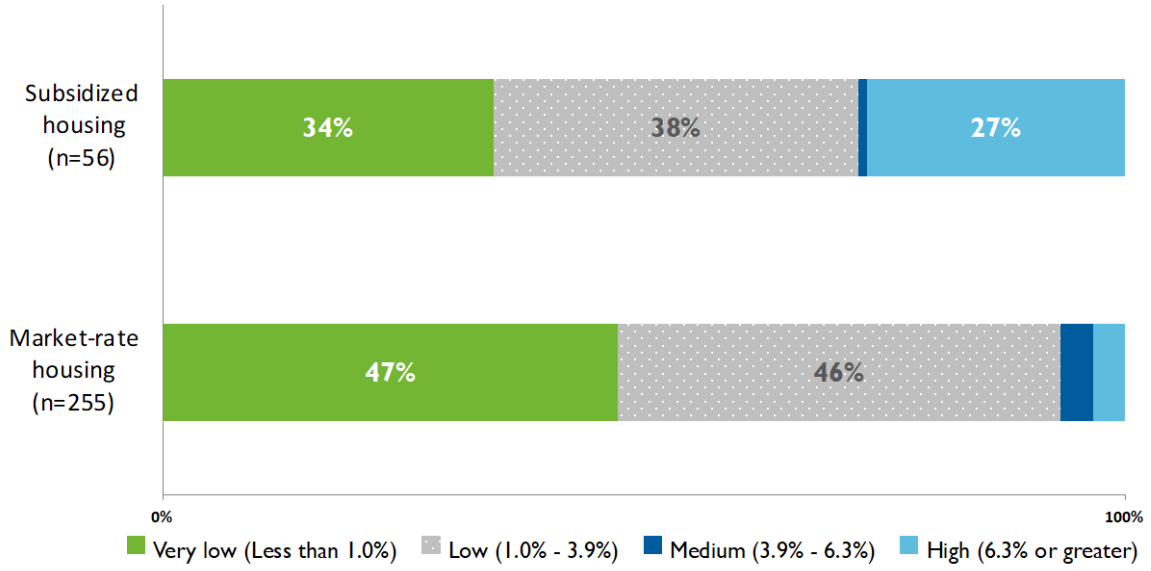
Figure 40: CARE Renter Gas Energy Burdens by Home Type



Source: 2021-2022 phone and web survey of CARE renters

Figure 41 displays the gas energy burdens of households by whether they reported living in subsidized or market-rate housing. Households in market-rate housing faced lower energy burdens, with 93 percent of households having very low or low energy burdens compared to 72 percent of subsidized housing households. Renters in market-rate housing on average have higher gas bills, but also have greater incomes than renters in subsidized housing.

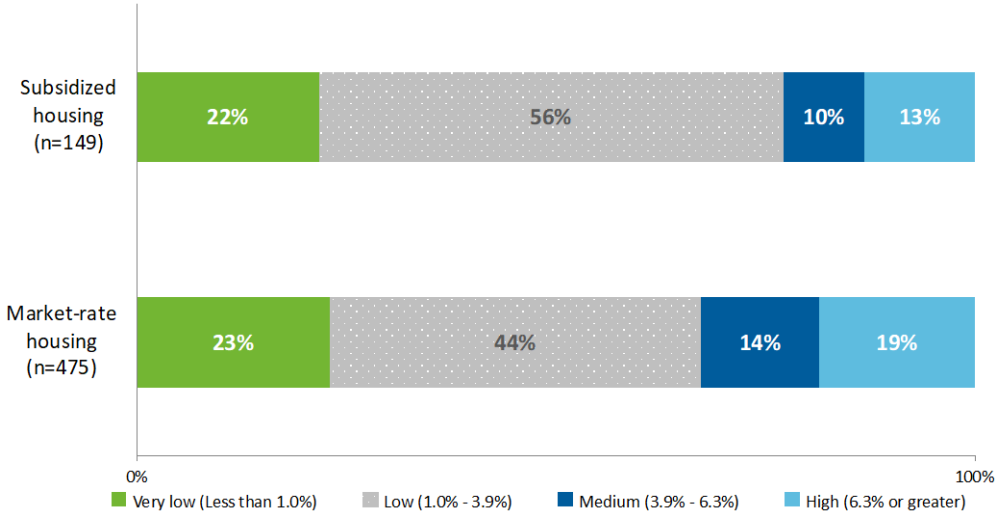
Figure 41: CARE Renter Gas Energy Burdens by Subsidized/Market-Rate Housing



Source: 2021-2022 phone and web survey of CARE renters

Conversely, electric energy burdens for market-rate housing are lower than for subsidized housing (Figure 42). Overall, 67 percent of market-rate households had very low or low energy burdens while 78 percent of subsidized housing households had very low or low energy burdens. This difference is statistically significant.

Figure 42: CARE Renter Electric Energy Burdens by Subsidized/Market-Rate Housing



Source: 2021-2022 phone and web survey of CARE renters

1.5 Overall Survey Findings

Renter Household Characteristics

Figure 43: Length of Time at Current Residence by Home Type

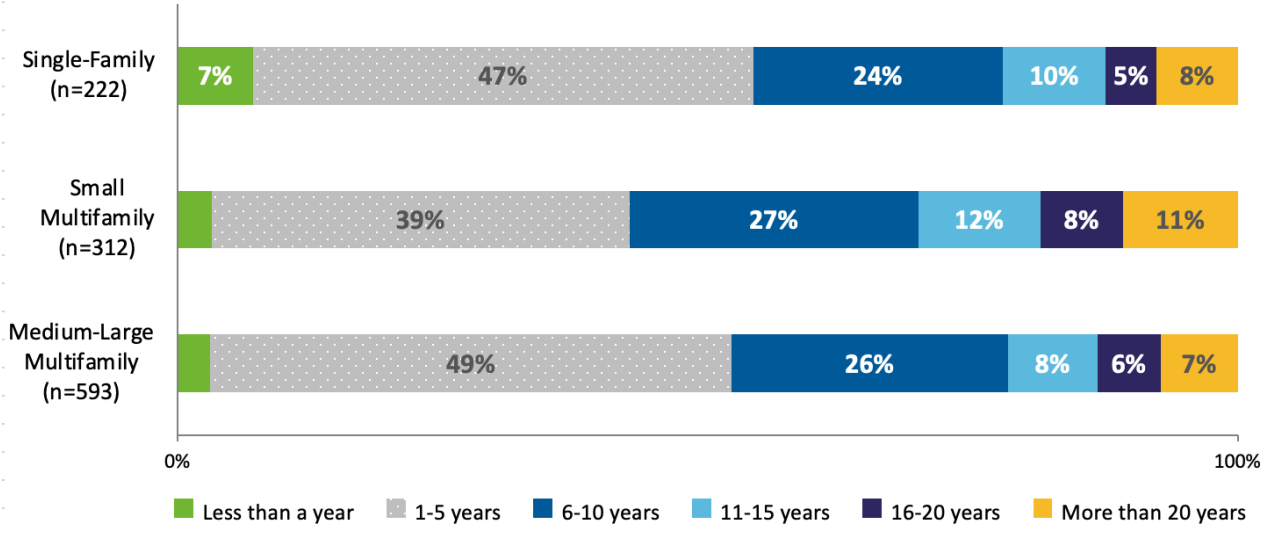
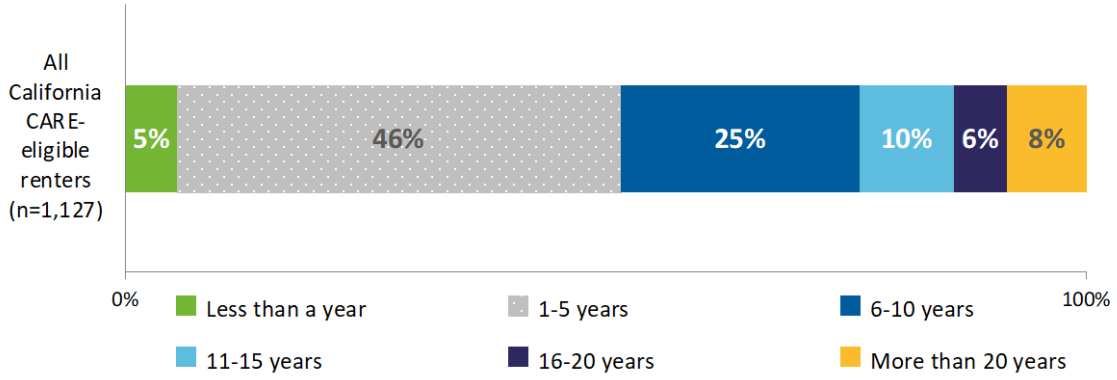


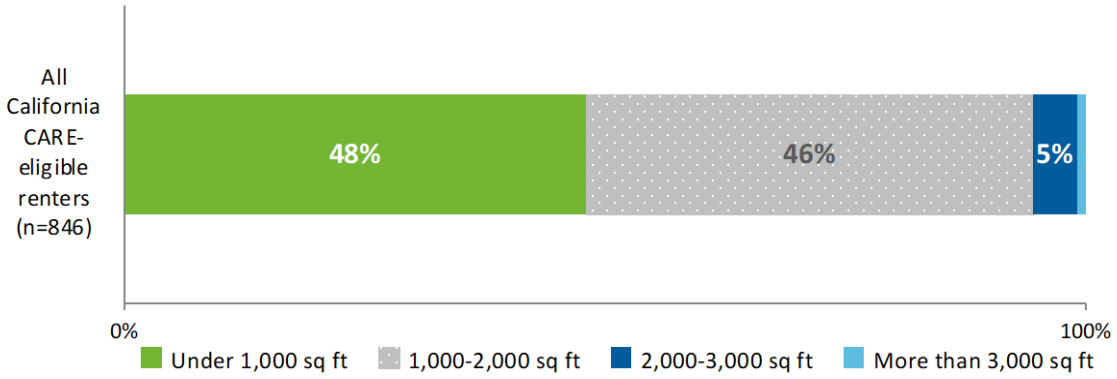
Figure 44 shows that just over half of renters have lived at their current residence for under five years (51%).

Figure 44: Length of Time at Residence (n=1,127)



The majority of renters' homes are under 3,000 square feet (94%), with the largest portion among those under 1,000 square feet (48%).

Figure 45: Size of Home (n=846)



The greatest portion of renters' homes were built between 1960 and 1980 (42%). Thirteen percent were built after 2000.

Figure 46: Age of Home (n=809)

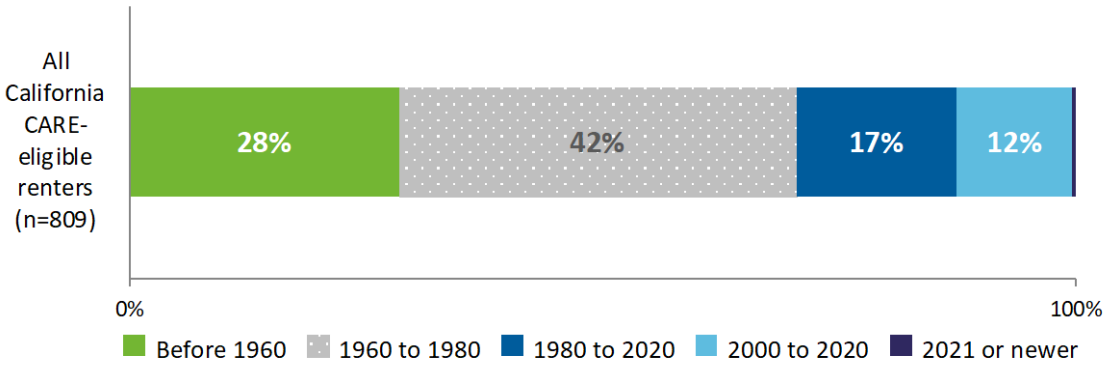
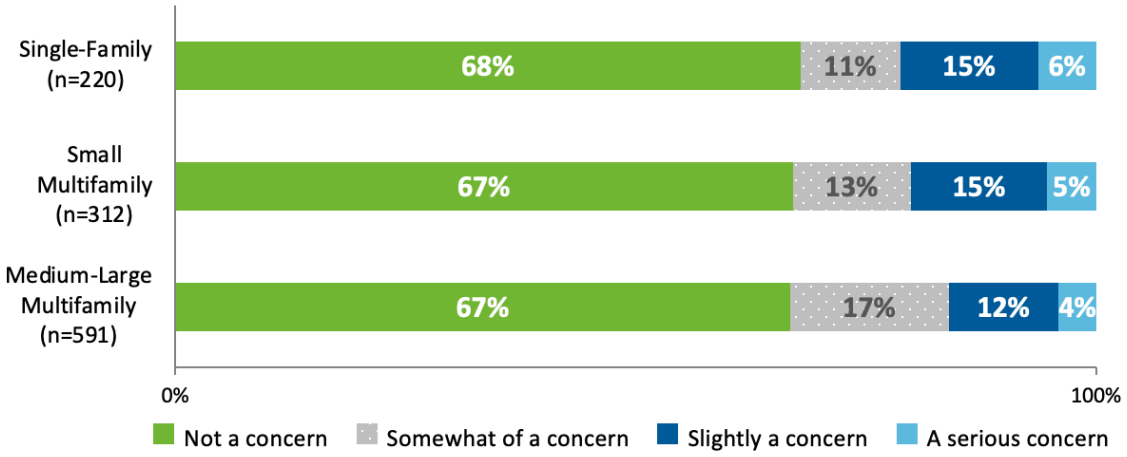


Figure 47: Concern for Indoor Air Quality by Home Type



Heating and Cooling

Table 13 provides definitions of the four climate groups and typical outdoor air temperatures for context. The climate groups were designed to capture a mix of weather conditions (North Coast, South Coast, Central, and Mountain/East) and IOU service territories.

Table 13: Climate Group Definitions

Climate Group	CEC Building Climate Zones	HDD (base 65)	CDD (base 80)	Record High (°F)	Record Low (°F)
1	1-3	2,563 - 4,554	0 - 894	113	14
2	5-7	742 - 2,954	173 - 1,201	111	20
3	4, 8-13	1,154 - 4,287	220 - 2,246	119	19
4	14-16	1,080 - 5,991	235 - 6,565	122	-7

Source: Pacific Energy Center[36]

[36] *The Pacific Energy Center's Guide to: California Climate Zones and Bioclimatic Design*, October 2006. https://www.pge.com/includes/docs/pdfs/about/edusafety/training/pec/toolbox/arch/climate/california_climate_zones_01-16.pdf

Figure 48 shows the percentage of renters by climate group that have some sort of cooling.[37] Less than half of eligible renters in climate groups 1 and 2 have space cooling, compared to climate groups 3 and 4, where the majority of renters have cooling.

Figure 48: Renters that Have Cooling by Climate Group

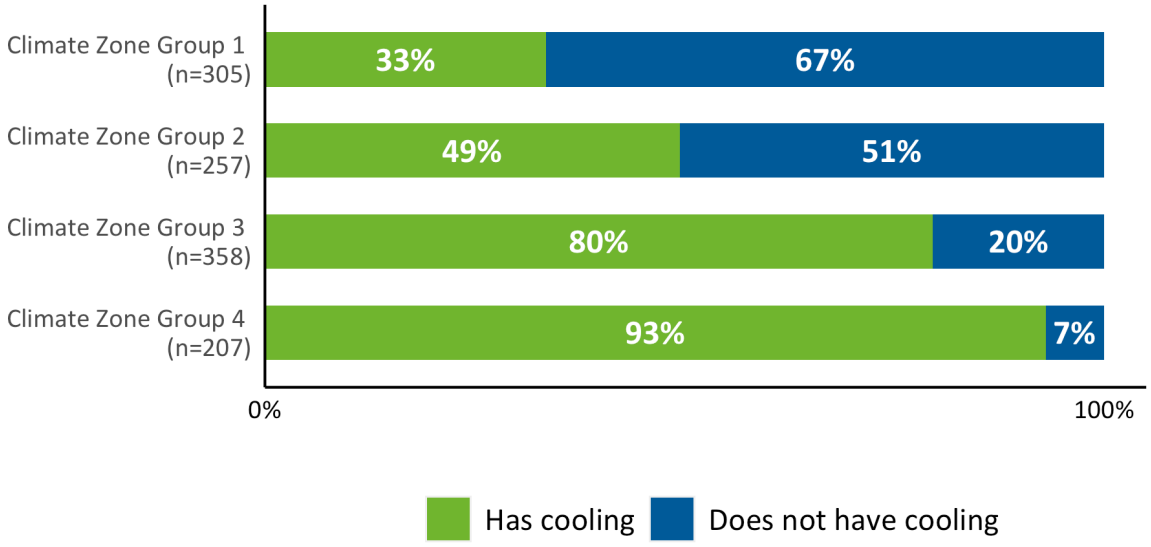
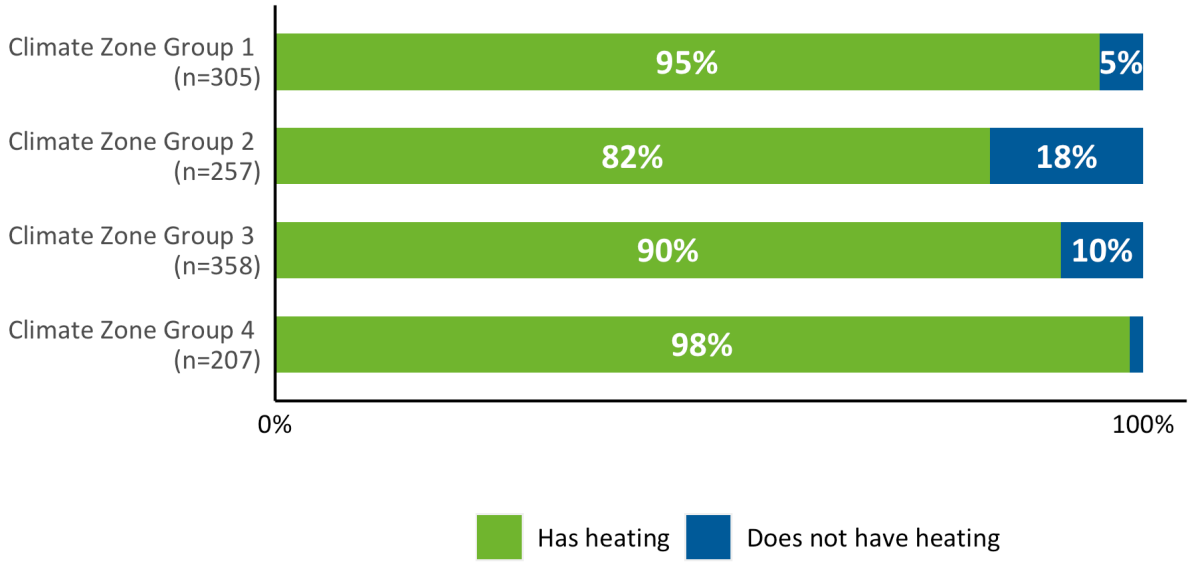


Figure 49 shows the percentage of respondents that have some sort of heating by climate group. The majority of homes in all four climate groups have some form of space heating. The most common forms are gas furnaces and portable electric heaters (39% and 31% overall/across all climate groups). Climate group 2 has the most respondents without heating, which makes sense given that it covers the southwest coast of California, where temperatures are mild.

[37] Households with cooling have at least one of the following appliances: central AC/heat pump, window AC, swamp cooler, portable AC, or AC unit built in a wall. Those without cooling have only ceiling fans or portable fans, or use windows, and reported having no cooling.

Figure 49: Renters that Have Heating by Climate Group



Health Comfort and Safety

Forty percent of respondents overall reported that a member of their household requires additional heating, cooling, or ventilation for health reasons (Figure 50). These needs were much less prominent in climate group 4, where only 37 percent (rather than 60% overall) of respondents noted that they did not think they needed any of the mentioned heating cooling or ventilation improvements (Figure 51).

Figure 50: Self-Reported Need for Additional Heating, Cooling, or Ventilation for Health Reasons (n=1,127)

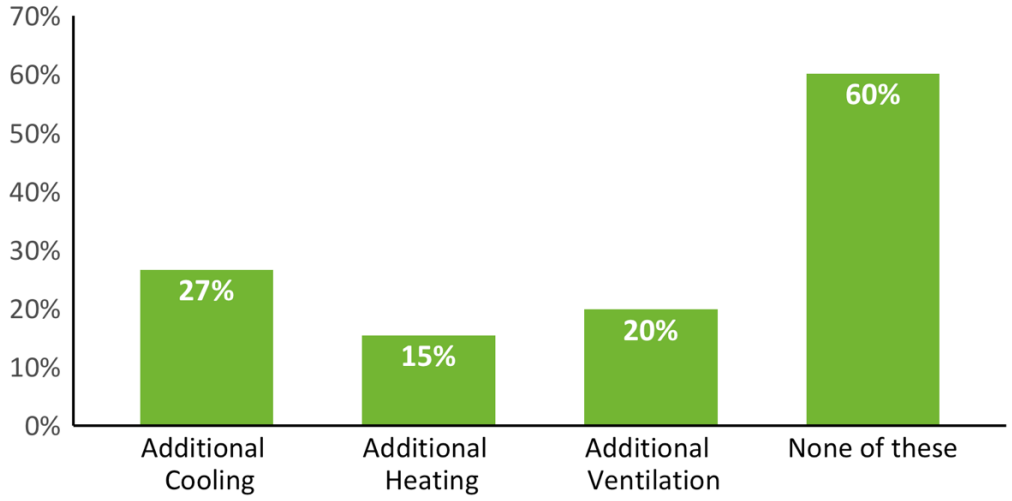
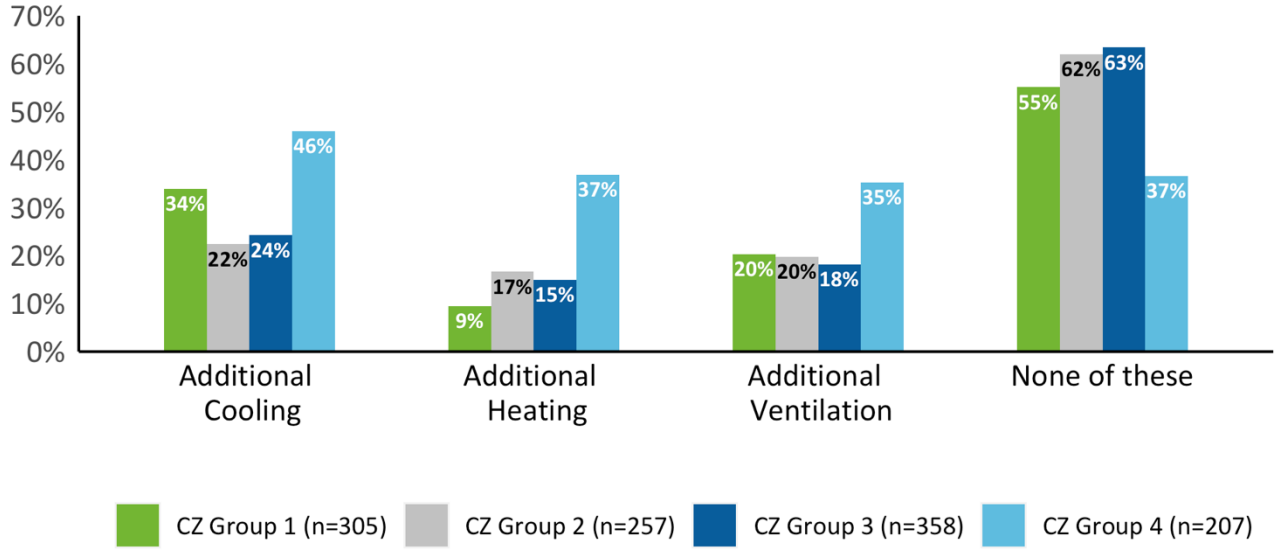


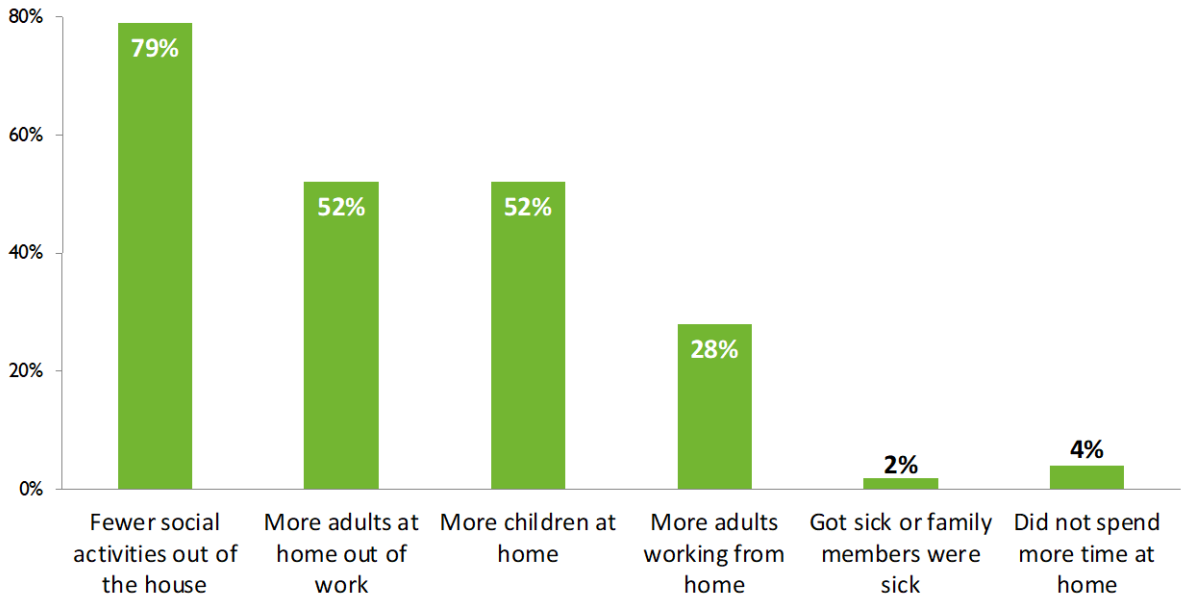
Figure 51: Self-Reported Need for Additional Heating, Cooling, or Ventilation for Health Reasons by Climate Group (n=1,127)



COVID-19 Pandemic

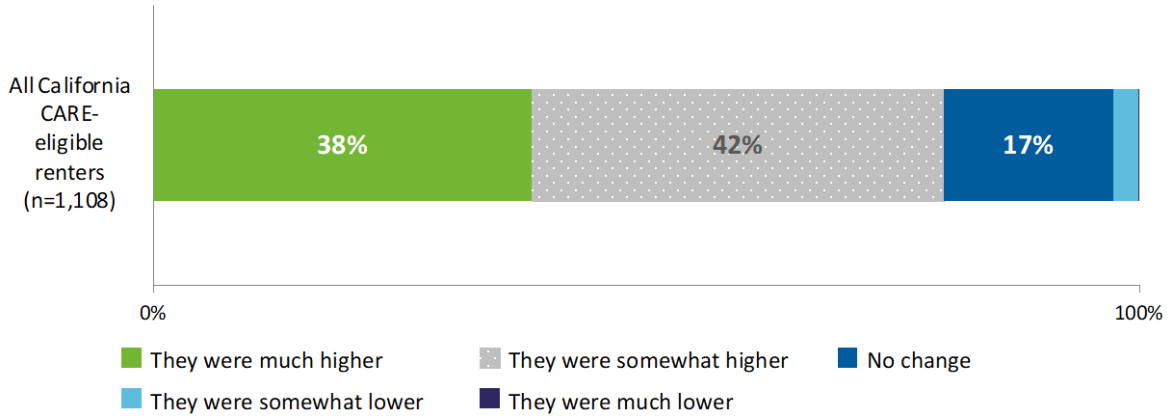
We asked survey respondents how the COVID-19 pandemic may have impacted their energy usage and the amount of time spent at home. Not surprisingly, the majority of renters (96%) reported spending more time at home due to the COVID-19 pandemic, which may have impacted their energy usage (Figure 52).

Figure 52: Impacts of COVID-19 on Households (n=1,127)



The majority of renters (80%) reported that their energy bills due to the COVID-19 pandemic were much higher or somewhat higher than they were before the pandemic (Figure 53). Three percent of households reported that their energy bills were lower due to the COVID-19 pandemic.

Figure 53: Impact of COVID-19 on Energy Bills (n=1,108)



Landlord Relationship

Figure 54: Frequency of Interaction with Landlord (n=645)

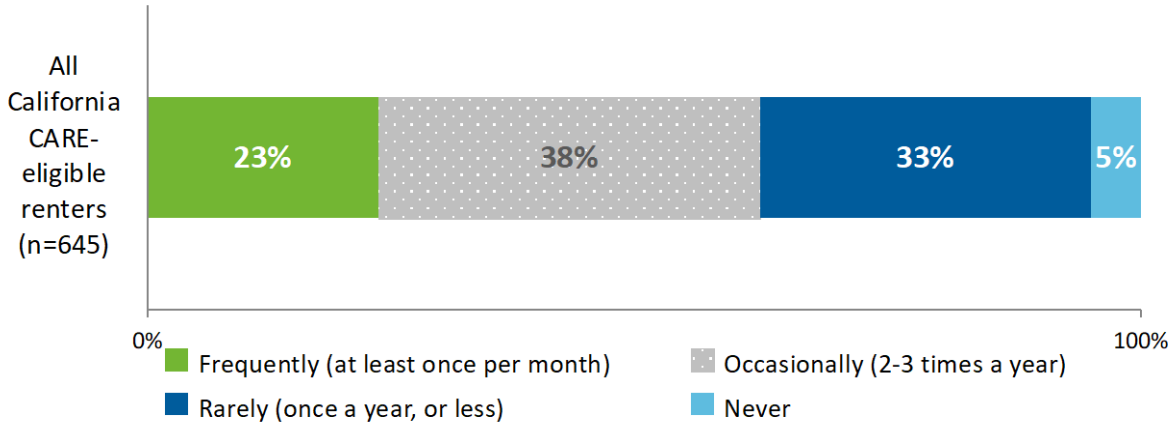


Figure 55: Likelihood of Renter to Discuss Replacing a Poorly Functioning Appliance with Their Landlord (n=1,117)

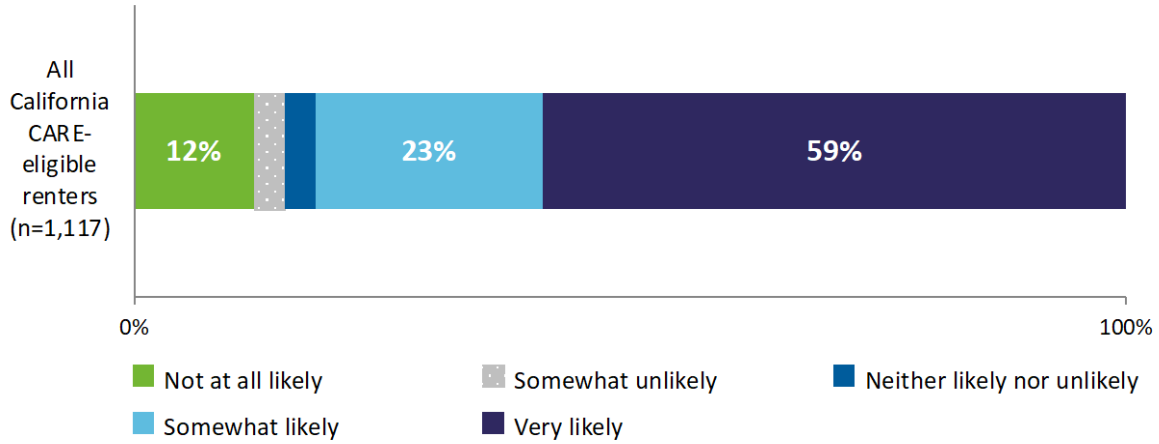
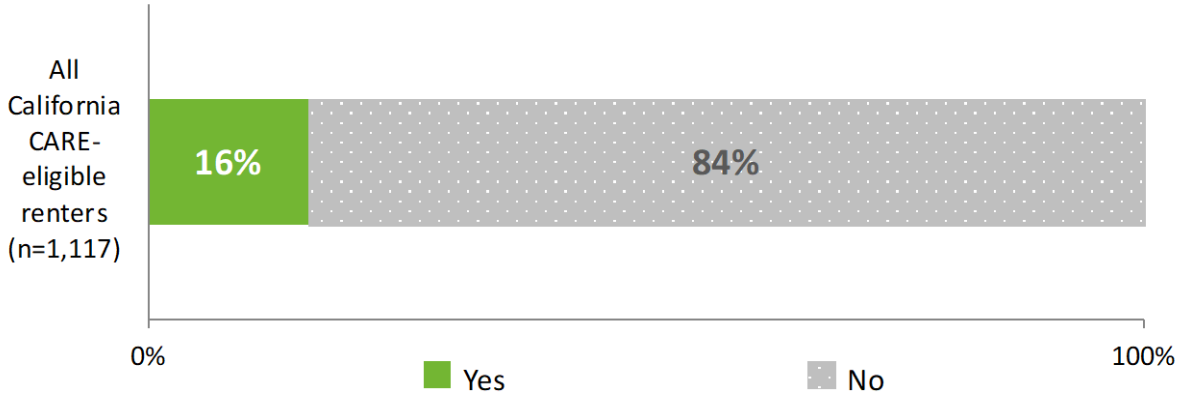


Figure 56: Tenant Reporting of Recent Issues Not Brought Up with Landlord (n=1,117)



Among the 16% of tenants who have not raised issues with their landlords, plumbing (32%), broken appliances (32%), and general repairs (22%) were the main concerns not brought to the attention of their landlord.

The two main reasons cited are they do not want to annoy their landlord (41%) and that they have concerns about rent being raised (40%).

Table 14: Reasons Why Recent Issues Are Not Brought Up (n=165)

Reason	% of Population
Don't want to annoy the landlord	41%
Concerns about rent being raised	40%
No use – landlord won't do anything	28%
Landlord is not onsite or nearby	19%
Don't like talking to the landlord	18%
Don't want landlord/maintenance in their home	12%
Problem is not something the landlord can do anything about	8%

1.6 Survey Findings by Subgroup

Each subsection that follows covers each renter group crossed by the six categories. Only barriers to participation in ESA and findings with differences that are statistically significant are included in this section.

Summarized Findings by Housing Type

1.6.1 Renters in Small Multifamily Properties

Renters in small multifamily properties are:

- More likely to reside in a building built before 1960 than renters in single-family and medium-large buildings (42% small multifamily, 30% single-family, 16% medium-large multifamily);
- Less likely to have cooling than large multifamily and single-family renters (52% small multifamily, 65% single-family, 66% large multifamily);
- More likely than large multifamily renters to need additional ventilation due to health reasons (27% small multifamily, 16% large multifamily);
- More likely than single-family renters to cite a fear of a rent increase if upgrades are made as a result of participating in ESA as a barrier (50% small multifamily, 33% single family); and
- More likely than single-family renters to report that there is little they can do to save energy beyond what they are already doing as a barrier to participating in ESA (70% small multifamily, 54% single-family).

1.6.2 Renters in Medium and Large Multifamily Properties

Renters in medium-large multifamily properties are:

- More likely to reside in a home built in 2000 or after than renters in single-family and small-multifamily properties (21% medium-large multifamily, 4% small multifamily, 11% single-family);
- More likely to have cooling than small multifamily renters (52% small multifamily, 65% single-family, 66% medium-large multifamily);
- Less likely than small multifamily renters to need additional ventilation due to health reasons (27% small multifamily, 16% medium-large multifamily);
- More likely to report that paying their energy bills is not a challenge at all compared to single-family and small multi-family renters (30% medium-large multifamily, 23 small multifamily, 25 single-family); and
- More likely to report being “very likely” to bring up a poorly functioning appliance to their landlord than single-family and small multifamily renters (71% medium-large multifamily, 54% single-family, 58% small multifamily).

1.6.3 Renters in Single-Family Homes

Renters in single-family homes are:

- More likely to reside in climate group 3 than medium-large multifamily renters (53% single-family, 38% medium-large multifamily); and
- More likely to report that their energy bills due to COVID-19 were much higher than multifamily renters (43% single-family, 36% small multifamily, 31% medium-large multifamily).

Households with Disabled Renter

Barriers

Table 15 shows that for those unwilling to participate in ESA,[38] households with a disabled renter most often reported that the reasons (selected from a list) why they were not interested in the program were because they already have efficient appliances (66%), there is little they think they can do to save energy beyond what they are already doing (57%), and that it is too much trouble to get approval from their landlord (54%).

Table 15: Barriers to ESA Participation Reported by Households That Were Unwilling to Participate in ESA, with a Disabled Tenant

Barrier	% of Population of Households with Disabled Renters
We already have energy efficient appliances (n=123)	66%
There is little we can do to save energy beyond what we are already doing (n=124)	57%
It's too much trouble to get approval from the landlord (n=115)	54%
We don't want to provide the personal information required to participate (n=128)	51%
We are afraid our rent will go up if upgrades are made (n=125)	51%
We don't want strangers in our home (n=130)	47%
We are skeptical that it is really free (n=129)	44%
Our bills are low already (n=122)	36%

[38] If respondents reported their willingness to participate as a 1, 2, or 3 on a scale of 1 to 5 with 1 being not at all willing and 5 being extremely willing, or if they did not know what their willingness was, they were then asked about what barriers might exist that make them unwilling to participate.

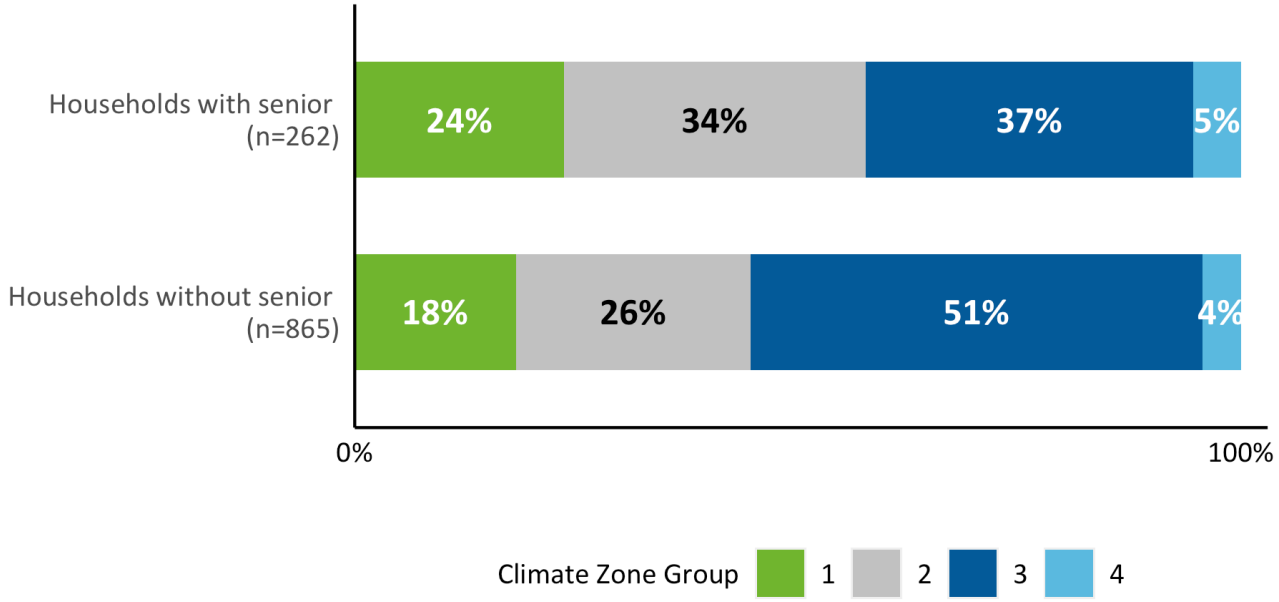
Barrier	% of Population of Households with Disabled Renters
The program doesn't appear to offer much that would help us save energy (n=108)	33%
Saving energy is not a priority in our household (n=130)	21%
We move often (n=131)	9%

Households with Elderly Resident(s)

Location

Eligible renter households with seniors are much less likely to be in climate group 3 (parts of Los Angeles and the Central Valley) compared to households without seniors. This difference is statistically significant (Figure 57).

Figure 57: Location of Households with Seniors by Climate Group



Heating and Cooling

Eligible renters with seniors are less likely to have cooling and are more likely to have heating compared to households without seniors (Figure 58, Figure 59). These differences are statistically significant.

Figure 58: Prevalence of Cooling in Eligible Renter Households with Seniors vs. Households without Seniors

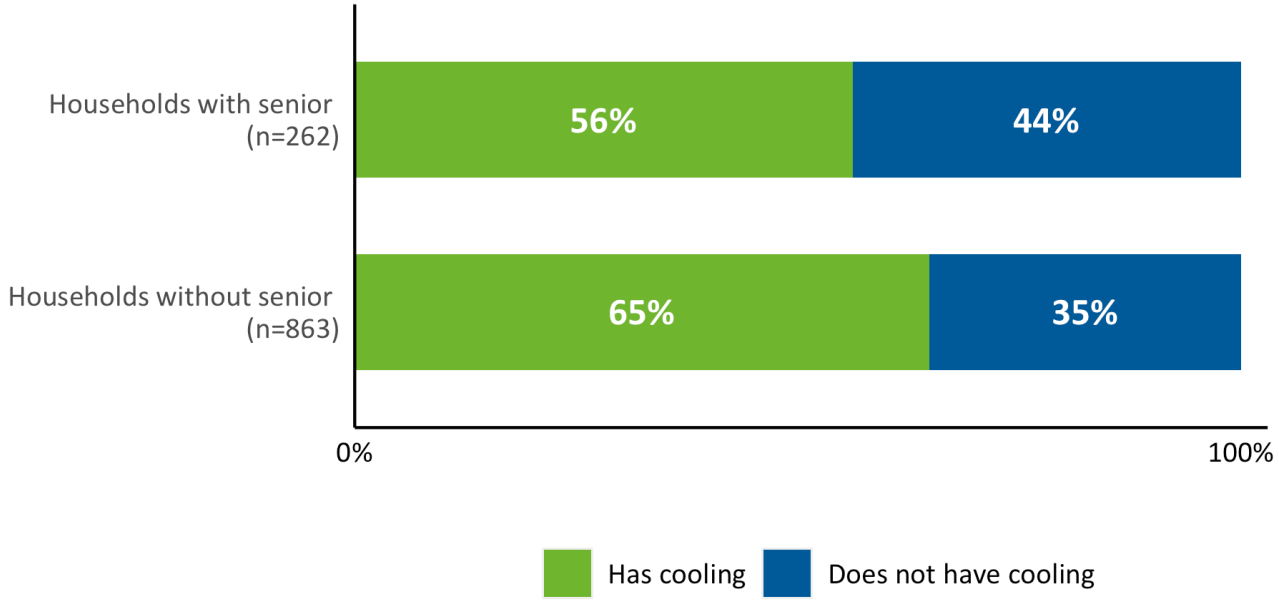
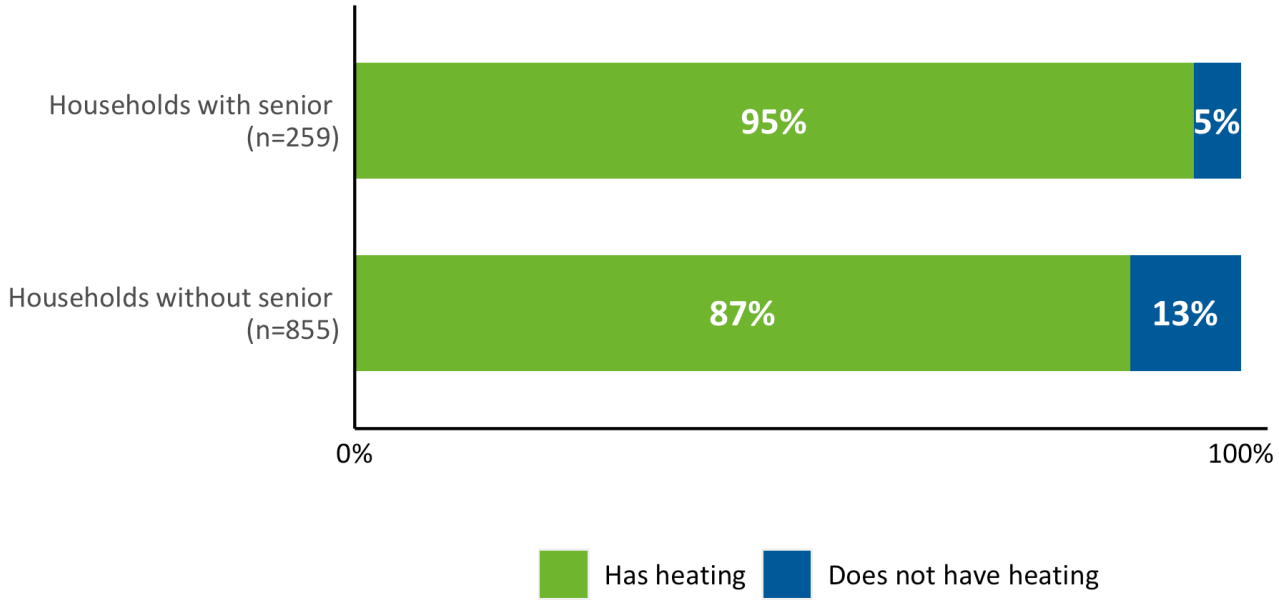


Figure 59: Prevalence of Heating in Eligible Renter Households with Seniors vs. Households without Seniors



Barriers

The main reasons given for not being willing to participate in ESA among households with seniors are that they already believe they have efficient appliances (73%), they believe there is little more they can do to save energy (70%), and they do not want to provide the personal information required to participate (48%) (Table 16).

Table 16: Barriers to ESA Participation Reported by Households That Were Unwilling to Participate in ESA,[39] with an Elderly Tenant

Barrier	% of Population of Households with an Elderly Tenant
We already have energy efficient appliances (n=112)	73%
There is little we can do to save energy beyond what we are already doing (n=111)	70%
We don't want to provide the personal information required to participate (n=120)	48%
The program doesn't appear to offer much that would help us save energy (n=98)	45%
We are skeptical that it is really free (n=119)	42%
We don't want strangers in our home (n=125)	42%
Our bills are low already (n=114)	41%
It's too much trouble to get approval from the landlord (n=101)	40%
We are afraid our rent will go up if upgrades are made (n=121)	39%
Saving energy is not a priority in our household (n=124)	32%
We move often (n=124)	4%

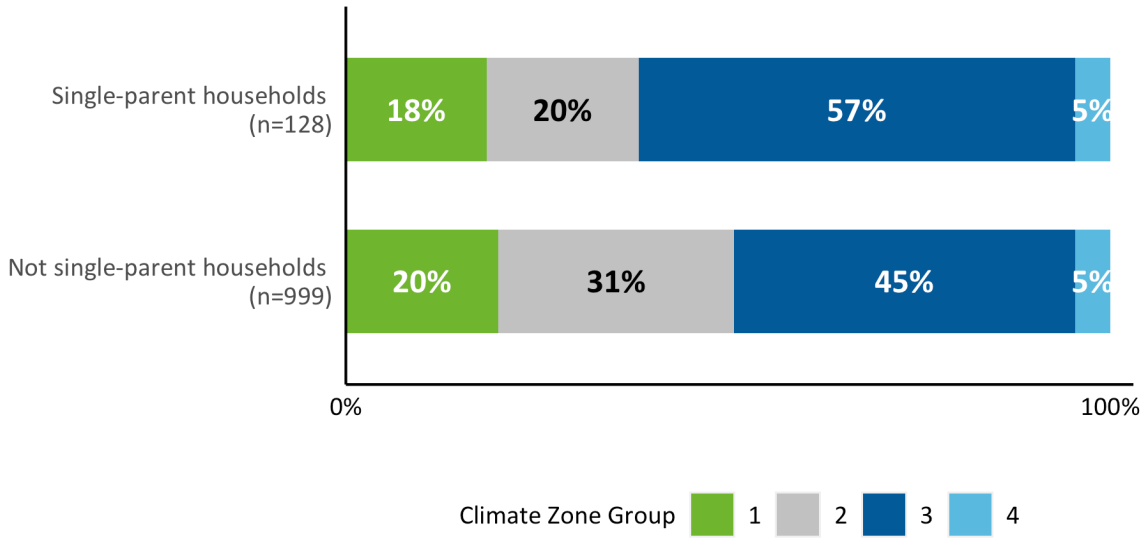
Single-Parent Households

Location

Figure 60 shows that households with a single parent are more likely to be in climate group 3 (Los Angeles and the Central Valley) and less likely to be in climate group 2 (Southwest Coast).

[39] If respondents reported their willingness to participate as a 1, 2, or 3 on a scale of 1 to 5 with 1 being not at all willing and 5 being extremely willing, or if they did not know what their willingness was, they were then asked about what barriers might exist that make them unwilling to participate.

Figure 60: Location of Households with a Single Parent by Climate Group



Heating and Cooling

Figure 61 and Figure 62 show that single-parent households are more likely to have cooling and more likely to have heating compared to households that do not include a single parent (this difference is statistically significant). This may be in part due to the greater likelihood that they live in climate group 3, which is less likely to have cooling overall.

Figure 61: Prevalence of Cooling in Eligible Renter Households with a Single Parent versus Households without a Single Parent

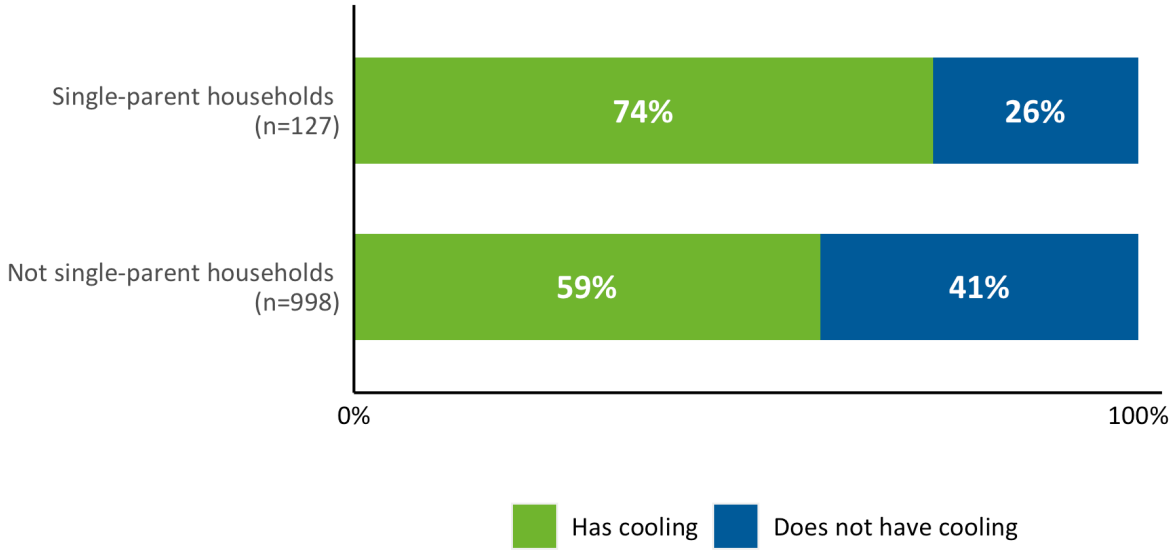
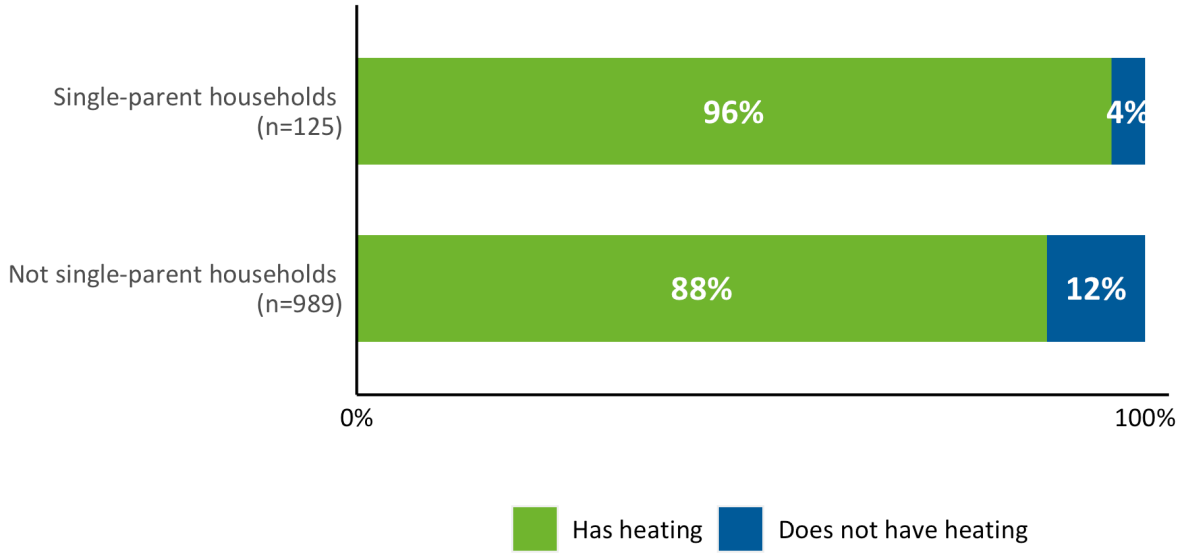


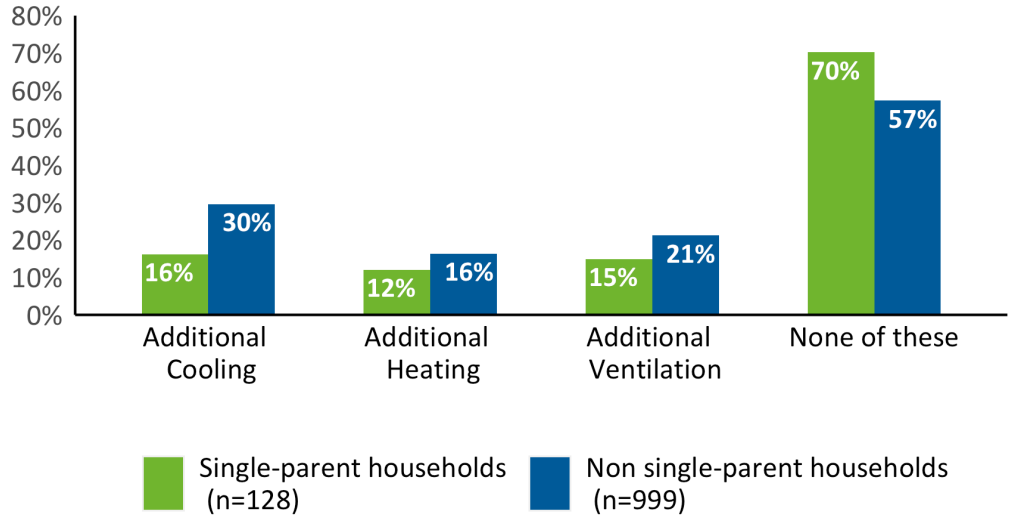
Figure 62: Prevalence of Heating in Eligible Renter Households with a Single Parent versus Households without a Single Parent



Health, Comfort, and Safety

Single-parent households were more likely to report that they do not have a family member who requires additional heating, cooling, or ventilation for health reasons. This difference is statistically significant overall and when looking at the households that need additional cooling (Figure 63).

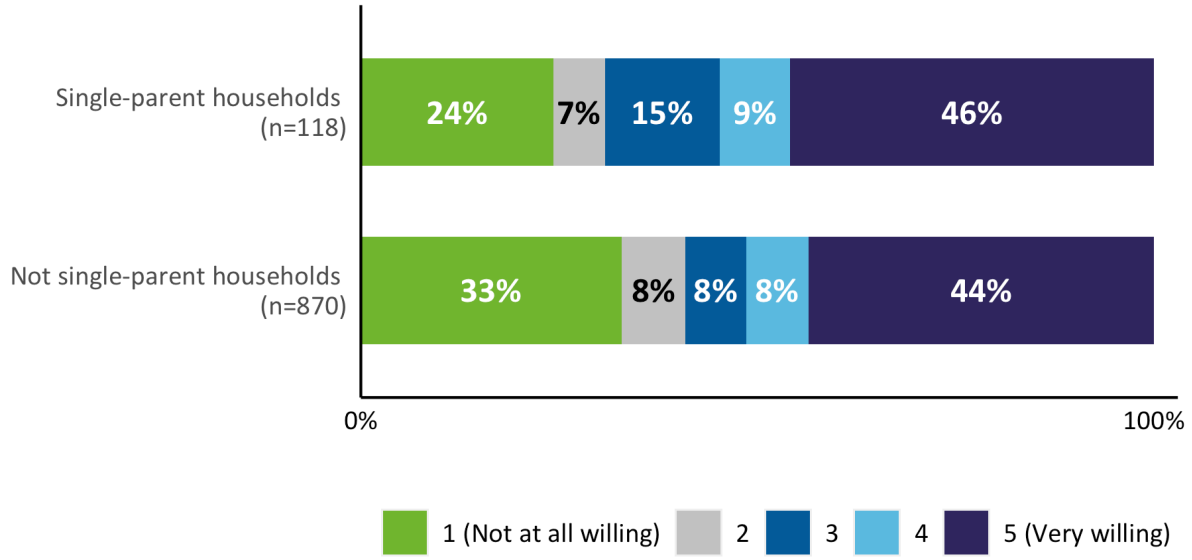
Figure 63: Self-Reported Need for Additional Heating, Cooling, or Ventilation for Health Reasons by Households with and without a Single Parent



Willingness to Participate

Single-parent households appear more likely to say they are not at all willing to participate in the ESA program, though this difference is not statistically significant (Figure 64).

Figure 64: Willingness to Participate in ESA by Households with and without a Single Parent



Barriers

Single-parent households unwilling to participate in ESA reported that their main reasons for not being interested are that that they already have efficient appliances (58%), they think it is too much trouble to get approval from their landlord (56%), and that the program does not appear to offer much that would help them save energy (44%) (Table 17).

Table 17: Barriers to ESA Participation Reported by Households Unwilling to Participate in ESA[40] (with Single Parent)

Barrier	% of Population of Single-Parent Households
It's too much trouble to get approval from the landlord (n=42)	58%
We already have energy efficient appliances (n=43)	56%
The program doesn't appear to offer much that would help us save energy (n=44)	44%
We don't want strangers in our home (n=48)	43%
We are afraid our rent will go up if upgrades are made (n=47)	39%
There is little we can do to save energy beyond what we are already doing (n=45)	38%
Our bills are low already (n=47)	34%
Saving energy is not a priority in our household (n=48)	32%
We move often (n=47)	31%
We are skeptical that it is really free (n=48)	27%
We don't want to provide the personal information required to participate (n=46)	25%

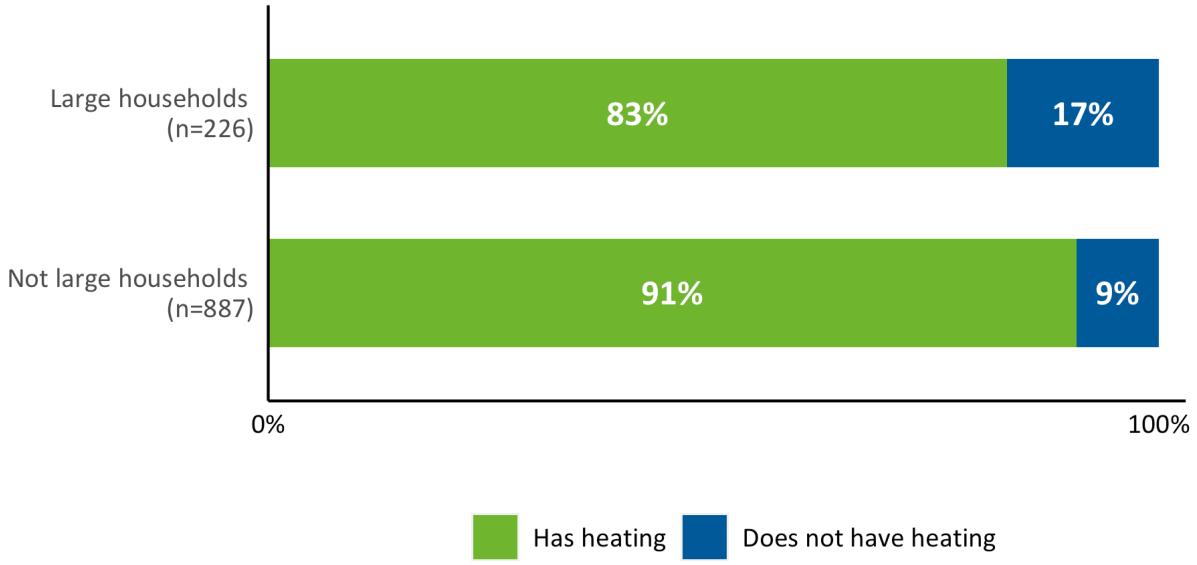
Large Households

Heating and Cooling

There is no significant difference in terms of prevalence of cooling in large households compared to smaller households, but there is a significant difference in terms of heating (Figure 65). Large households are less likely to have heating. If the program could help to install heating systems in large households that reported they would benefit from heating from a health perspective (as reported in the next subsection), they may be able to improve health and comfort within these households.

[40] If respondents reported their willingness to participate as a 1, 2, or 3 on a scale of 1 to 5 with 1 being not at all willing and 5 being extremely willing, or if they did not know what their willingness was, they were then asked about what barriers might exist that make them unwilling to participate.

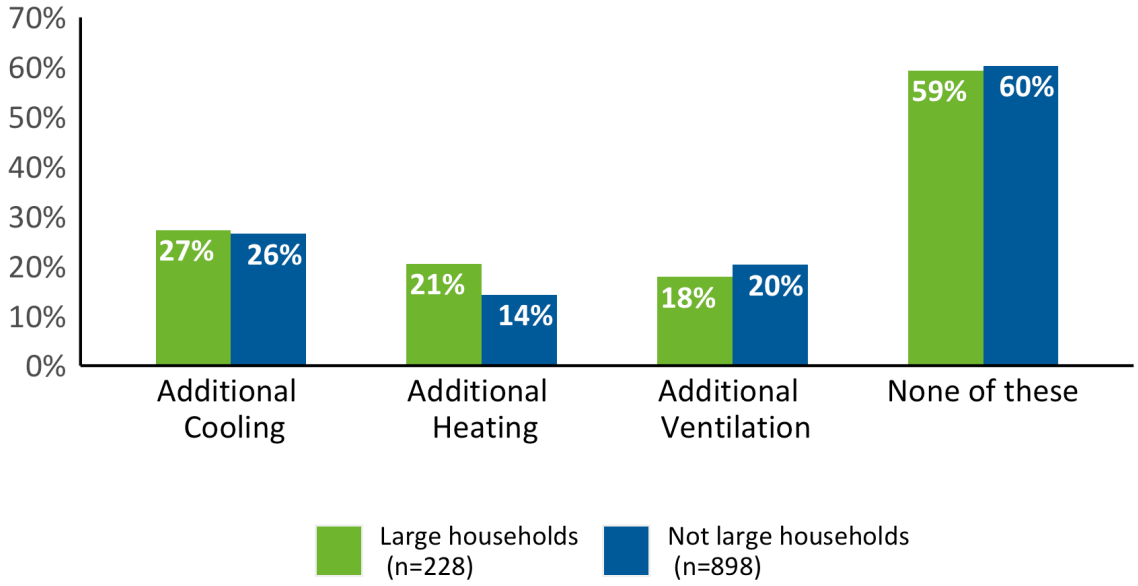
Figure 65: Prevalence of Heating in Eligible Households, by Household Size



Health, Comfort, and Safety

Larger households were more likely to report that they need additional heating for health reasons in their household (statistically significant, Figure 66). This may be in part because there are more household members, so it is more likely that there are people in the home that could benefit from a health perspective. Larger households also were more likely to report not having heating in the first place.

Figure 66: Self-Reported Need for Additional Heating, Cooling, or Ventilation for Health Reasons by Household Size



Barriers

For those unwilling to participate, large households most commonly cited that they already have efficient appliances (61%) and that there is little they think they can do to save energy (60%) as reasons for not wanting to participate (Table 18).

Table 18: Barriers to ESA Participation Reported by Households That Were Unwilling to Participate in ESA[41] (with a Large Household)

Barrier	% of Population of Large Households
We already have energy efficient appliances (n=68)	61%
There is little we can do to save energy beyond what we are already doing (n=68)	60%
We are skeptical that it is really free (n=69)	45%
The program doesn't appear to offer much that would help us save energy (n=66)	43%
Saving energy is not a priority in our household (n=71)	37%
We don't want strangers in our home (n=73)	34%
Our bills are low already (n=71)	30%
We move often (n=75)	29%
We are afraid our rent will go up if upgrades are made (n=71)	28%
We don't want to provide the personal information required to participate (n=72)	28%
It's too much trouble to get approval from the landlord (n=60)	27%

[41] If respondents reported their willingness to participate as a 1, 2, or 3 on a scale of 1 to 5 with 1 being not at all willing and 5 being extremely willing, or if they did not know what their willingness was, they were then asked about what barriers might exist that make them unwilling to participate.

Willingness to Participate

Table 19: Heating Needs by Housing Type

Home Type	Heating Requirements	Has Heat	Does Not Have Heat
Single-Family (n=221)	Requires additional heat for health reasons	24%	1%
	Does not require additional heat for health reasons	66%	9%
Small Multifamily (n=309)	Requires additional heat for health reasons	27%	1%
	Does not require additional heat for health reasons	61%	11%
Medium-Large Multifamily (n=584)	Requires additional heat for health reasons	27%	1%
	Does not require additional heat for health reasons	61%	11%

Small multifamily renters are more likely to have cooling and feel as though they do **not** need additional cooling for health reasons. They are also more likely to not have cooling and feel as though they **do need** additional cooling for health reasons.

Table 20: Cooling Needs by Housing Type

Home Type	Cooling Requirements	Has Cooling	Does Not Have Cooling
Single-Family (n=222)	Requires additional cooling for health reasons	12%	2%
	Does not require additional cooling for health reasons	53%*	33%*
Small Multifamily (n=312)	Requires additional cooling for health reasons	12%	4%
	Does not require additional cooling for health reasons	41%* **	44%* **
Medium-Large Multifamily (n=592)	Requires additional heat for health reasons	14%	5%
	Does not require additional cooling for health reasons	52%**	29%**

*Difference is statistically significant between single-family and small multifamily.
**Difference is statistically significant between small multifamily and large multifamily.

Figure 67: Prevalence of Cooling in Eligible Renter Households by Home Type

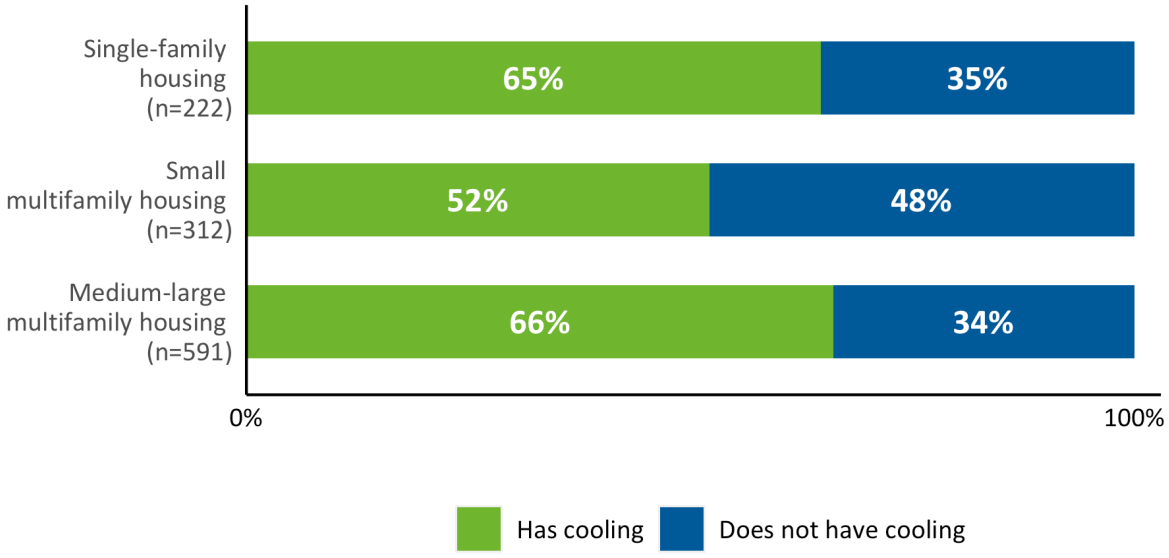
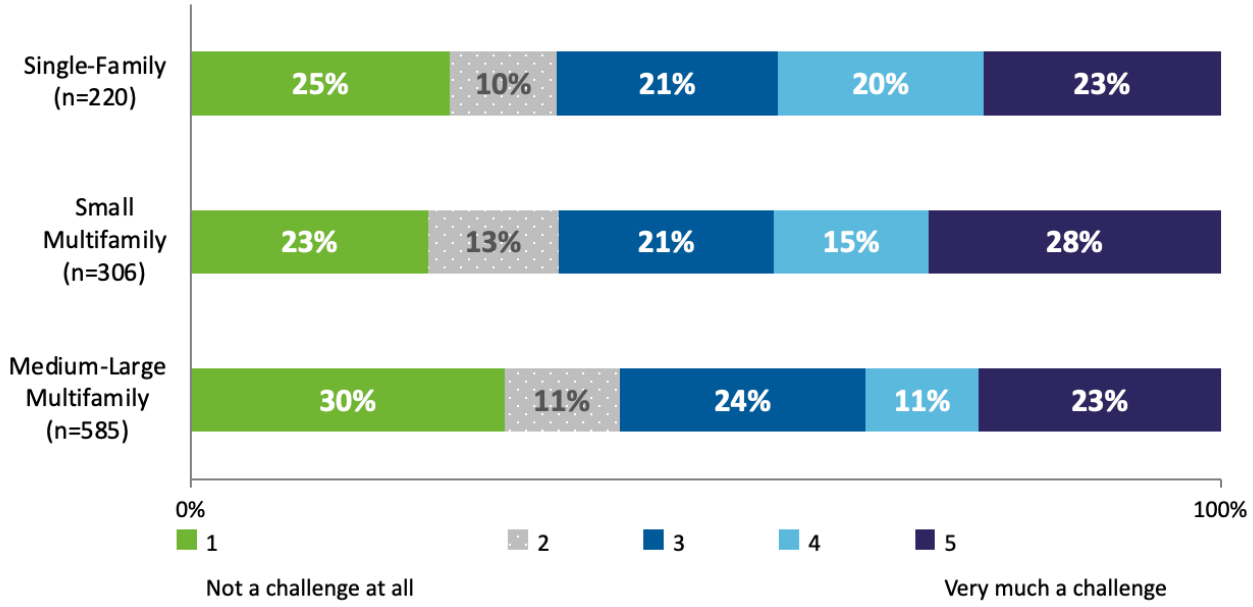


Figure 68: Relative Difficulty Paying Energy Bills by Home Type



Renters in single-family homes are more likely than renters in multifamily residences to have negotiated a repayment plan with their landlord for late or missing rent.

Figure 69: Renter Negotiated Rental Repayment Plan with Landlord by Home Type

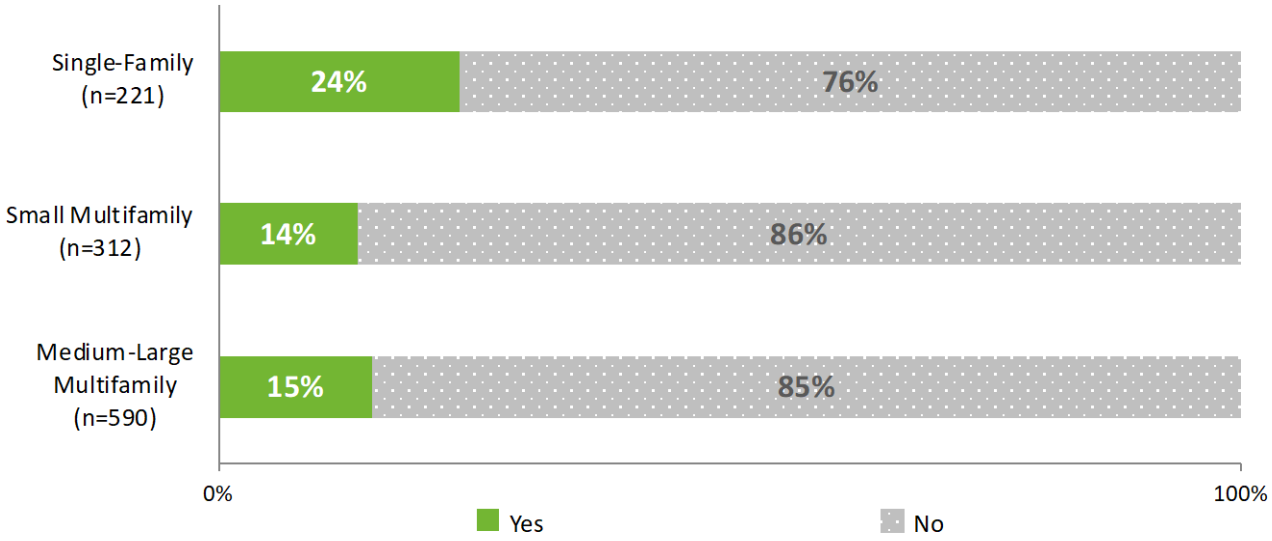


Figure 70: Landlords Responsive to Fix Things by Home Type

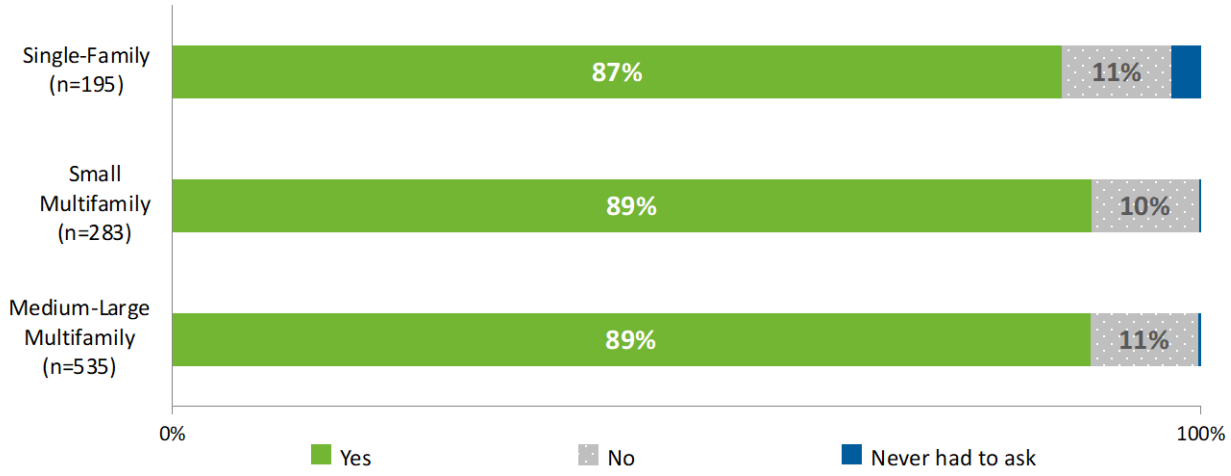


Figure 71: Recent Issues Not Brought-up to Landlord by Home Type

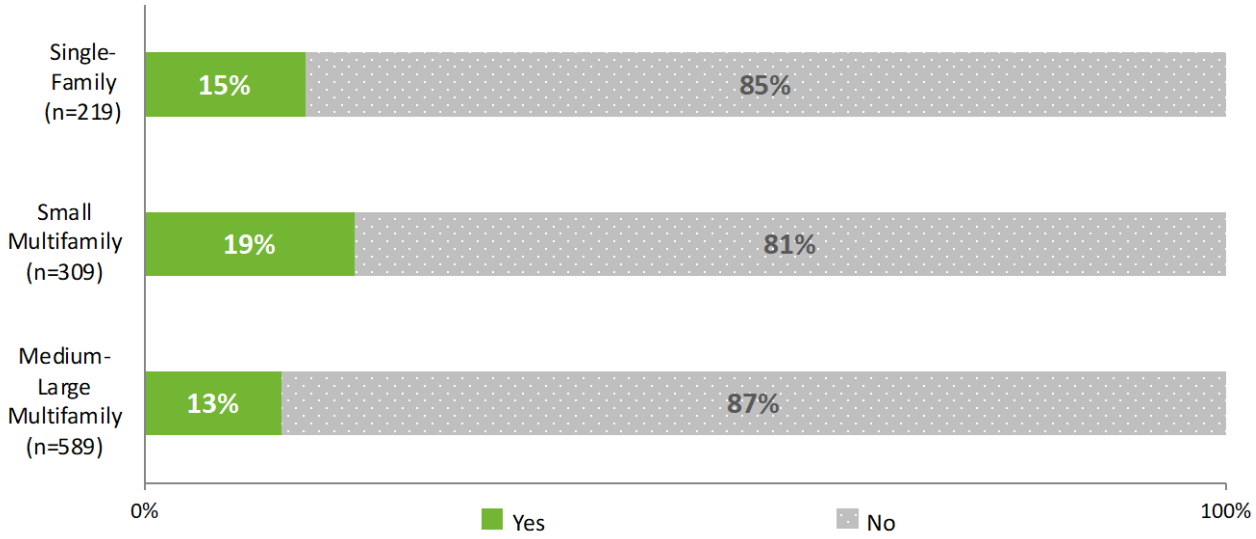
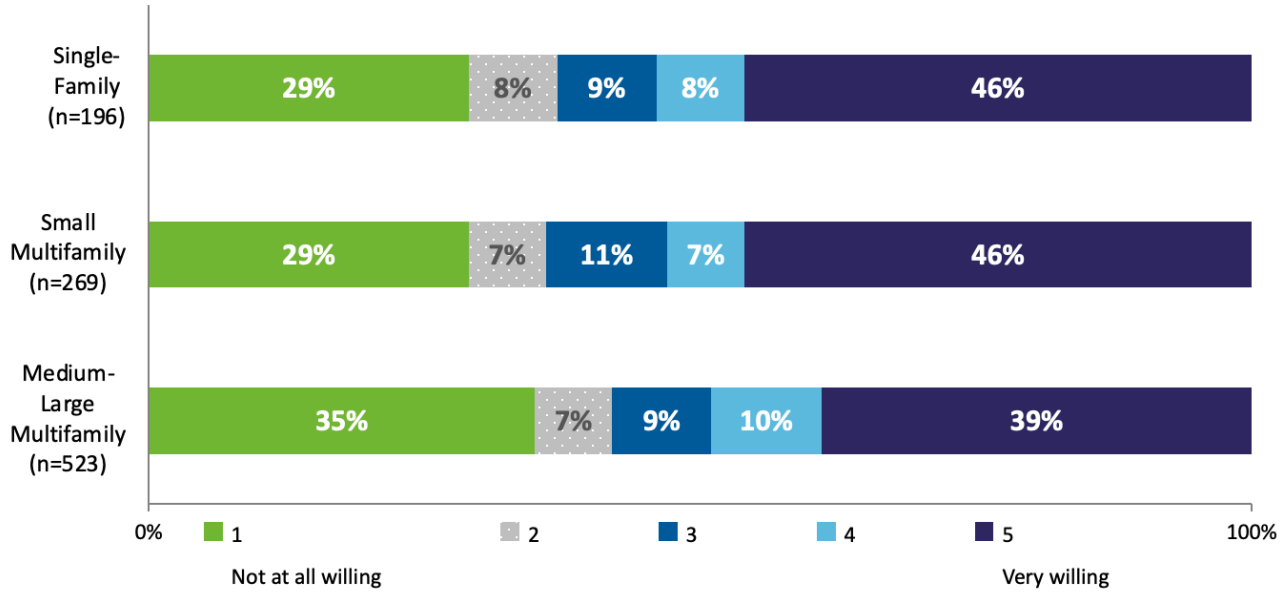


Figure 72: Willingness to Participate in ESA by Households by Home Type



Market-Rate Compared to Subsidized Housing

Table 21: Heating Needs by Subsidized and Market-Rate

Home Type	Heating Requirements	Has Heat	Does Not Have Heat
Subsidized (n=256)	Requires additional heat for health reasons	38%	0%
	Does not require additional heat for health reasons	54%	8%
Market-rate (n=858)	Requires additional heat for health reasons	23%	1%
	Does not require additional heat for health reasons	66%	10%

Table 22: Cooling Needs by Subsidized and Market-Rate

Home Type	Cooling Requirements	Has Cooling	Does Not Have Cooling
Subsidized (n=262)	Requires additional cooling for health reasons	15%	4%
	Does not require additional cooling for health reasons	51%	31%
Market-rate (n=864)	Requires additional cooling for health reasons	12%	3%
	Does not require additional cooling for health reasons	50%	35%

There is no statistically significant difference between renters in subsidized housing and renters in market-rate housing in the proportion of renters who have not brought up recent issues with their landlord.

Figure 73: Recent Issues Not Brought-Up with Landlord by Subsidized and Market-Rate

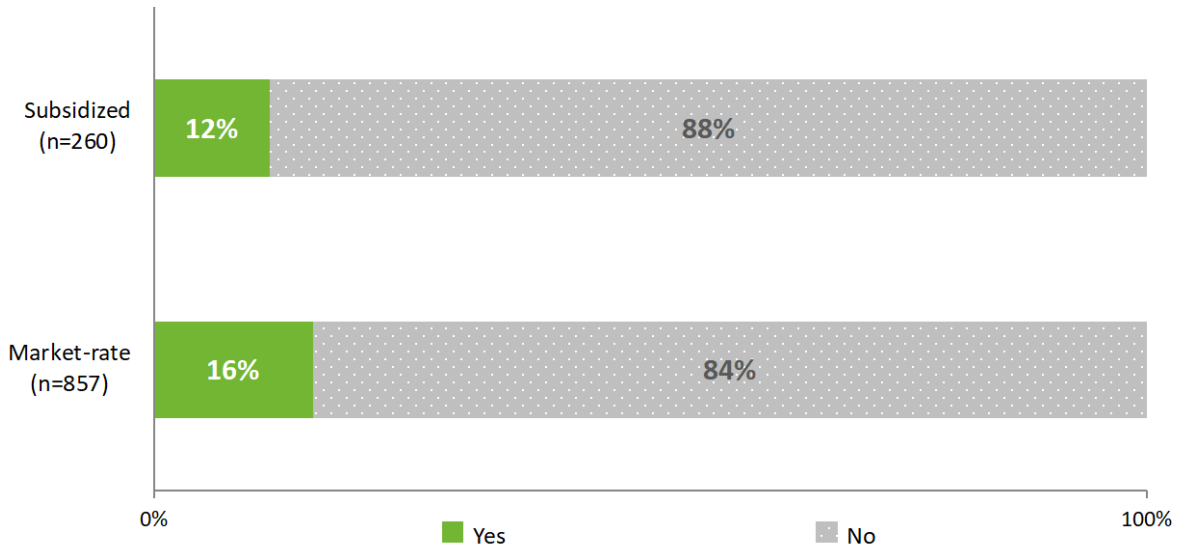


Table 23: Renter Groups and Areas of Inquiry (all differences presented are statistically significant, excluding barriers)

Eligible Renter Group	Energy Burden	Location	Heating and Cooling	Health, Comfort, and Safety	Willingness to Participate	Barriers (move often, privacy/trust issues)
Overall Renter Population	Lower for renters overall	Renters less prevalent in climate group 4. Eligible renters more likely to be in non-metro areas	1/2 of respondents have AC	At least 25 percent are somewhat or more concerned about indoor air quality. More of a concern for climate group 4.	One-third of respondents not at all willing to participate	Already have appliances, not much more can be done
At least one person with disability	*Next iteration*	No difference	No difference	More likely to report needing heating, cooling, and ventilation for health reasons	Report higher willingness to participate	Already have appliances, not much more can be done
At least one elderly person in the household	*Next iteration*	More likely to reside in climate group 3.	More likely to have heating and less likely to have cooling	More likely report needing heating and cooling for health reasons	No difference	Already have appliances, not much more can be done
Single-parent household	*Next iteration*	Less likely to reside in climate group 2 and more likely to reside in climate group 3	More likely to have cooling and heating	Less likely to report needing additional space conditioning	No difference	Already have appliances, too much trouble to get permission
Large family	*Next iteration*	No difference	Less likely to have heating	More likely to report needing heating for health reasons	Report higher willingness to participate	Already have appliances, not much more can be done
Household that speaks no English or Spanish	Lower energy burden	No data – part of market characterization, not renter survey	More likely to have space heaters over 30 years old	No data – part of market characterization, not renter survey		
Subsidized multifamily	*Next iteration*	No difference	No difference	Report more need for cooling health reasons	No difference	Already have appliances, not much more can be done
Multifamily renters	Lower than single-family homes	Rarely in climate group 4	Smaller multifamily homes are less likely to have cooling	Higher occupancy. More likely to say they need additional ventilation in small multifamily compared to single-family homes.	No difference	Differ significantly from single-family renters

Table 24: Renter Groups and Areas of Inquiry (all differences presented are statistically significant, excluding barriers)

Eligible Renter Group	Energy Burden	Location	Heating and Cooling	Health Comfort and Safety	Willingness to Participate	Barriers (move often, privacy/trust issues)
Overall renter population	Lower for renters overall	Renters less prevalent in climate group 4. Eligible renters more likely to be in non-metro areas	1/2 of respondents have AC	At least 25 percent are somewhat or more concerned about indoor air quality. More of a concern for climate group 4.	One-third of respondents not at all willing to participate	Already have appliances, not much more can be done
Renters in subsidized housing		No difference	No difference	Report more need for cooling for health reasons	No difference	Already have appliances, not much more can be done
Renters in market-rate housing					No difference	Already have appliances, not much more can be done
Small multifamily renters	Lower than single-family homes	Rarely in climate group 4	Smaller multifamily homes are less likely to have cooling	More likely to say they need additional ventilation in small multifamily compared to single-family homes.	No difference	Already have appliances, not much more can be done
Medium-large multifamily renters			(more likely to have cooling than small single-family homes)		No difference	Already have appliances, not much more can be done
Single-family renters					No difference	Already have appliances, not much more can be done

Appendix C: Findings Built on Prior LINAs

The ways in which this report builds upon findings from prior LINAs is shown below:

Prior LINA Findings	Expansion of Findings with 2022 LINA
2013 LINA. The 2013 LINA recommended that the program consider ways to overcome barriers to participate for renters, with a focus on single-family renters who have higher energy burdens than multifamily renters.	While the primary barriers to participation remain the same across renter housing type, this research found that secondary barriers differ by home type, with single-family renters being less likely to fear their rent will increase if upgrades are made compared to small multifamily renters (50% small multifamily, 33% single-family) and that the program is truly free (49% small multifamily, 29% single-family). Single-family renters are also less likely than medium-large multifamily renters to cite low bills as a barrier to ESA participation (54% medium-large multifamily, 34% single-family).
2016 LINA. The 2016 LINA found that renters in multifamily buildings had higher energy burdens due to their lower incomes but that their energy usage was lower than that of residents in single-family homes, pointing to potentially fewer savings opportunities.	This LINA found that amongst eligible renters, multifamily renters had lower energy burdens than single-family renters and that there are a significant number of eligible renters who agree that there is not much that the program can do to help them reduce their energy use more than they already have.
2019 LINA. The 2019 study's interviews with ESA supervisors provided evidence that landlords were unwilling to sign waivers for their tenants to receive cooling measures, and revealed some incidences of furnace replacement limitations.	This 2022 study further investigated landlords as a barrier to program participation and found that from a renter perspective, landlord concerns came in third behind two more significant barriers: an interpretation that the program would not help them save more energy beyond what they are already doing, and a belief that appliances in the unit were already energy efficient.

Appendix D: Data Collection Instruments

1.1 2022 LINA Renter Survey Instrument

Shown below is the script and data collection instrument for the tenant survey. Questions added to the web survey are marked at the beginning of the question.

Hello, my name is [_____] calling from CIC Research. We are conducting a survey on behalf of the California Public Utilities Commission and [UTILITY]. Have I reached [account holder]?

[*INTERVIEWER: IF THE RESPONDENT IS UNABLE TO DO THE SURVEY AT THE TIME OF THE CALL, ASK FOR A GOOD TIME TO CALLBACK AND SCHEDULE THE CALLBACK ACCORDINGLY.]*

We are conducting a study to help us better understand the lives, experiences and needs of households like yours. As a token of our appreciation, we will send you a $25 gift card. You may have received a letter from the California Public Utilities Commission letting you know that we would be calling.

A1) Do you remember receiving that letter?

1) yes --> Great. I'm calling to conduct the survey described in that letter.
2) no

[IF A1 = 2]
The Public Utility Commission is asking for your help with a study to help them improve programs and services for the state's residents. As a token of our appreciation, we will send you a $25 gift card.

[ALL]
Please be assured that what you tell me will be kept completely anonymous and will only be used to improve programs and services for California residents.

[IF NEEDED, SCHEDULE A CALL BACK]

[IF NEEDED:]

- YOURS IS ONE OF ONLY 900 CALIFORNIA HOUSEHOLDS BEING SURVEYED FOR THIS STUDY. YOU WERE CHOSEN AT RANDOM. IT WOULD BE VERY HELPFUL IF YOU COULD HELP BY COMPLETING THE SURVEY.
- THE SURVEY SHOULD TAKE ABOUT 20 MINUTES.
- THE QUESTIONS ARE FOR RESEARCH PURPOSES ONLY. WE ARE NOT SELLING ANYTHING, AND WE WILL NOT GIVE ANY OF YOUR SPECIFIC RESPONSES TO

ANYONE OUTSIDE THE RESEARCH TEAM. WE WILL ONLY BE PASSING ALONG STUDY RESULTS THAT CANNOT BE LINKED BACK TO YOU IN ANY WAY.

- YOU CAN CALL THE CALIFORNIA PUBLIC UTILITIES COMMISSION OR YOUR UTILITY DURING BUSINESS HOURS IF YOU HAVE ANY QUESTIONS ABOUT THIS STUDY. (GIVE APPROPRIATE PHONE NUMBERS)
- WE WILL BE SENDING YOU A $25 GIFT CARD FROM YOUR CHOICE OF WALMART OR TARGET. WE CAN EMAIL AN ELECTRONIC GIFT CARD OR MAIL A PHYSICAL CARD TO YOU.]

- IF YOU HAVE ANY QUESTIONS ABOUT THIS STUDY, I CAN GIVE YOU A NAME AND PHONE NUMBER AT THE CPUC OR YOUR UTILITY TO CALL. WOULD YOU LIKE ME TO GIVE YOU THAT NUMBER? (IF YES:) PLEASE REFER TO THE "CALIFORNIA HOUSEHOLD NEEDS ASSESSMENT STUDY" WHEN YOU CALL.

SDG&E Disclaimer: During this survey we may collect personal information. For more details including SDG&E's policy on how they use personal information please visit sdge.com/privacy.

SCE Disclaimer: During this survey we may collect personal information. For more information on SCE's privacy policy please visit: https://www.sce.com/privacy

PG&E Disclaimer: During this survey we may collect personal information. For more information on PG&E's privacy policy please visit: https://tinyurl.com/kw69zyyu

SoCalGas Disclaimer: During this survey we may collect personal information. For more information on SoCalGas's privacy policy please visit: https://www.socalgas.com/privacy-policy

A. Screener Questions

These first questions are to ensure we are talking to a wide enough mix of people to make sure we can understand how the utility can better serve its customers.

First, we have a few questions about your home to make sure you are eligible for this study.

Q1. Do you rent or own your home?

1. Rent (SKIP TO Q2)
2. Own [THANK AND TERMINATE]
9. Don't Know/Refused

Q1A. (Added for web) Do you or someone you live with pay a landlord or property management company to live in your home?

1. Yes
10. No [THANK AND TERMINATE]

Q2. Do you live in a single family home or an apartment?
1. Single family home (SKIP TO Q3)
2. Apartment, duplex, tri-plex, 4-plex, condo or townhouse
3. Something else (DO NOT READ)
4. Don't Know/Refused (DO NOT READ, SKIP TO Q3)

Q2A. How many units are in your complex? Is it . . . (READ CHOICES)
1. 2-10 units
2. 11-39 units, or
3. 40+ units?
4. Don't Know/Refused (DO NOT READ)

Q3. Is your rent lower because you are in a government-housing program?
1. Yes
2. No
9. Don't Know/Refused

Q4. As part of your rental agreement, do you have to show your landlord your income every year to determine how much rent you pay?
1. Yes
2. No
9. Don't Know/Refused

Next, since we are trying to understand the needs of different types of households, we'd like to know what languages are being spoken at home.

Q5. Does anyone in your household speak a language other than English?
1. Yes
2. No [SKIP TO Q8]
9. Don't Know/Refused [SKIP TO Q8]

Q6. What are ALL of the languages that are spoken in your household? (READ IF NECESSARY TO CLARIFY)

1. English
2. Spanish
3. Mandarin
4. Cantonese
5. Tagalog/Filipino

6. Korean
7. Vietnamese
8. German
9. Chinese (unspecified or not Mandarin and not Cantonese)
10. Japanese
11. Other – SPECIFY: _____
99. Don't Know/Refused

Q7. Which language would you say is the primary language?

1. English
2. Spanish
3. Mandarin
4. Cantonese
5. Tagalog/Filipino
6. Korean
7. Vietnamese
8. German
9. Chinese (unspecified or not Mandarin and not Cantonese)
10. Japanese
11. Other – SPECIFY: _____
99. Don't Know/Refused

B. Building Characteristics

Next, we would like to find out more about the characteristics of the building you live in.

Q8. How many years have you lived at your current residence? (DECIMALS OK)

# of years: _____

Q9. Approximately when was your home/building built? Was it…(READ CHOICES)

1. Before 1960
2. 1960 to 1980
3. 1980 to 2000
4. 2000 to 2020
5. 2021 or newer
9. Don't Know/Refused (DO NOT READ)

Q10. What is the square footage of your home/apartment? Is it…(READ CHOICES)

1. Under 1000 sq ft
2. 1000-2000 sq ft
3. 2000-3000 sq ft

4. More than 3000 sq ft
9. Don't Know/Refused (DO NOT READ)

Q11. How many bedrooms are there?

# of bedrooms: _____

Q12. How do you cool your home? I'll read you a list of ways people may cool their homes. Please tell me which of these apply to you. (READ & MARK ALL MENTIONED)

1. No cooling / windows only
2. Central AC / heat pump
3. Ceiling fan
4. Portable fan
5. Window AC
6. Swamp cooler
7. Anything else? (SPECIFY):_____
9. Don't Know/Refused (DO NOT READ)

Q13. Which of these do you use to heat your home? I'll read you a list of ways people may heat their homes. Please tell me which of these apply to you. (READ & MARK ALL MENTIONED) (CLARIFY IF NOT ON LIST: IS IT ELECTRIC OR GAS, BUILT-IN OR FREE-STANDING, ETC.))

1. Gas furnace
2. Heat pump
3. Portable electric heater
4. Wood stove / fireplace
5. Anything else? (SPECIFY): _____ (ASK Q13A and 13B)
6. No heat
9. Don't Know/Refused (DO NOT READ)

Q13A. (Added for web) Is your [answer from Q13] electric or gas?

1. Electric
2. Gas

Q13B. (Added for web) Is your [answer from Q13] built-in or free-standing?

1. Built-in
2. Free-standing

C. Monthly Rent and Utility Bills

Next, we will ask you a few questions about your rent and monthly utility bills.

Q14. First, how much do you pay in monthly rent?

# of dollars spent on rent per month: $_____

Q15. Roughly what is your monthly gas bill?
1. $_____
2. My gas bill is included in my rent
3. Other – SPECIFY: _____
4. My gas & elec bills are combined (SDG&E & PG&E ONLY) (ASK:) What is the combined amount? $_____ (NOW SKIP TO Q17)
9. Don't Know/Refused

Q16. Roughly what is your monthly electricity bill?
1. $_____
2. My electric bill is included in my rent
3. Other – SPECIFY: _____
4. My gas & elec bills are combined (SDG&E & PG&E ONLY) (BACK UP TO Q15 & CHOOSE #4)
9. Don't Know/Refused

E. Energy Use & Needs

Now, we'd like to ask about how COVID may have changed things in your home.

Q17. Due to COVID, did members of your household spend more time at home? I'm going to read you some reasons people may have spent more time at home due to COVID. Please tell me which of them apply to your household. [(INTERVIEWER: READ LIST ONE ITEM AT A TIME AND HAVE THE RESPONDENT ANSWER YES OR NO TO EACH; SELECT ALL THAT APPLY]
1. We did fewer social activities out of the house
2. More adults were home because they were out of work
3. More adults were working from home
4. More children were at home when they would have previously been at school or in childcare.
5. Anything else? (specify) _____
6. People did not spend more time at home (if they select this, no other options can be selected)

Q18. What, if any, change did you notice in your energy bills due to impacts of COVID? Would you say . . . (READ CHOICES)
1. They were much lower
2. They were somewhat lower

3. No Change
4. They were somewhat higher
5. They were much higher
6. Other (SPECIFY) _____
9. Not sure/Don't know

Q19. Do any members of your household require more heating or cooling for health reasons? Would you say . . . (READ CHOICES; CHECK ALL THAT APPLY)
1. Yes, sometimes we keep the house cooler due to health reasons
2. Yes, sometimes we keep the house warmer due to health reasons
3. Yes, sometimes we run fans to circulate air for health reasons
4. None of those
9. Don't Know/Refused (DO NOT READ)

Q20. Do any members of your household have medical devices that require electricity?
1. Yes (ASK Q20A)
2. No
9. Don't Know/Refused

Q20A. What devices do they use? (DO NOT READ CHOICES)
1. CPAP / breathing machine for sleep apnea
2. Nebulizer/ambulizer for asthma, bronchitis or COPD
3. Other (SPECIFY)

Q21. How is your indoor air quality? Would you say it's… (READ CHOICES)
1. Not a concern (SKIP TO Q23)
2. Slightly a concern (CONTINUE)
3. Somewhat of a concern (CONTINUE)
4. A serious concern (CONTINUE)
9. Don't Know/Refused (DO NOT READ, SKIP TO Q23)

Q22. [If Q21 = 2, 3 or 4] Can you tell me a bit more about your concern with indoor air quality?

_____

D. Relationship with Landlord

Next, we'd like to learn more about your experiences with your landlord.

Q23. Other than paying your rent, how do you typically communicate with your landlord? (DO NOT READ; MULTIPLES OK)

1. In person
2. Email
3. Phone
4. Text
5. Mail
6. I don't interact with my landlord (SKIP TO Q27)
9. Don't Know/Refused

Q24. [Q23≠6] About how often do you talk to your landlord about any issues regarding your home? Is it . . . (READ CHOICES)

1. Frequently (at least once per month)
2. Occasionally (2-3 times a year)
3. Rarely (once a year, or less)
4. Never (SKIP TO Q27)
9. Don't Know/Refused (DO NOT READ)

Q25. [IF Q24= 1, 2 or 3:] Since you moved into your current home, which of the following topics have you discussed with your landlord? [READ LIST ONE ITEM AT A TIME AND HAVE RESPONDENT SAY YES OR NO FOR EACH ITEM; ROTATE, EXCEPT LAST 2 ITEMS ARE ALWAYS LAST; SELECT ALL THAT APPLY),

1. Broken appliances in my home
2. General repairs
3. Plumbing issues
4. [DON'T ASK IF Q2=1] An issue related to common spaces such as laundry rooms
5. Yard or landscaping
6. Lease terms or renewal
7. rent payments
8. Issue with heating or cooling, or temperature
9. Issues regarding neighbors
10. Safety issues
11. I don't have issues with my home
12. Or something else?:_____

Q26. [IF Q24=1, 2 or 3] Is your landlord responsive to fix things that are broken or not working at all in your home?

1. Yes

2. No
3. Never have had to ask
9. Don't Know/Refused

Q27. Have you recently had any issues you have not brought up with your landlord?
1. Yes
2. No (SKIP TO Q30)
9. Don't know/Refused (SKIP TO Q30)

Q28. [If Q27=1] What issues did you not bring up with your landlord?

_____

Q29. Why haven't you talked to your landlord about it? Is it that… [READ LIST ITEM BY ITEM AND GET YES OR NO ANSWER FOR EACH; ROTATE WITH #8 ALWAYS LAST; CHECK ALL THAT APPLY)]
1. Don't want to annoy the landlord
2. Landlord is not onsite or nearby
3. No use - landlord won't do anything
4. Problem is not something the landlord can do anything about
5. Don't like talking to the landlord
6. Concerns about the rent being raised
7. Don't want them in my home
8. Something else:_____

Q30. How likely are you to approach your landlord to talk about replacing a poorly functioning appliance? Would you say you are . . . (READ CHOICES)
1. Not at all likely
2. Somewhat unlikely
3. Neither likely nor unlikely (SKIP TO Q32)
4. Somewhat likely
5. Very likely
9. Refused (DO NOT READ) (SKIP TO Q32)

Q31. [Ask if Q30=1, 2, SKIP if 3, 4, 5, or 9] Why do you say that? [DO NOT READ CHOICES]
1. Other things are more important
2. Have no poorly functioning appliances
3. Other (SPECIFY)_____

Q32. What, if anything, is your biggest complaint about the home or property you are renting?

_____

Q33. At your current home, have you had to negotiate repayment plans with your landlord for late or missing rent?
1. Yes
2. No
9. Don't Know/Refused

F. Engagement with Utility and Utility services

Q34. In the last year, have you called [Utility] for any reason? For what reason or reasons have you called them? [DO NOT READ LIST, PROBE WELL, MULTIPLE RESPONSES ALLOWED]
1. outage
2. learn about ways to save energy
3. problems/errors with bill
4. get extension/help paying bill
5. ask about assistance programs
6. report gas leak
7. appliance check
8. pilot light check/turn pilot on or off
9. pay bill or partial bill payment
10. other (Specify): _____
11. no, haven't called them in the last year

Q35. Did you receive any help from your electric or gas utility in the past year or so, such as getting energy efficient equipment or help with your energy bills? How did they help you? [DO NOT READ LIST. MULTIPLE RESPONSES ALLOWED]
1. reduced rates—unspecified
2. CARE - reduced rates through the California Alternative Rates for Energy program
3. FERA - reduced rates through the Family Electric Rate Assistance Program
4. payment arrangements (e.g., bill deadline extensions, reduced payments, etc.)
5. arrearage forgiveness (forgiving past due bills, cover payment for one-time bill or remove past due amount)
6. autopay
7. free appliances or energy saving services (Energy Savings Assistance program)
8. bill credit - unspecified
9. LIHEAP
10. Maravilla Foundation
11. United Way
12. no help from electric or gas utility
13. other – SPECIFY: _____
99. DK/REF

Q36. Your utility offers an Energy Savings Assistance program which provides information on ways to save energy, free energy efficient light bulbs, low flow shower heads and sometimes energy efficient appliances and/or attic insulation.

Before today, have you heard of this program?

1. Yes
2. No
9. Don't Know/Refused

Q37. The process to participate includes several steps. If you sign up for the program, a contractor would visit your home and review your income documents and fill out an application with you. The contractor would also provide forms to give to your landlord before approving work that may impact the property. If you are interested and agree, the contractor would visit your home to see what you may qualify for. Some things like large appliances or home improvements would be installed by a different contractor during another visit or two to your home.

Based on what I've explained, how willing would you be to participate in a program like this and have free energy efficiency appliances and upgrades installed in your home? Please use a 1 to 5 scale where 1 means not at all willing and 5 means very willing. (IF NECESSARY:) You may use any number from 1 to 5.

Not at all Willing				Very Willing	Don't Know
1	2	3	4	5	9

Q38. [If Q37= 1, 2, 3, or 9] Next up I'll read a list of reasons some people haven't participated in the past. For each one, please tell me if it might reduce your interest in the program and make you hesitant to participate. (DO NOT READ "MAYBE" BUT CAN SELECT IT IF MENTIONED)

	Yes	No	Maybe (DO NOT READ)	DK/Ref
a. Saving energy is not a priority for our household	3	1	2	9
b. The program doesn't appear to offer much that would help us save energy	3	1	2	9
c. We move often	3	1	2	9
d. Our bills are low already	3	1	2	9
e. We are skeptical that it is really free	3	1	2	9
f. There is little we can do to save energy beyond what we are already doing	3	1	2	9
g. We already have energy efficient appliances	3	1	2	9
h. We don't want strangers in our home	3	1	2	9
i. It's too much trouble to get approval from the landlord	3	1	2	9
j. We are afraid our rent will go up if upgrades are made	3	1	2	9
k. We don't want to provide personal information required to participate.	3	1	2	9

Q39. Relative to other bills you have to pay, how much of a challenge is it to pay your electricity and gas bills? Please rate that challenge on a 1 to 5 scale, where 1 means "not a challenge at all" and 5 means "very much a challenge." (IF NECESSARY:) You may use any number from 1 to 5.

Not a challenge At all				Very much a Challenge	Don't Know
1	2	3	4	5	9

G. Final Demographic Questions

We are almost done here, I just have a few last questions left to get a little more detail about your household. For these next questions, your household is defined as adults and children who live in your home at least half the time.

Q40. Including yourself, how many people currently live in your household?

Total # in Household: #_____
-1. Refused (SKIP TO Q42, THEN TO Q44)

Q41. How many of those fall into each of the following age groups? (READ AGE GROUPS; MUST TOTAL # IN Q40)
a) Less than 5 years: [Record #]_____
b) 6 to 18 years: [Record #] _____
c) 19 to 40 years: [Record #]_____
d) 41 to 65 years: [Record #]_____
e) More than 65 years: [Record #]_____
f) Don't Know/Refused (DO NOT READ)

Q42. Are any members of your household considered permanently disabled?
1. Yes
2. No
9. Don't Know/Refused

(IF Q40 = -1, SKIP TO Q44)

Q43. Now, I have two questions about your household's total income in 2020. Was your total income, before any taxes, greater than or less than [PROGRAMMER, INSERT INCOME LEVEL GIVEN BELOW WHICH IS ASSOCIATED WITH # OF HOUSEHOLD MEMBERS REPORTED IN Q40]
1. greater / more (CONTINUE)
2. less (CONTINUE)
9. Don't Know/Refused (SKIP TO Q46)

Household Members	Income Level
1	26,000
2	35,000
3	44,000
4	53,000
5	62,000
6	71,000

7	80,000
8	89,000
9	98,000
10	107,000

Q44. [if Q43=1 or 2] Next, I will read a list of income ranges. Please stop me when read the category that best describes **your household's 2020** income including all forms of income for ALL members of the household. Would you say it was…? [PROGRAMMER: SHOW ONLY OPTIONS THAT ARE POSSIBLE GIVEN RESPONSE TO Q43]

1. Less than $5,000
2. $5,000 to $10,000
3. $10,000 to $15,000
4. $15,000 to $20,000
5. $20,000 to $25,000
6. $25,000 to $30,000
7. $30,000 to $35,000
8. $35,000 to $40,000
9. $40,000 to $45,000
10. $45,000 to $50,000
11. $50,000 to $60,000
12. $60,000 to $75,000
13. $75,000 to $100,000
14. $100,000 to $125,000
15. $125,000 to less than $150,000
16. $150,000 or more
99. DK/Refused (DO NOT READ)

Q45. [if Q44= 1, 2, 3, OR 4] Just to confirm, your household lived off of less than ($5,000/$10,000/$15,000/$20,000 from Q44) last year. In a sentence or two, could you describe how you managed to pay for food, housing, and the other basic necessities?

[RECORD VERBATIM] _____

9. Don't Know/Refused

Q46. In 2020, did you receive assistance from any of the following government programs or services? How about...? [ROTATE]

a) Section 8 vouchers for housing
b) CalFresh, SNAP, or other kinds of food stamps
c) Medical assistance from MediCal or Medicaid [note to interviewer – NOT MEDICARE – be sure to clarify it's MediCAL or MediCAID]

response options 1) yes 2) no 9) DK/REF

Q46B. (Added for web) Which of the following best describes your living situation?

1. **I live in public housing.** Public housing is owned and managed by the government or a non-profit with eligibility requirements.
2. **I live in affordable housing.** My landlord is required to have tenants that are under a certain income so they ask me to show proof of income more than just when I applied for the home.
3. **I have a voucher.** These are Housing Choice Vouchers, formerly known as Section 8. My voucher moves with me and helps with payments to my landlord.
4. **I live in market rate housing.** I don't receive any housing subsidies from the government and neither does my landlord or the homeowner.
5. **None of the above:** Please explain. _____

Q47. Would you like us to follow up to share more about some of the programs we've talked about?

1. Yes
2. No
9. Don't Know/Refused

Q48. Would you be open to being contacted again later to talk a bit more about some of the topics we've covered today?

1. Yes
2. No
9. Don't Know/Refused

(IF BOTH Q47 AND Q48 = NO OR DK/REF, SKIP TO Q52)

Q49. [If Q47 and/or Q48= 1] What is the best phone number to reach you at?

_____

Q50. [If Q47 and/or Q48= 1] What is the best email to reach you at?

_____

Q51. [If Q47 and/or Q48= 1] Can you remind me what your name is?

_____

Q52. Those are all of my questions. As a thank you, we can offer a choice of a Walmart or a Target gift card for $25. Which would you prefer? And would an e-gift card sent by e-mail be alright, or would you prefer one by regular mail?

1) Walmart gift card sent in the mail (ASK Q53)
2) Walmart e-gift card (ASK Q54)
3) Target gift card sent in the mail (ASK Q53)
4) Target e-gift card (ASK Q54)

Q53. What name and address would you like your card sent to? (CHECK SPELLING CAREFULLY)

Name _____
Address_____
City _____
State_____ ZIP _____

(NOW SKIP TO CLOSING)

Q54. (IF Q50 HAS EMAIL ADDRESS, ASK:) Is that email address you just gave me, the best one to email your gift card to?
(IF NO EMAIL IN Q50 ASK:) Can you give me the email address you want your card emailed to?
(VERIFY EMAIL ADDRESS CAREFULLY; READ BACK ONE LETTER/NUMBER AT A TIME)
_____@_____

Thank you for your time and patience. Your response provides valuable insight that will help improve utility programs.

1.2 Contractor Interview Guides

Initial Contractor Interviews

Below is the contractor interview guide for interviews conducted at the beginning of the study.

Topic	ESA Contractors	CBOs
Organization background	What is the focus of your organization? Who do you serve? How does ESA fit into the picture?	What is the focus of your organization? What is your mission? Whom do you serve?
Organization work with renters	How do renters fit into your work? Do you know when you serve a renter or a homeowner or is that invisible to you? How much of your work is with renters?	
Organization work with households that do not speak E/S	What share of your work is with households that seem to speak a language other than English or Spanish in the home? What share is with households that cannot communicate effectively in English or Spanish? (We'll come back to this topic a bit more later.)	
Role	What is your role in the organization?	
Rental housing needs	What are the biggest opportunities you see to address energy needs in rented homes? How does this differ between large MF buildings, small MF buildings, and rented SF homes? Do you notice any differences by ownership structure for the homes?	What are the main needs you deal with among the people you serve who rent their homes? What role do energy-related needs play among these households? Is there any difference by type of housing as far as you can tell? (Probe on how they view type of housing, which could be structure size or ownership type.)
ESA and CARE role in meeting needs	What do you usually do or install in rental housing? How does that differ by housing type?	Are you familiar with CARE and ESA? Do you incorporate CARE or ESA in your work with the people you serve at all? How?
Unmet needs	Do you see any missed opportunities in rental housing, like common efficiency opportunities that ESA doesn't provide?	What, if anything, stands in the way of renters you serve making use of CARE or ESA?

Topic	ESA Contractors	CBOs
Needs assessment	We will be surveying and interviewing low-income renters to help inform the utility programs about their energy-related needs. What are one or two things we should definitely ask about or try to understand as we survey and interview these households?	
Languages spoken	In what languages does your organization engage with clients? Do you serve households that do not speak any of these languages? How? (Explore which non-E/S languages clients speak and any particularly effective-seeming strategies.)	In what languages does your organization engage with the people you serve? Do you serve households that do not speak any of these languages? How? (Explore which non-E/S languages clients speak and any particularly effective-seeming strategies.)
Ability to communicate in E/S		How common is it for households that speak a language other than English or Spanish at home to be able to communicate with businesses or program providers in English (or Spanish)?
Differences in needs	Do you see any meaningful differences in energy-related needs among households that speak English, those that speak Spanish, and those that speak languages other than English or Spanish? If so, what are they? Are there differences in energy-related needs between those who can communicate effectively in English or Spanish and those who cannot?	
Program outreach	Other than doing marketing in various languages and collaborating with community-based organizations, what" approaches would you suggest to the utilities' ESA program for engaging low income households that speak a language other than English or Spanish?	
Program implementation	How can utility programs best serve households in-home (for audits, efficiency upgrades, and energy education) when the contractors and households do not speak a common language?	
Research outreach		What would be your top two or three suggestions on reaching households that do not speak English or Spanish effectively for research purposes if a future low income needs assessment study wanted to focus on this population to explore some of these issues directly with them?

Topic	ESA Contractors	CBOs
Wrap-up	Those are all the questions I have. I would be happy to take any other insights or thoughts you have about household needs of renters that we should know about.	

Ending Contractor Interview Guide

Below is the contractor interview guide for interviews conducted at the end of the study.

1. To serve low income renters via ESA, how do you find and outreach (calls, mailers, door to door, etc.) to customers living in:
    a. multifamily rental properties: _____
    b. single-family rental properties: _____

2. Based on your experience supporting the ESA program, what have you seen as the main barriers to serving the renters living in different types of properties?
    - Lack of customer interest?
    - Lack of opportunities for the contractors?
    - Reaching the property Owner?
    - Getting the property owner to agree?
    - Other:

3. What types of properties or situations are the contractors more successful serving?

4. Would you say they have more or less success treating rental customers who live in MF properties or SF properties? Why? (for example, is one harder to locate, or does one have fewer opportunities for measures, etc.)

5. I have some questions about how many units you can serve:
    a. Number of rental units served in a year: _____
    b. Number of *those* units that require landlord/owner approval to fully serve: __
    c. Number within above number that you're able to actually get approval for: ___

6. Please describe briefly the most meaningful measure opportunities you see that require building / unit owner approval? (In other words, what kinds of measures that require approval add up to the biggest energy saving opportunities?)

7. When building / unit owner approval is needed, who typically initially seeks the approval — you or the tenant?

8. Please estimate how often the following happens when you seek building / unit owner approval:
    a. We get approval: _____ %
    b. We cannot reach anyone who could give us approval: _____%

c. The relevant owner or owner's representative refuses to approve the work: _____%
d. Something else happens: _____% (Please describe below if the three scenarios above don't capture the vast majority of situations.)

We appreciate your insights!

Appendix E: 2022 California LINA – ESA Contractor/CBO Interview Results

MEMORANDUM

Date: June 29, 2021

To: LINA Study Team

From: Evergreen Economics

Re: 2022 California Low Income Needs Assessment – ESA Contractor/CBO Interview Results

This memorandum describes the results of a series of interviews conducted by Evergreen staff with contacts from 12 Energy Savings Assistance (ESA) program contractors and community-based organizations (CBOs) nominated by the investor-owned utilities (IOUs). The goal of these interviews was to gain insight into the energy needs of low-income renters and households that do not speak English or Spanish to inform our survey design for the 2022 California Low Income Needs Assessment.

Key Takeaways

Renters' Energy Needs

- ESA contractors frequently reported that process issues such as owner authorization and narrow eligibility criteria cause lost energy savings across the board in rental housing.
- Contractors often specified that these process issues may be more pronounced for multifamily buildings. This may imply that these buildings have greater energy needs.
- Measures frequently flagged as opportunities for renters include the replacement of non-functional HVAC systems, water heaters, and appliances.

Program Insights for Reaching Non-English and Non-Spanish-Speaking Households

- Common methods of communicating with non-English and non-Spanish-speaking households include hiring company staff who speak the household's primary language, asking community and/or family members to act as translators, using a language translation line, and leveraging Google Translate. Interviewees are generally satisfied with the effectiveness of these methods.

Implications for English/Spanish Needs Assessment Research

- In general, ESA contractor and CBO contacts could not identify specific differences in measure-related energy needs between households that speak English or Spanish and those that do not (8 of 12 respondents).
- Five respondents reported that they believe non-English and non-Spanish-speaking households do not receive the same level of marketing and outreach, leading to more pronounced energy needs (3 respondents), or that these households are at the lower end of the income spectrum and subsequently may live in less maintained housing that could benefit from program participation (2 respondents).

Methodology

We conducted Interviews with 12 contacts, 11 of which were nominated by the IOUs and one of which was self-selected by Evergreen. The California Low Income Oversight Board (LIOB) was invited to nominate contacts but did not do so. Of the 12 contacts we interviewed, nine were ESA contractors exclusively, two acted as both CBOs and ESA contractors, and one was exclusively a CBO. Eight of the contacts provided filled executive roles, while the roles of the other four contacts were program managers, administrative supervisors, or program directors.

We conducted 45-minute semi-structured interviews with each contact. The interviews consisted of planned topics and questions (see Addendum), but were approached as an open-ended discussion to encourage interviewees to speak to issues that were important to them.

Non-English and Non-Spanish-Speaking Households

Frequency of Languages Encountered

Interviewees estimates of work done (a combination of outreach and implementation) for non-English and non-Spanish-speaking households. Five respondents estimated that at 1 to 3 percent of the work they have done has been for these households, three respondents estimated it to be 10 to 20 percent, and one respondent estimated 30 percent.

Interviewees reported also interacting with households where Vietnamese, Mandarin, Korean, Tagalog, Farsi, Arabic, and Russian are spoken as their primary languages. Most interviewees reported that only a small share of households could not communicate effectively in English or Spanish (1 to 2%) while the rest of the households could often rely on a community or family member to translate.

Energy Needs

With a few exceptions, interviewees could not identify differences in energy needs between English and Spanish-speaking households versus households that speak other primary languages.

When interviewees identified differences in energy needs, they often attributed the differences to barriers in program awareness and enrollment rather than specific measures. Two contractors pointed out that households with primary languages other than English or Spanish were less familiar with the program, leading to lower program participation.

Two contacts (one CBO and one contractor) pointed out that systemic issues lead to greater energy needs for non-English and non-Spanish speaking homes, rather than any one specific measure. These contacts claimed that non-English and non-Spanish-speaking households are often on the lower end of the low-income range, have larger households, and live in less maintained housing. In their view, these traits are barriers to serving these households because of a lack of emphasis on the needs of the worst maintained housing, leading to substandard electrical, plumbing, and envelope measures that are not addressed by the program. The contractor added that these households are less likely to receive outreach that educates them on how to reduce energy use.

Outreach and Implementation

Many interviewees pointed out that in-person and word of mouth outreach was the most effective approach with non-English and non-Spanish-speaking households. Reasons offered for this included that it builds trust and confidence in the program, that it is easier to show customers what they need to enroll in person, and that the alternative of printed advertising is often not effective.

There were mixed opinions regarding the efficacy of printed outreach. Some claimed that mailers and letters in multiple languages are ineffective because they are ignored or not noticed. Others believed that marketing and printed materials do not sufficiently reach non-English and non-Spanish-speaking households because they are not offered in enough languages.

Common communication strategies used among contractors included:

- A language translation line provided by the utility;
- Asking a household member who speaks English or Spanish to act as a translator;
- Google Translate; and
- Utilizing a member of the building staff who is fluent in the household's language.

All interviewees were satisfied with the effectiveness of these strategies.

Interviewee Suggestions for Reaching Non-English and Non-Spanish-Speaking Households

Few contacts had specific suggestions for reaching non-English and non-Spanish-speaking households. Those who did offer feedback gave the following suggestions:

- Expand the number of program staff who speak frequently-encountered non-English and non-Spanish primary languages.
- Increase printed program marketing in a wider array of primary languages.
- Increase funding to the CPUC's CHANGES program that serves limited English proficient consumers had increased funding (mentioned by one respondent).

Renters' Energy Needs

Interviewees' insights regarding renters' needs mainly followed a theme of improving processes to expand offerings and access to certain measures.

Improving Processes

Eight contacts highlighted obtaining owner authorization as a barrier to energy savings in rental housing. Frequently, the challenges with obtaining owner authorization were logistical (i.e., identifying the owner and receiving approval), or were due to resistance from owners. Others attributed challenges with authorization to the tenant (i.e., the tenant is afraid of rents being raised, or the tenant is in conflict with the landlord). Not receiving owner authorization means that a rental unit is only eligible for simple measures (e.g., light bulbs, shower heads, and aerators), leading to lost energy saving opportunities across the board.

Several contractors emphasized that the difficulty with owner authorization creates more barriers to addressing needs in multifamily buildings, because owners of these buildings are more difficult to reach.

Interviewees frequently flagged the narrow scope of program rules as a barrier to meeting renters' needs. Examples include:

- Climate Zone Criteria for Cooling Measures
    - Eligibility for cooling equipment offered by the program is limited to specific climate zones, even though heat in non-eligible climate zones is similar.
- ESA Income Criteria
    - One interviewee described customers who seemed low-income relative to the standard of living in the area, but whose household income was not 200 percent or less of the federal poverty level, making them ineligible for the ESA program despite a clear need.
- Age Requirements for Program Replacements
    - Interviewees mentioned that they often cannot replace non-functional equipment (such as refrigerators and washing machines) because they do not meet an age of manufacture standard set by the program.
- Replacement of Furnaces and Water Heaters

  - Though contractors may service furnaces and water heaters for renters if service would improve performance, renters are not eligible for the replacement and/or major repair of these measures.
- Replacement of HVAC Equipment and Refrigerators
  - The replacement of refrigerators and some HVAC when the owner owns the equipment and pays the utility bill requires a copayment from the owner. This can be a barrier to providing these measures to tenants who need them.

Suggestions for Assessment

Interviewees were asked to share any questions that they think would be important to ask in the upcoming Low Income Needs Assessment. The following suggestions were offered:

- Are low-income renters receiving and reading program marketing materials?
- Are low-income renters aware of the existence of energy efficiency programs?
- For those enrolled, was the enrollment process a burden?
- How long has the renter been living in their home?
- Do enrolled renters feel that program eligibility criteria are overly restrictive?
- What measures are most cost-effective/attractive to low-income renters?

Addendum: Interview Topics and Questions

Topic	ESA Contractors	CBOs
Organization background	What is the focus of your organization? Who do you serve? How does ESA fit into the picture?	What is the focus of your organization? What is your mission? Whom do you serve?
• Organization work with renters	How do renters fit into your work? Do you know when you serve a renter or a homeowner or is that invisible to you? How much of your work is with renters?	
• Organization work with households that do not speak English or Spanish	What share of your work is with households that seem to speak a language other than English or Spanish in the home? What share is with households that cannot communicate effectively in English or Spanish? (We'll come back to this topic a bit more later.)	
• Role	What is your role in the organization?	
Rental housing needs	What are the biggest opportunities you see to address energy needs in rented homes? How does this differ between large MF buildings, small MF buildings, and rented SF homes? Do you notice any differences by ownership structure for the homes?	What are the main needs you deal with among the people you serve who rent their homes? What role do energy-related needs play among these households? Is there any difference by type of housing as far as you can tell? (Probe on how they view type of housing, which could be structure size or ownership type.)
• ESA and CARE role in meeting needs	What do you usually do or install in rental housing? How does that differ by housing type?	Are you familiar with CARE and ESA? Do you incorporate CARE or ESA in your work with the people you serve at all? How?
• Unmet needs	Do you see any missed opportunities in rental housing, like common efficiency opportunities that ESA doesn't provide?	What, if anything, stands in the way of renters you serve making use of CARE or ESA?
• Needs assessment	We will be surveying and interviewing low-income renters to help inform the utility programs about their energy-related needs. What are one or two things we should definitely ask about or try to understand as we survey and interview these households?	

Topic	ESA Contractors	CBOs
Languages spoken	In what languages does your organization engage with clients? Do you serve households that do not speak any of these languages? How? (Explore which non-E/S languages clients speak and any particularly effective-seeming strategies.)	In what languages does your organization engage with the people you serve? Do you serve households that do not speak any of these languages? How? (Explore which non-E/S languages clients speak and any particularly effective-seeming strategies.)
• Ability to communicate in E/S		How common is it for households that speak a language other than English or Spanish at home to be able to communicate with businesses or program providers in English (or Spanish)?
• Differences in needs	Do you see any meaningful differences in energy-related needs among households that speak English, those that speak Spanish, and those that speak languages other than English or Spanish? If so, what are they? Are there differences in energy-related needs between those who can communicate effectively in English or Spanish and those who cannot?	
• Program outreach	Other than doing marketing in various languages and collaborating with community-based organizations, what approaches would you suggest to the utilities' ESA program for engaging low-income households that speak a language other than English or Spanish?	
• Program implementation	How can utility programs best serve households in-home (for audits, efficiency upgrades, and energy education) when the contractors and households do not speak a common language?	
• Research outreach		What would be your top two or three suggestions on reaching households that do not speak English or Spanish effectively for research purposes if a future low income needs assessment study wanted to focus on this population to

Topic	ESA Contractors	CBOs
		explore some of these issues directly with them?
Wrap-up	Those are all the questions I have. I would be happy to take any other insights or thoughts you have about household needs of renters that we should know about.	